LEQ'Á:MEL FIRST NATION

ENVIRONMENTAL MANAGEMENT PLAN

PART 1: Environmental Management Framework

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Submitted to:

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TABLE OF CONTENTS

Figures

Tables

1. INTRODUCTION

Leq'á:mel First Nation (Leq'á:mel) developed a Land Code to replace the land management provisions of the *Indian Act*. The Land Code was drafted pursuant to the Framework of First Nations Land Management and the *First Nation Land Management Act.* As part of this framework, the Land Code forms the laws related to Leq'á:mel lands and enables Leq'á:mel to exercise our own jurisdiction, control and decision making in respect to the development, conservation, protection, management and administration of our lands.

This Environmental Management Plan (EMP) will become an integral part of the Land Code agreement. It provides a comprehensive environmental strategy consisting of relevant legislation, best management practices, guidelines, and strategies to assist Leq'á:mel with managing our lands in an environmentally and culturally sustainable manner for the benefit of future generations. It is intended to be visionary, goal-oriented, and based on the aspirations of both present and future community members.

1.1 Purpose

The EMP has been prepared to guide the Leq'á:mel environmental planning and management process. The purpose of the EMP is to guide Leq'á:mel in minimizing environmental impacts associated with development and other activities on Leq'á:mel lands by providing a foundation of management actions. Specifically, the EMP document serves to:

The Leq'á:mel First Nation Environmental Mission Statement

S'olh temexw te ikw'eco xolhmet to mekw' stam it kewlat.

The people of the Leq'á:mel First Nation are committed to protecting our environment and our way of living. We respect the interconnectedness of air, water and soil. We will be proactive, not reactive. We will use and develop our land in a sustainable and environmentally responsible way, taking a long view looking backward and forward seven generations.

The Leq'á:mel First Nation's environmental mission is to protect and preserve our culture and land. We will educate, understand, and learn for the betterment of the land and environment in which we all share. By engaging the community, all members take ownership of the responsibility to protect the land and enforce the rules of the community. This community of responsibility includes band members, past and future generations, tenants, invitees, and neighbours. We will ensure the protection of our land and culture 100 years or even 1000 years into the future

This is our land. We have to look after everything that belongs to us.

- Describe current land uses, environmental features and existing environmental issues on Leq'á:mel lands;
- Identify community environmental management priorities and associated goals and objectives;
- Identify strategies to achieve the goals and objectives;
- Ensure environmental considerations are incorporated into decision making related to development activities on Leq'á:mel lands to prevent or minimize environmental impacts;
- Increase environmental awareness in the community and promote the principles of sustainable development on Leq'á:mel lands; and
- Protect Leq'á:mel lands and their natural environments for future generations.

The EMP not only establishes long-term direction for Leq'á:mel but also identifies immediate environmental issues and strategies to address them.

1.2 Scope

The authority of the EMP lies only within Leq'á:mel lands. However, Leq'á:mel Chief and Council and the Lands Department wish to work collaboratively and respectfully with local municipal, regional, provincial, and federal bodies and land developers to ensure that the environment is protected for everyone.

For the purpose of this EMP, Leq'á:mel lands refer to the parcels of Reserve lands held solely by Leq'á:mel (as described in Section 2.0). The EMP does not apply to the Pekw'xe:yles Reserve, which is held in common by Leq'á:mel and 20 other First Nations.

1.3 Organizational Structure

The EMP is organized in three key parts:

- **Part 1 – Environmental Management Framework (EMF)**
  - Section 1.0 outlines the purpose and scope of the EMP;
  - Section 2.0 provides and environmental overview of Leq'á:mel lands;
  - Section 3.0 describes the methodological approach used in developing the EMP;
  - Section 4.0 provides an overview of the management priorities of Leq'á:mel and the existing conditions and issues related to each on Leq'á:mel lands;
  - Section 5.0 provides an overview of the legislative environment associated with the management priorities identified; and
  - Section 6.0 provides a road map for implementation and administration of the EMP.
- **Part 2 – Detailed Individual EMP Series**
  - Provides individual, targeted EMPs, including relevant legislation, standards and best management practices, for each of the environmental management priorities identified in the EMF.
- **Part 3 – Environment Operating Procedures (EOPs)**
  - Provides a series of EOPs that incorporate community goals and objectives to guide the operation of tasks by any developer on Leq'á:mel lands that have the potential to adversely impact the environment.

Additional supporting documents have been provided as appendices. Hyperlinks to documents and references throughout the EMP have been provided where possible for convenience.

2. SETTING THE CONTEXT

2.1 Regional and Local Context

Since time beyond memory, Leq'á:mel people have self-governed and practiced our culture in the land of our ancestors. Leq'á:mel people are part of a complex network of relationships between families, villages and resources that developed out of thousands of years of societal growth within S'ólh Téméxw ("our world, our land").

S'ólh Téméxw is a vast territory encompassing many communities and villages running from what is now called the Lower Fraser Canyon, down the Fraser River all the way to the Pacific Ocean, including many tributary lakes and rivers.

S'ólh Téméxw and Leq'á:mel are situated in what is now known as the Fraser Valley. While the Fraser Valley encompasses a large geographic area, most of the population resides on a small habitable land base in the fertile valley floor. The Fraser Valley is the third most populated region in British Columbia, and the population is expected to double over the next twenty to thirty years. The region faces several land constraints such as the restrictions of the Agricultural Land Reserve (ALR) and the risks associated with being located in the Fraser River floodplain. Over 90% of the region's population resides on less than 1% of the land base, demonstrating the extreme growth pressures this area faces.

Leq'á:mel lands are located adjacent to the planning boundary of the Fraser Valley Regional District (FVRD). The FVRD is a local government authority incorporating seven electoral areas and six municipalities. The District of Mission is the closest municipality to Leq'á:mel.

Leq'á:mel has a land base of 480.9 hectares (ha) and is made up of ten individual Reserve parcels including:

- Yaalstrick 1
- Lackaway 2
- Lakway Cemetery 3
- Papekwatchin 4
- Aylechootlook 5
- Holachten 8
- Zaitscullachan 9
- Skweahm 10
- Lakahahmen 11
- Sumas Cemetery 12

The populated Leq'á:mel communities of Holachten, Skweahm, and Lakahahmen are located approximately 20 km east of Mission, near the community of Deroche along the Lougheed Highway. Leq'á:mel lands located on the north side of the Fraser River include residential, commercial, industrial, institutional and agricultural use while the parcels south of the river are generally undeveloped (**Figure 1**).

Many lots on Leq'á:mel lands are under Certificates of Possession (CP), as indicated in **Figure 2**. It is important to note that lands held under CP are subject to the Leq'á:mel Land Code, the Leq'á:mel EMP, any applicable Federal laws, and any policies and laws implemented by Leq'á:mel.

Figure 1. Overview of Leq'á:mel Lands

Figure 2. Certificate of Possession Held Lots

2.2 Land Use

The following sections provide a summary of each of Leq'á:mel's parcels of land including size, and current and adjacent land use.

HOLACHTEN – 102.1 ha

Holachten is located 2 km east of the Town of Deroche and accessed by Highway 7, which passes through the southernmost portion of the parcel. A Canadian Pacific Rail right-of-way cuts through the southernmost portion of the parcel.

In the past, Holachten was the location of several pit houses. Today it is one of the primary residential areas for both members and non-members living on Leq'á:mel lands. It is also the administrative centre of Leq'á:mel – the Band Office and other administrative and community services located here. The remaining portions of the parcel are forested and/or vegetated.

Current use: The majority of the parcel is developed as residential areas consisting of 44 Band member housing units, the Band-owned Nicomen Mobile Home Park, and individual CP-held residential units. Band housing includes three neighbourhoods (Valleyview West, Valleyview Central, Valleyview East). Institutional use of the parcel includes the Band office, Public Works maintenance building, community hall, a pump station, and newly built Health Centre.

Adjacent use: The Canadian Pacific Rail Line and Nicomen Slough are located south of the parcel, a gravel extraction operation is located west, forested and residential land is located north, and forested, undeveloped land is located to the east.

LAKAHAHMEN – 38.81 ha

Lakahahmen translates to "Level Place" and historically was a pit and long house community, and the largest settlement in the area. It is located along a historical trading route where travellers would depart the Fraser River for calmer and more protected waters. Connected to a well-developed network of trails that linked to other village sites and natural resources, Lakahahmen served as a tribal hub for families from up and down the Fraser River with people travelling here to visit, dance, and hold ceremonies.

Located near Deroche, Lakahahmen still serves as a community hub and a primary residential area for both members and non-members living on Leq'á:mel lands. A portion of the parcel is leased out to the Fraser Valley Regional District for the Deroche Community Hall under a 99 year lease located along North Nicomen Road. A Canadian Pacific Rail right-of-way crosses the northern portion of the parcel.

Current use: The parcel contains residential areas consisting of 6 Band member housing units, the Band-owned Lakahahmen Mobile Home Park, Kelly Estates Mobile Home Park on a CP-held lot, and individual CP-held residential units. There is a small commercial area on CP-held land with the Eagle Café, a trading post and a fireworks store. A sacred cemetery is located directly north of the Deroche Community Hall. A fenced public works storage area is also located on the parcel.

Adjacent use: The parcel is surrounded by North Deroche Road to the east, Nicomen Slough to the south, agricultural land to the west, and residential lots and forested areas to the north.

SKWEAHM – 86.1 ha

Skweahm is located on Nicomen Island, 2 km west of Deroche and along Highway 7, and it is protected by the Nicomen Island dyke. It is one of the primary residential areas for both members and non-members living on Leq'á:mel lands. It is also the location of the Leq'á:mel Transfer Station and the future gas station and Tim Hortons.

Current use: The parcel contains residential areas consisting of 19 Band member housing units, the Oasis Country Estates Mobile Home Park on a CP-held lot, and individual CP-held residential units. Commercial use consists of the gas station, convenience store and restaurant, currently under construction. There are also industrial (Transfer Station) and agricultural land uses – 3 acres are currently leased out for agricultural use. The In-Shuck-Ch Nation Band Office is located on the parcel, adjacent to where the gas station is being constructed.

Adjacent use: The parcel is bounded by Highway 7 and Nicomen Slough to the north and agricultural use to the east, south, and west.

ZAITSCULLACHAN – 22.5 ha

Zaitscullachan is situated on some of the best agricultural land in the region, adjacent to the Zaitscullachan Slough. Access to the parcel is via Athey Road. A provincially-managed solid waste dump was present in Zaitscullachan Slough, approximately 500 m east of the parcel, from the 1970s to the 1990s.

Current use: The majority of the parcel is currently leased to Postma Farm for agricultural land use (corn and grass) while a residential building currently occupied by a Band member was recently developed on the southeast portion of the parcel.

Adjacent use: The parcel is surrounded by agricultural land to the south and west and Zaitscullachan Slough to the north and east.

PAPEKWATCHIN – 10.64 ha

Located on the northern bank of the Fraser River, Papekwatchin historically served as a family and community fishing and berry gathering area. The parcel is bisected by a dyke and accessed by a road that runs on top of the dyke on the south side of Nicomen Island. The closest major road to Papekwatchin is Lougheed Highway (3.5 km).

Current use: The northern portion of the parcel is leased for agriculture (including cattle grazing) while the southern portion remains undeveloped and forested. The parcel is still used as a fishing location by some members.

Adjacent use: The parcel is surrounded primarily by agricultural land use to the east, north and west and the Fraser River directly south.

AYLECHOOTLOOK – 19.69 ha

Located at the confluence of the Sumas River and Vedder Canal, Aylechootlook is predominantly treed, vegetated and undeveloped. A dyke traces the northern perimeter of the parcel, which is accessible via North Parallel Road.

Current use: The parcel was previously used for agriculture, but it is currently overgrown and primarily used for recreational activities (*e.g.,* dirt biking, fishing).

Adjacent use: The Sumas River is located northwest of the parcel, the Vedder Canal is located to the northeast, and the TransCanada Highway is located directly south.

LACKAWAY – 26.43 ha

Located west of Chilliwack along the TransCanada Highway, Lackaway is predominantly a treed and vegetated area of land. It is accessed via a private road extending off Arnold Road, which is 2 km from the highway interchange.

Current use: Overgrown with no known land use other than occasional log storage on the southwest portion. Cattermerole Timber (a dry log sort operation) leases a portion of the parcel (~1.2 ha) for log storage. Erosion occurring along the bank of the Fraser River impedes productive use of the parcel.

Adjacent use: A log sort facility is located west of the parcel, a heavy equipment auctioneer (Ritchie Bros.) is located to the southwest, a dyke with fill material and the Fraser River is located to the north, agricultural activity is located to the east, and a soil company (Sumas Gro Media) is located to the southeast.

SUMAS CEMETERY – 3.75 ha

Sumas Cemetery is comprised of a cemetery on a steep, forested north-facing hillside. A Canadian Pacific Rail right-of-way crosses the northern portion of the parcel.

Current use: Former burial ground with no other known land uses.

Adjacent use: The parcel is bounded by the Sumas River to the north and surrounded by undeveloped, forested lands to the east, south and west.

LAKWAY CEMETERY – 2.25 ha

Lakway Cemetery is an undeveloped and largely forested cemetery on a steep northwest-facing hillside northwest of the City of Chilliwack.

Current use: Ancestral burial location with no other known land use.

Adjacent use: The parcel is surrounded by undeveloped, forested lands.

YAALSTRICK – 114.0 ha

Yaalstrick is known as the "Island that is Forever Changing" based on seasonal variations in flow that tend to shift, rework, and deposit sediments in other areas. It is partially vegetated but mainly comprised of sediment (gravel bars) that becomes covered by high water levels. The Fraser River Ecological Reserve is located just north of the parcel. Access to the island is by boat only with the nearest departure point being Nicomen Island near Deroche.

Current use: Undeveloped with no known land use other than occasional logging of Cottonwood in the past. The overall parcel size has been reduced by 30 to 40 acres due to erosion by the Fraser River (TRI, 2005).

Adjacent use: The parcel is surrounded by the Fraser River.

2.3 Services

As previously noted, only three of Leq'á:mel's 10 parcels are populated: Holachten, Skweahm and Lakahahmen. In addition, a residential unit was recently developed on Zaitscullachan. The following sections outline the servicing for these four parcels.

2.3.1 Electricity and Heating

All parcels are serviced with hydroelectricity, and all buildings are heated by wood burning stoves and/or propane – above-ground propane storage tanks are located adjacent to buildings.

2.3.2 Solid Waste Management

The Transfer Station on Skweahm (**Figure 1**) services all residents, including members and non-members, living on Leq'á:mel lands. There is a door-to-door waste collection service available to all members and tenants of mobile home parks owned by Leq'á:mel for a monthly fee. The Transfer Station accepts several waste streams, some of which have fees for drop-off, including:

- General household waste
- Recycling
- Metals
- Miscellaneous (non-hazardous) materials
- Select household hazardous waste items (*e.g.,* propane tanks, empty paint cans, used oil)
- Used kitchen appliances

Members and residents who pay rent to Leq'á:mel are allowed two free bags of household waste per week or a total of 8 free bags per month, and unlimited recycling. All other persons that drop off items at the Transfer Station must pay fees.

2.3.3 Drinking Water

All drinking water is obtained from groundwater wells, some of which are part of a community water system and others that are individual wells (**Figure 3**). The following describes the drinking water infrastructure on each parcel.

Holachten

A community water system consisting of a groundwater well, a 270 m^3 reservoir, and distribution mains (150 mm or more in diameter) services member housing, administrative buildings, and fire hydrants. The system extends to the east limit of MoQ'wem Place (Kerr Wood Leidal Associates, Ltd., 1999). The existing reservoir is undersized and does not provide adequate balancing, emergency and fire protection storage capacity for the service area (Urban Systems, 2012). There are also 2 individual sand point wells that supply CP-held lots.

The community system is sampled and tested by the First Nations Health Authority weekly. The individual wells are tested every six months.

Skweahm

A community water system consisting of a community groundwater well, a pumphouse with pressure tanks, and a network of watermains and waterlines services member housing units (Urban Systems, 2012). There are also 8 individual sand point wells and 1 deep water well that supply CP-held lots.

The community system sampled and tested by the First Nations Health Authority weekly. The individual wells are tested every six months.

Lakahahmen

A community water system comprised of a groundwater well, pressure tanks, and a small diameter distribution piping. There are also 4 individual sand point wells and 1 deep water well that supply CP-held lots.

The community system sampled and tested by the First Nations Health Authority weekly. The individual wells are tested every six months.

Zaitscullachan

An individual deep drinking water well services the residential unit. The well is tested every six months.

2.3.4 Sanitary

Septic systems are used for sanitary servicing on all parcels. The following describes the sanitary infrastructure on each parcel.

Holachten

A community wastewater system that consists of septic tanks and a raised mount disposal field (**Figure 3**) currently services the homes on MoQ'wem Place, which have drainage piping (Kerr Wood Leidal Associates, 1999). The mobile home park contains septic tanks that service 2 to 3 housing units each.

Skweahm

A community wastewater system designed to service 23 lots uses a gravity collection system that flows into two communal septic tanks. Treated effluent is pumped to raised-mound disposal fields (**Figure 3**), which are required due to the high groundwater table in the area (Urban Systems, 2012). The mobile home park contains septic tanks that service 2 to 3 housing units each. Individual properties have individual septic tanks and ground disposal fields.

Lakahahmen

Properties have individual septic tanks and ground disposal fields (Kerr Wood Leidal Associated, 1999). The mobile home parks contain septic tanks that service 2 to 3 housing units each.

Zaitscullachan

The property has an individual septic tank.

Figure 3. Groundwater and Community Wastewater Features

2.4 The Natural Environment

The following section describes key components of the natural environment that influence Leq'á:mel lands.

2.4.1 Topography

Surrounded by the mountainous terrain of Lhilheqey (Mount Cheam), Kw'eke'e'iqw (Sumas Mountain), Nicomen Mountain and Deroche Mountain, Leq'á:mel lands predominantly lie at a low elevation in the valley in the Fraser River floodplain. The mountains surrounding Leq'á:mel are part of two ranges: the Coast Mountains Pacific Ranges to the north and the North Cascades to the south. The elevation of Leq'á:mel lands ranges from sea level in the river valley to 26 m above sea level on the upper slope areas of Holachten.

The landscape observed today was influenced by the ice and glacial melt during the last ice age. Ice advance, retreat and melt carved the hillsides, deposited materials and created the Fraser River. The deposition that has washed down the Fraser River for several million years has created nearly 3,000 m of sediment overlay over the granitic rocks of the Coast Mountains. These sediment deposits provide nutrient rich soils prime for agriculture. The thin, unconsolidated soils in some areas on the valley floor are susceptible to erosion. Deposition continues to this day with debris flow, floods, and landslides continuing to move glacial sediments to the valley floor.

2.4.2 Surface Water

As shown in **Figure 4**, key water features on and/or adjacent to Leq'á:mel lands include:

- **Nicomen Slough:** Nicomen Slough is a significant water feature that runs adjacent to Holachten, Lakahahmen, and Skweahm. It was once a tributary to the Fraser River before diking in the 1930s for flood protection. Construction of the dyke reduced the annual flushing and high water flows of the slough.

- **Deroche Creek**: Deroche Creek flows directly through Lakahahmen in a southerly direction, ultimately discharging into Nicomen Slough. Much of Lakahahmen is located on an alluvial fan associated with the creek.
- **Quaamich Slough:** Located on the east side of Skweahm, Quaamich Slough stretches almost 2.5 km between Nicomen Slough and the Fraser River. It is bisected by a dyke approximately 500 m inland from the Fraser River, which restricts fish access. Water is pumped through the dyke to control water levels in the slough. The northern third of Quaamich Slough is marshy, and predominantly vegetated with reed canary grass.
- **Wilson Slough:** Wilson Slough enters the Fraser River at Lackaway, immediately west of Chilliwack Mountain. The channel is not dyked, and water levels are influenced by the Fraser River. Water levels typically vary by 5 m annually at Lackaway. The headwaters of Wilson Slough consist of a grid of constructed roadside and farm ditches south of Highway 1 that have likely increased storm runoff into the slough over time.

- **Zaitscullachan Slough:** Located immediately east of Zaitscullachan, Zaitscullachan Slough flows in a southerly direction, conveying water from Nicomen Slough to the Fraser River.
- **Siddle Creek:** Siddle Creek flows in a southerly direction in the easternmost portion of Holachten, and conveys water into Nicomen Slough.
- **Fraser River:** The Fraser River flows west through Leq'a:mel lands – 6 parcels (Holachten, Zaitscullachan, Skweahm, Lakahahmen, Papekwatchin, and Yaalstrick) are located on the north side and 4 parcels (Lakway Cemetery, Aylechootloook, and Sumas Cemetery) are located on the south side. The Fraser River is the longest river in British Columbia and drains an area of over 220,000 square kilometres.
- **Vedder and Sumas Rivers:** The Vedder River flows in a northwest direction on the east side of Aylechootlook where it meets with the Sumas River, ultimately flowing into the Fraser River. The Sumas River flows in a northeast direction on the west side of Aylechootlook where it meets with the Vedder River, ultimately flowing into the Fraser River.

Leq'á:mel lands also include several **wetlands:**

- Aylechootlook contains a large Spirea wetland in the northwest corner of the parcel.
- Lackaway contains wetland areas associated with Wilson Slough.

Figure 4. Surface Water Features

2.4.3 Groundwater

Leq'á:mel lands are located on three different aquifers (drinking water sources):

- **Lake Errock/Deroche Creek Aquifer** – A shallow, unconfined aquifer underlying Holachten and fed by surface and subsurface water draining off slopes to the north (FVRD, 2008).
- **Nicomen Slough Aquifer** – A shallow (near ground surface), unconfined aquifer underlying Lakahahmen, Skweahm, Zaitscullachan and Papekwatchin, and fed by Fraser River flows (FVRD, 2008).
- **Chilliwack-Rosedale Aquifer** – A shallow, unconfined aquifer underlying Lackaway, Lakway Cemetery, Sumas Cemetery and Aylechootlook with generally slow moving groundwater (Golder Associates, 1997).

2.4.4 Vegetation

Leq'á:mel lands are located in the Coastal Western Hemlock (Eastern Very Dry Maritime) Biogeoclimatic Zone. Forests in this zone are dominated by coniferous tree species, including Western hemlock, Western red cedar, and Douglas fir. Lands on the valley floor are dominated by Poplar. Holachten and Lakahahmen are located on the low slopes of Deroche and Nicomen Mountains where Big leaf maple and Red alder are the dominant species.

Land disturbance and development has altered the typical composition of vegetation on Leq'á:mel lands. Significant portions of Leq'á:mel lands are cultivated or consist of open fields but a few forested or heavily vegetated areas remain:

- **Holachten:** Mixed forest with large Western red cedars and Big leaf maple, largest patch of forest in the northwest corner, and an abundance of stinging nettle (culturally significant).
- **Lakahahmen:** Primary patch of forest is mixed deciduous-coniferous.
- **Aylechootlook:** Consists of forest patches and wetland areas subject to seasonal flooding near the Vedder Canal, and a patch of Red alder in central-west portion of the parcel.
- **Lackaway:** Wetland areas, forest patches and dense wetland edge vegetation.
- **Lakway Cemetery:** Patches of mixed forest.

2.4.5 Wildlife

Areas of undeveloped, forested, and partially forested land within Leq'á:mel lands provide suitable habitat for a variety of species, including, deer, small mammals (*e.g.,* rabbit), and a variety of amphibian and bird species. Waterfowl may also be present along waterways.

The agricultural landscape of some parcels, particularly those located south of Highway 1, may provide habitat for mammals (*e.g.,* coyote) and a variety of bird species, including over-wintering waterbirds that feed on exposed

crops and insects. The areas adjacent to the Fraser River and sloughs provide forested riparian corridors that may provide habitat for deer, small mammals (including semi-aquatic ones such as beaver, muskrat and mink), amphibians, and birds. Riparian areas along storm water ditches and swales may provide habitat suitable for amphibians, birds and small semi-aquatic mammals.

- **Small mammals:** Muskrats and significant beaver activity have been observed in Quaamich Slough adjacent to Skweahm.
- **Turtles:** There are many fallen trees in the upper reaches of Quaamich Slough adjacent to Skweahm that provide ample basking area for turtles. Vegetation, submerged and floating, is dense in this upper pond, which provides ample food source for turtles. The Nicomen Slough main stem located at Lakahahmen and Skweahm provides habitat conditions that are ideal for turtles, with numerous basking logs, small channels and islands present.
- **Bats:** Several large trees and cavities were noted as suitable bat roosting habitat on Holachten. There are also several south facing rocky edges with crevices on Lakway Cemetery that are suitable as bat roosts and potential hibernacula.
- **Amphibians:** Many dried and wetted pool areas located in Aylechootlook appear to be suitable for amphibian breeding in spring.
- **Birds:** Mixed forest patches on Leq'á:mel lands offer suitable nesting areas for a variety of birds.

2.4.6 Fisheries

Leq'á:mel is favourably located near the headwaters of important watercourses. These headwaters provide a flow of cold, clean water favourable to fish populations.

- **Fraser River:** Gravel deposition of the Fraser River also contributes to a diversity of fish species. All five species of Pacific Salmon (Pink, Chinook, Coho, Sockeye, and Chum) can be found at some point in their life cycle in the Fraser River. According to BC's online Fisheries Information Summary System, the Fraser River supports a large number of additional fish species, including but not limited to:
  - Steelhead and Cutthroat trout
  - Eulachon
  - White sturgeon
  - Three-spine stickleback
  - Dolly Varden
  - Mountain whitefish
  - Pea-mouth chub
  - Suckers

- **Nicomen Slough:** According to BC's online Fisheries Information Summary System, Nicomen Slough supports a large number of fish species, including but not limited to
  - White sturgeon
  - Rainbow and Cutthroat trout
  - Three-spine stickleback
  - Sculpin
  - Suckers
  - Chinook and Coho salmon

- **Zaitscullachan Slough:** According to recent fish surveys (Pearson Ecological, 2016), Zaitscullachan Slough supports a large number of fish species, including but not limited to:
  - Brassy minnow
  - Northern pikeminnow
  - Prickly sculpin
  - Three-spine stickleback

- **Sumas River:** According to BC's online Fisheries Information Summary System, Sumas River supports a large number of fish species, including but not limited to:
  - Three-spine stickleback
  - Coho salmon
  - Red-side shiner
  - Prickly sculpin
  - Pea-mouth chub

- **Non-indigenous/introduced species**: According to recent fish surveys (Pearson Ecological, 2016), a number of non-indigenous/introduced species including Pumpkinseed, Largemouth bass, Carp, Brown bullhead, Green frog, and Bullfrog have been observed in Nicomen Slough and Zaitscullachan.

2.4.7 Species at Risk

The *Species at Risk Act* (SARA) is a federal Act that applies to Leq'á:mel lands. It provides legal protection to species at risk (SAR) and their critical habitat that are listed on Schedule 1 of the Act. According to recent SAR surveys (Mitchell, Gielens & MacTavish, 2016), the following SAR have been documented in the vicinity of and have the potential to be located on or adjacent to Leq'á:mel lands (**Figure 5**):

- **Western Painted Turtle:** One of largest and healthiest populations of Western painted turtle in the region is found in the northwestern portion of Nicomen Slough and associated watercourses. Quaamich Slough at Skweahm likely provides connectivity and travel corridors to surrounding known occupied and breeding habitats. Zaitscullachan Slough and the adjacent unnamed slough also provide habitat suitable for Western painted turtle.

- **Oregon Forestsnail:** Oregon forestsnail have been observed in the Nicomen area wetlands and on Holachten.

- **Western Toad and Red-Legged Frog:** Wetland habitats throughout Leq'á:mel lands provide potential habitat for Western toad and Red-legged frog.

- **Western Screech Owl:** The Western screech owl is found in a variety of coniferous and mixed forests, and is often associated with riparian zones with Broadleaf and Black cottonwood. Potential suitable habitat for the Western screech owl is expected to be present in the forested area on the north side of the Fraser River, east of Zaitscullachan.

- **Northern Rubber Boa:** The Northern rubber boa is found in humid mountainous regions and dry lowland areas. In dry lowland areas, they typically inhabit shrubby, treeless areas. Within Leq'á:mel lands, suitable habitat for the Northern rubber boa exists along Nicomen Slough, east of Holachten.
- **Great Blue Heron:** The Great blue heron is found along the coast, in fresh and saltwater marshes, and along rivers in grasslands. Leq'á:mel lands provide potential foraging and nesting habitat for the Great blue heron.

- **Fisheries:** White sturgeon, Mountain sucker, Coastal cutthroat trout, Bull trout, and Dolly Varden are all documented to occur on or adjacent to Leq'á:mel lands. Potentially suitable habitat for Salish sucker and Brassy minnow is also present, but these species have not been documented.

2.4.8 Environmentally Sensitive Areas

Environmentally sensitive areas are places that have special environmental features that are critical to the maintenance of various plant and wildlife populations (*e.g.*, rare ecosystems, habitats for SAR, *etc*.). There are several environmentally sensitive areas in and around the Leq'á:mel lands, including:

- **Sumas Mountain:** According to the City of Abbotsford – Sumas Mountain Sensitive Ecosystems Inventory there are at least 40 SAR and 27 ecosystems at risk. The 6,600 ha mountain is one of the last relatively intact forest expanses in the lower Fraser Valley.
- **Bert Brink Wildlife Management Area (WMA):** The WMA is situated at the confluence of the Fraser River and Vedder Canal and includes a portion of Strawberry Island. According to the Ministry of Forests, Lands and Natural Operations, the Bert Brink WMA provides habitat for SAR including Great blue heron, Peregrine falcon, Bald eagle, and Marbled murrelet. During the winter months, the open areas are partially flooded and attract foraging wigeon and Canada geese. The sloughs, wetlands and gravel bars provide important habitat for White sturgeon, Pacific salmon and Steelhead trout. The area includes over 200 ha of mature cottonwood forest that was once an active heron colony, and it is possible that heron may re-establish a colony in the WMA.
- **Fraser River Ecological Reserve:** This ecological reserve is protected under the *Protected Areas of British Columbia Act*. Ecological Reserves are areas selected to preserve representative and special natural ecosystems, plant and animal species, features, and phenomena. They provide the highest level of protection for the maintenance of physical and biological diversity while allowing for research and educational activities. The Friends of Ecological Reserves, a volunteer warden program, have documented sightings of over 62 species of birds, including Bald eagles, mallards, swallows, and gulls. Other wildlife has been spotted on the Ecological Reserve including beavers, coyotes, and Black-tailed deer.

Figure 5. Species at Risk On or Near Leq'á:mel lands

3. METHODOLOGY

A collaborative approach was used to gather knowledge and input from the community and to identify Leq'á:mel's environmental management priorities. This approach ensures that the goals and objectives of the EMP are in line with the needs, vision, and priorities of Leq'á:mel membership.

The following initial tasks were completed to provide important background information necessary for the development of this EMP:

- Review of existing literature related to environmental features and activities associated with Leq'á:mel lands;
- A site visit and high level overview of Leq'á:mel lands;
- Interviews with Leq'á:mel staff;
- Meetings and workshops with Chief and Council and the Family Advisory Committee;
- Community consultation and engagement; and
- Compilation of existing legislative guidelines, policies, regulations, best management practices, and applicable standards.

The specific environmental management priorities identified through the background review and community engagement formed the basis of the EMP. Descriptions of each environmental management priority are provided in **Section 4.0**.

3.1 Literature Review

A literature review was completed to develop an understanding of the existing baseline conditions and to assist with identifying key environmental management priorities on Leq'á:mel lands. Documents reviewed included, but were not limited to:

- Leq'á:mel Physical Development Plan (1999);
- Phased Environmental Site Assessments (2005-2011);
- Leq'á:mel Environmental Management Plan (2010);
- Leq'á:mel 5 Year Economic Development Plan (2012);
- Leq'á:mel Land Use Plan and Background Report (2015);
- Species at risk studies conducted on Leq'á:mel lands (2015-2016); and
- Leq'á:mel Zoning Law and Development Procedures (2016).

3.2 Site Visits

Site visits were conducted of Holachten, Lakahahmen, Skweahm, and Zaitscullachan. A turtle nesting area along the Nicomen Slough near Skumalasph (**Figure 5**) was also visited. The aim of the site visits was to provide a high level overview of Leq'á:mel lands and to observe areas and activities identified during the literature review.

Natural features observed on Leq'á:mel lands were documented as well as activities that are relevant to environmental management. **Table 1** below outlines some of the key observation during the site visits.

Table 1. Observations During Site Visits

Observation	Holachten	Skweahm	Lakahahmen	Zaitscullachan	Skumulasph
Chum in Deroche Creek			✓		
Mink in Quaamich Slough		✓			
Western painted turtle (SAR) in Nicomen Slough					✓
Invasive plants	✓	✓	✓	✓	✓
Stockpiling of old vehicles, electronics, tires and waste materials on properties	✓	✓	✓		
Agricultural activities / land use	✓	✓	✓	✓	
Remnants of open burning	✓				
Tires in Quaamich Slough		✓			
Above-ground fuel storage tanks	✓	✓	✓	✓	

3.3 Community Consultation and Engagement

Community input is a key component of EMP development. Activities and discussions related to the local environment and environmental management were completed in an effort to fully engage Leq'á:mel members. Initiatives included interviews with Leq'á:mel Staff, meetings with Leq'á:mel Chief and Council and the Family Advisory Committee, a community questionnaire, and a community open house. Community newsletters were developed and distributed following key milestones in the EMP development process to keep membership informed of all EMP-related activities throughout the process.

3.3.1 Interviews with Leq'á:mel Staff

Interviews were conducted with several Leq'á:mel staff members, including:

- Barb Leggat, Lands Manager;
- Stacey Goulding, Lands & Environment Project Manager;
- Vicki Scharley, Residential Property Manager;
- Karen Ruddick, Transfer Station Operator;
- Al McDonald, Public Works; and
- Helena Paul, Community Wellness Coordinator.

The aim of the interviews was to get staff perspectives on pressing environmental issues in the community. **Table 2** on the following page outlines the key environmental concerns mentioned by Leq'á:mel staff.

Table 2. Environmental Concerns Mentioned During Interviews with Leq'á:mel Staff

Environmental Concerns	Summary	Mentioned by
Waste management issues	• Open burning • Illegal dumping and burying • Stockpiling, especially old vehicles • Rat issues related to stockpiling	• All staff interviewed
Surface water issues	• Degraded slough conditions • Loss of natural connectivity • Sedimentation related to forestry	• 5 of 7 staff
Invasive plants	• Japanese knotweed and Himalayan blackberry in many areas	• 4 of 7 staff
Groundwater issues	• Poor water quality in some individual wells on CP held lots	• 2 of 7 staff
Air quality	• Impacts related to open burning and gravel operations	• 2 of 7 staff
Monitoring and enforcement needs	• Effective monitoring and enforcement needed to properly manage issues, especially waste	• All staff interviewed

3.3.2 Meeting with Chief and Council

Chief and Council was met with to review the approach to the EMP development process and to discuss issues, concerns and environmental management priorities. **Table 3** on the following page outlines the key environmental concerns, issues and priorities identified by Chief and Council.

Table 3. Key Environmental Concerns, Issues and Priorities Identified by Chief and Council

Environmental Concerns & Issues	Environmental Priorities
• Storage of old vehicles and other items on properties • Open burning and impacts on local air quality • Logging in Leq'á:mel's traditional territory and impacts on Deroche Creek • Invasive species (incl. Japanese knotweed and Himalayan blackberry) • Potential pesticide use from agricultural activities • Incoming gas station and potential for spills and/or earthquakes and contamination	• Solid waste management • Surface water restoration (dredging of Deroche Creek, Nicomen Slough restoration) and protection • Groundwater protection • Proper handling of hazardous wastes including fuels • Land development guided by straightforward processes and effective environmental protection measures • Environmental monitoring and enforcement

3.3.3 Meeting with the Family Advisory Committee

The Family Advisory Committee was met with to review the approach to the EMP development process and to discuss issues, concerns and environmental management priorities. **Table 4** below outlines the key environmental concerns, issues and priorities identified by the Family Advisory Committee.

Table 4. Key Environmental Concerns, Issues and Priorities Identified by the Family Advisory Committee

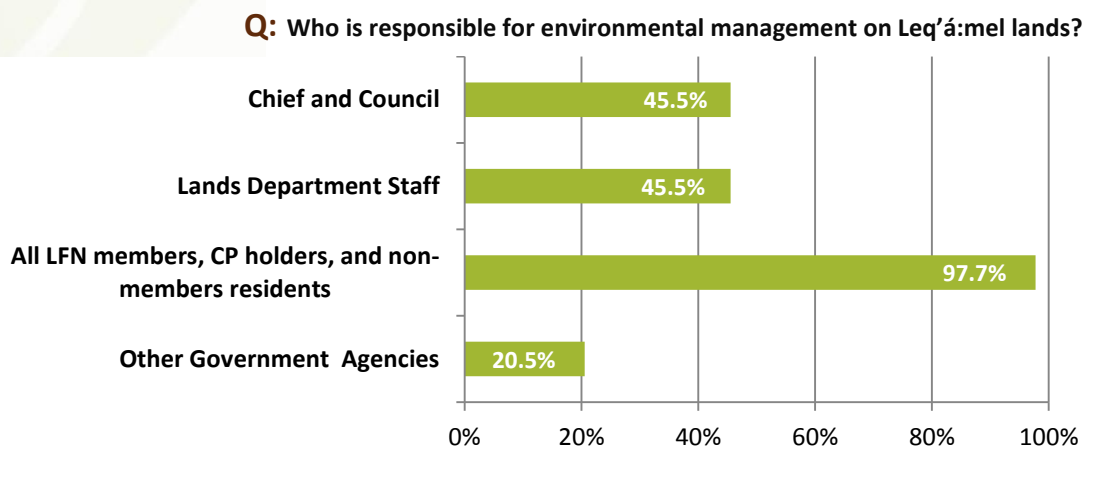
Environmental Concerns & Issues	Environmental Priorities
• State of sloughs and impacts on fisheries • Logging in Leq'á:mel's traditional territory and impacts on Deroche Creek • Sand and gravel operations near Leq'á:mel lands • Climate change and impacts on community • Impacts on cultural resources	• Surface water and fisheries restoration and protection • Effective environmental protection measures • Environmental impact considerations during referrals process • Cultural heritage protection • Environmental monitoring and enforcement

3.3.4 Community Questionnaire

A community questionnaire was developed and distributed to reach as many members as possible to solicit their perspectives and input on environmental issues and priorities. The questionnaire was available at the open house, and an online digital version of the survey was made available to all Leq'á:mel members to capture the input of those not able to attend the open house. A total of 46 surveys were completed by members representing a range of ages and on-reserve and off-reserve communities.

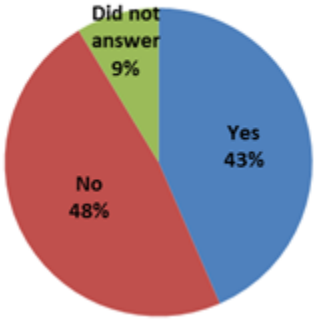
Highlights:

Environmental management is widely seen by community members as a priority – 100% of the survey responders said it is a priority. Most (97.7%) responders said all members and residents are responsible for environmental management on Leq'á:mel lands.

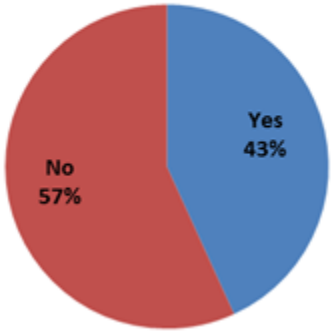


Almost half of responders indicated that they are not aware of environmental policies and laws that apply to Leq'á:mel lands, and just over half indicated they are not aware of Leq'á:mel's Disaster Response Plan. At the same time, most responders indicated that they would be interested in learning more about environmental management on Leq'á:mel lands. This suggests there is an opportunity for communication and education in the community related to environmental management procedures, laws, and policies.

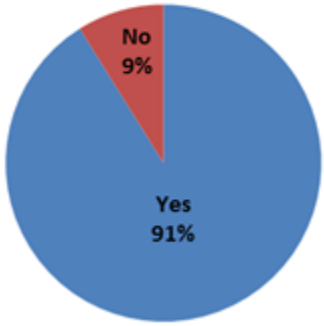
Q: Aware of environmental policies and laws?



Q: Aware there is a Leq'á:mel Disaster Response Plan?

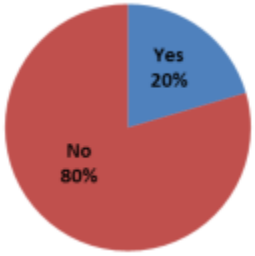


Q: Interested in learning about environmental management?



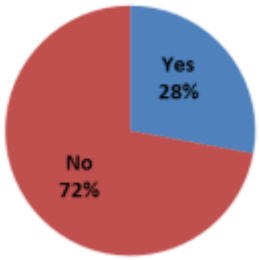
In terms of waste management, most responders do not think that residents of Leq'á:mel lands are properly disposing of household hazardous waste. This suggests there is an opportunity for knowledge sharing and procedural or policy development related to hazardous waste disposal on Leq'á:mel lands – this will also minimize the potential for additional contamination related to improper disposal of hazardous wastes.

Q: Are residents properly disposing of hazardous waste?



Overall, most responders are not satisfied with current environmental protection and management on Leq'á:mel lands. However, it must be noted that many members who attended the open house were very pleased to learn of the environmental initiatives that Leq'á:mel has more recently been part of (*e.g.,* Quaamich Slough restoration, education, capacity building).

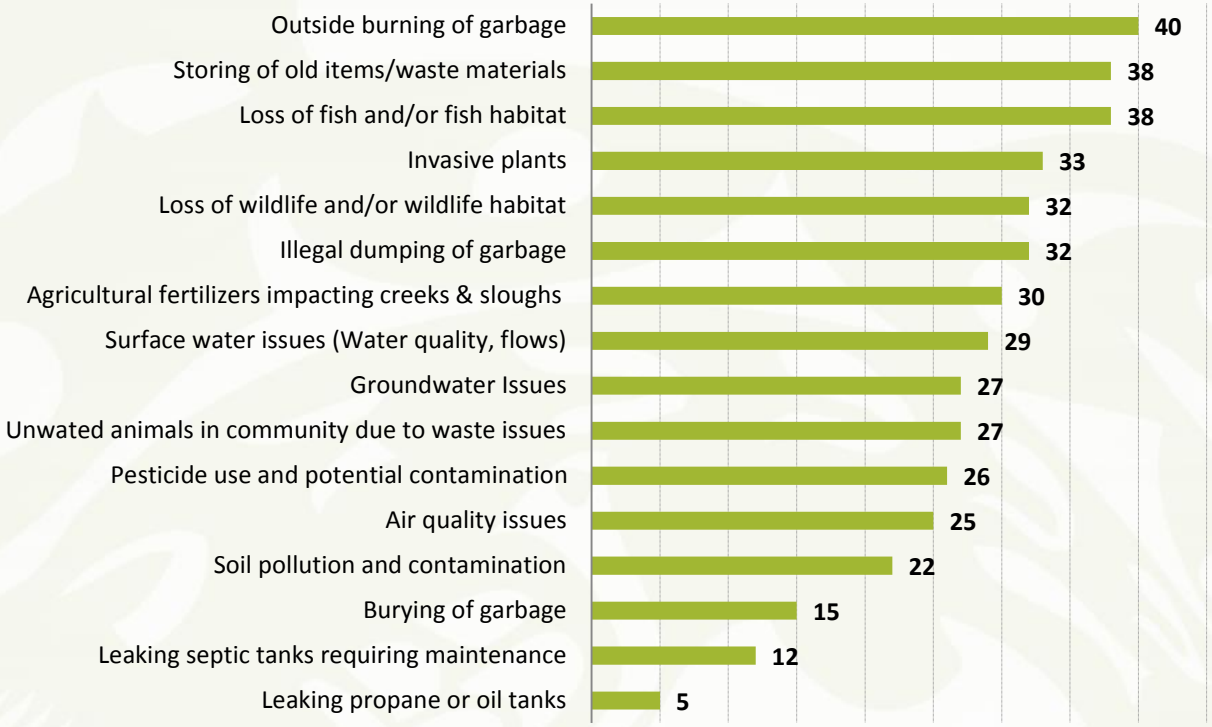
Q: Satisfied with environmental protection & management on Leq'á:mel lands?



"I appreciate the work of the Lands Department in achieving many of the environmental protection goals they have promoted. Moving forward, I believe the Chief and Council should promote policy development, implementation, monitoring and enforcement."

"Leq'á:mel needs to take a firm stance at protecting resources and access for our members."

Members were also asked what environmental issues that have seen or are aware of on Leq'á:mel lands – their responses are shown below.



3.3.5 Community Open Houses

Two community open houses were held at Leq'á:mel during the EMP development process. The first open house to was open to Leq'á:mel members and held to:

- Provide members with information about the EMP process;
- Document member perspectives and input on environmental issues and priorities; and
- Facilitate greater environmental awareness among members.

The second open house was open to members and non-members and held to:

- Spread community awareness of responsibilities under Land Code;
- Document community input on environmental policies and laws for Leq'á:mel lands;
- Document community input on goals and objectives related to the Top 10 Environmental Priorities; and
- Provide education on areas of interest, including environmental assessment, hazardous waste, and invasive plant species.

Table 5 outlines some of the important environmental features and issues related to each parcel of Leq'á:mel lands as identified through a mapping activity conducted at the first open house.

Table 5. Environmental Features and Issues on Leq'á:mel Lands Identified During the Open House

Land Parcel	Important Environmental Features	Environmental Issues
Holachten	• Nicomen Slough • Natural areas	• Junk storage on properties • Poor wastewater drainage
Skweahm	• Human remains (800+ years old) of cultural significance • Nicomen Slough	• Poor water quality in wells • Junkyard on leased property • Stockpiling of old vehicles and junk
Lakahahmen	• Sacred grounds on NW corner • Deroche Creek and Nicomen Slough • Freshwater clams in Nicomen Slough • Groundwater drinking supply	• Garbage dump along Taylor Rd. • Storage site for old wrecked cars • Sediment buildup of Deroche Creek • Buildup of algae and vegetation in Nicomen Slough
Zaitscullachan	• Zaitscullachan Slough	• Fertilizer / pesticide use • Members not able to use trail along slough (according to DFO)
Papekwatchin	• Along shore of the Fraser River	• N/A
Lackaway	• Riparian area and wetland potential	• Encroachment by adjacent industrial activity over last 20 years
Sumas Cemetery	• Sacred site	• No access to site due to landslide
Aylechootlook	• Historical apple orchard	• Garbage dumping • Potential for pipeline spill
Yaalstrick	• Historical fishing site	• Continued erosion of parcel
Lakway Cemetery	• N/A	• N/A

Throughout the EMP development process, Leq'á:mel leadership identified a number of potential policies, laws and regulations to help address environmental management responsibilities on Leq'á:mel lands. During the second open house, community members were given the opportunity to discuss and rank the potential laws suggested by leadership. The purpose of this activity was to document community perspectives on the proposed laws to help inform the development of strategies to achieve the goals associated with the environmental priorities. Recommendations throughout the EMP series in **Part 2 of the EMP** have been developed with community perspectives in mind, as well as known environmental priorities, emerging issues, and potential liabilities. Results of the ranking activity are as follows:

1) Community Quality Law
2) Environmental Assessment Law
3) Subdivision & Servicing Law
4) Business Permit Law
5) Soil Deposit & Transfer Law
6) Enforcement Law

4. MANAGEMENT PRIORITIES & EXISTING CONDITIONS

The following 10 environmental management priorities were identified for Leq'á:mel lands based on the background literature review, site visits, and community consultation and engagement, as described in **Section 3.0**:

1. Groundwater
2. Fisheries resources
3. Wildlife, vegetation, and species at risk
4. Surface water
5. Solid waste
6. Cultural resources
7. Soils and fill
8. Natural resource development
9. Land development
10. Hazardous waste and fuels

These environmental management priorities form the basis of the accompanying Environmental Management Plan Series (Part 2) and Environmental Operating Procedures (Part 3) and served as a guide for their development. The following sections provide an overview of each environmental management priority and a high-level description of existing conditions and issues and community input.

4.1 Groundwater

Groundwater is water occurring beneath the ground surface amongst spaces between rocks and soil. It exists almost everywhere underground and is not confined to channels and depressions like rivers and lakes; however, groundwater and surface water are linked in the hydrologic cycle and groundwater circulates back to the surface.

As noted in **Section 2.3.3**, Leq'á:mel lands are generally located on shallow aquifers which are used as drinking water sources by community members. These shallow aquifers and wells are highly vulnerable to contamination from surface sources, including waste dump sites, septic fields, and industrial and agricultural land use. According to the Official Community Plan for the Deroche Area, septic fields and agricultural activities pose the greatest risks to groundwater in the area.

Existing Conditions

- The proximity of residential drinking water wells to potential sources of contaminants (waste dump sites, septic fields, historic industrial operations, agricultural land use) were flagged as areas of potential environmental concern on Holachten, Skweahm and Lakahahmen during the Phase I ESA.
- Individual wells on Leq'á:mel lands have experienced high iron levels and odours (TRI, 2005). As reported by members, some residents use bottled water due to poor water quality in some of the individual wells.
- Poor drainage of septic fields has been experienced in the past, and septic overflows have the potential to contaminate drinking water wells on Leq'á:mel lands (TRI, 2005). A community septic system was installed to address these issues on Holachten. However, contaminants may be generated within septic fields over time and be transported to the aquifer that supplies drinking water wells.
- Groundwater contamination related to metals and other pollutants was identified at four areas of environmental concern investigated during the Phase I, II and III ESAs.
    - One of these sites (AEC 12) has since been remediated.
    - One of these sites (AEC 15) is off-site and adjacent to Skweahm in Quaamich Slough and was classified as Not a Priority for Action, although it was recommended that Leq'á:mel negotiate with the Province to address contamination issues.
    - The other two sites (AEC 11, AEC 16) have not yet been addressed due to lack of land access by CP Holders. These two sites were classified as Moderate Priority for Action.
- Increased sedimentation in creeks and sloughs impacts groundwater through seepage.

Community Input & Additional Considerations

- Leq'á:mel members have experienced issues with drinking water quality and would like to see groundwater protection and management measures to address existing issues and prevent future ones.
    - 60% of survey respondents said there are and/or have been groundwater issues on Leq'á:mel lands.
    - 86.7% of survey respondents said that groundwater protection is a management priority.
- The Phase I ESA recommended:
    - Leq'á:mel work with the First Nations Health Authority to incorporate additional parameters into the drinking water monitoring regime based on the potential contaminants on Leq'á:mel lands;
    - A hydrogeology study of Holachten, Skweahm, and Lakahahmen be undertaken to better understand groundwater movement between septic fields, waste dump sites, transportation routes and agricultural areas and drinking water sources on Leq'á:mel lands; and
    - Leq'á:mel develop a water management strategy and adopt drinking water quality guidelines similar to those in the provincial *Drinking Water Protection Act*.
- Two areas of environmental concern (AEC 11, AEC 16) based on groundwater contamination may require mitigation or remediation efforts.
- Leq'á:mel may consider working with the Province to address groundwater contamination in the Quaamich Slough.

4.2 Fisheries Resources

Fisheries refer to the fish and those who harvest them in a region. They are generally defined by: the people involved; the species or type of fish; the area or water body; the method of fishing; and the purpose of activities.

Fishing in the Fraser River and its tributaries has been, and remains, a traditional activity important to Leq'á:mel people for food, cultural and ceremonial purposes. Leq'á:mel lands have long been known as a gathering place for fishing. Historically, people would travel down the Fraser River to visit the fishing grounds in the area given the abundance of salmon, sturgeon and eulachon. The size of the salmon runs in the area were said to be like nothing else in the world. The size and number of sturgeon in the area would also attract others to the area, and they would pay Leq'á:mel ancestors to harvest in the area.

In more recent history, fisheries in the region have been impacted by habitat loss due to dyking, vegetation removal and agricultural land use, and declines in water quality related to pollution, heavy siltation, agricultural run-off, aquatic plant growth, and low flows (DFO, 1999).

Existing Conditions

- Cutting off Nicomen Slough from the Fraser River in 1948 has greatly reduced access to good rearing habitat for all Fraser River salmon stocks (DFO, 1999).
- The majority of Quaamich Slough is not currently fish accessible from the Fraser River or Nicomen Slough due to the Fraser River dyke and sediment infilling of the culvert connecting the Quaamich and Nicomen Sloughs under Highway 7. In addition, dissolved oxygen levels due to low flows in Quaamich Slough have been found to be below guidelines for aquatic life during summer months (Pearson Ecological, 2016).
- Nutrient enrichment from agricultural run-off and loss of flushing flows has resulted in significant invasive aquatic plant growth, which degrades salmon rearing habitat (DFO, 1999).
- Gravels along the bottom of the Nicomen Slough have become covered in sediment due to heavy siltation and a lack of flushing flows. This has led to the reduction of salmon spawning habitat (DFO, 1997).
- Gravel deposition in Deroche Creek has led to a raised stream bed where water flows through the gravel during dry periods, leaving dry areas that prevent fish passage (Pearson Ecological, 2016). Leq'á:mel is aiming to undertake dredging in Deroche Creek to lower the stream bed and restore flows. However, gravel removal in the creek disrupts salmon spawning habitat (DFO, 1999).
- Leq'á:mel is currently working with the Fraser Valley Watershed Coalition, local biologists, and Fisheries & Oceans Canada on various initiatives to restore salmon habitat and populations in sections of the Nicomen Slough and surrounding watershed. To date, a small-scale restoration and enhancement project

has been undertaken on Quaamich Slough. A future large-scale restoration and enhancement project is planned for the Nicomen Slough.

Community Input & Additional Considerations

- Leq'á:mel members have observed drastic declines in many fisheries in the area and would like to see fish habitat and fisheries restored given the cultural, ecological and food values of these resources.
    - 84.4% of survey respondents said there have been declines in fisheries and loss of habitat on Leq'á:mel lands.
    - 86.7% of survey respondents said that fisheries protection is an environmental management priority.
- As reported by Leq'á:mel members, agricultural and logging activities are degrading stream habitat in the Nicomen Slough watershed.
- Leq'á:mel members expressed concern about the flood risk posed by the restricted capacity of watercourses with raised stream beds.
- Wetlands could be constructed to clean water from agricultural, industrial and urban developments, and reduce impacts of water quality on fish.
- Leq'á:mel may want to explore potential funding opportunities and external partners for programs related to fisheries habitat restoration.
- According to the Lower Fraser Valley Stream Strategic Review (1999), a gravel management plan is required for Deroche Creek to manage gravel deposition in the long-term.

4.3 Wildlife, Vegetation, and Species at Risk

Species at risk refer to plants and animals that are in danger of disappearing from the wild, and that are protected by federal or provincial legislation.

Biodiversity refers to the variety of plants and animals species within a specific area and it is an indicator of ecosystem health.

The Fraser Valley is home to many fragile ecosystems and has a high concentration of species at risk (SAR). As noted throughout **Section 2.0**, Leq'á:mel lands are host to wetland areas and a range of wildlife, vegetation and SAR; however, changes in land use and habitat loss threaten the natural environment and biodiversity in the region. According to the Fraser Valley Regional Biodiversity Strategy (2010), some of the biggest threats to biodiversity in the region include urban and rural land development, resource extraction, habitat fragmentation, invasive species, and water pollution. In addition, around 50-70% of the original wetlands in the Lower Fraser River region have been lost due to other land uses (David Suzuki Foundation, 2010).

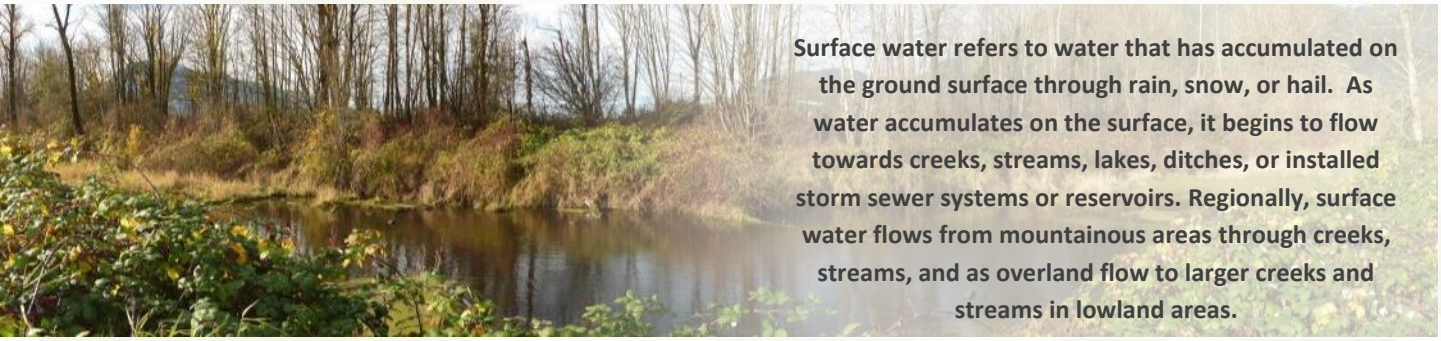
Existing Conditions

- Wetland areas, riparian areas along surface water features and forested areas on Leq'á:mel lands provide important habitats and connectivity/travel corridors to surrounding habitats.
- Terrestrial and aquatic SAR assessments conducted in 2015 and 2016 identified potential habitat for 8 terrestrial and 8 aquatic SAR, some of which are highly endangered, on Leq'á:mel lands.
- Many of the wildlife species currently inhabiting Nicomen Slough are listed as endangered, threatened, or of species concern (Coastal Painted Turtle Project, 2015).
- Dumping (mostly tires) along the northern portion of Quaamich Slough, adjacent to Skweahm, may be negatively impacting turtle and aquatic habitat (Pearson Ecological, 2016).
- Members have reported the presence of various invasive plants species on Leq'á:mel lands, including morning Himalayan blackberry, Japanese knotweed, Reed canary grass, English ivy, and Morning glory.
    - A large amount of Himalayan blackberry is present, especially along water features.
    - Leq'á:mel Public Works staff have undertaken manual and mechanical removal of these species but they continue to return.
    - Nutrient enrichment from agricultural run-off and loss of flushing flows has resulted in significant invasive aquatic plant growth (DFO, 1999).

Community Input & Additional Considerations

- Leq'á:mel lands have important wildlife, vegetation and SAR resources that members would like to see restored and protected, and invasive plants that members would like to see managed.
    - 73.3% of survey respondents said there are issues with invasive plants on Leq'á:mel lands.
    - 71.1 % of survey respondents said there has been loss of wildlife and wildlife habitat on Leq'á:mel lands.
    - 82.2% of survey respondents said that wildlife, vegetation and SAR are a management priority.
- One of the biodiversity goals of the Fraser Valley Regional Biodiversity Strategy (2010) is to increase partnerships and collaboration between Fraser Valley stewardships groups and all levels of government.
- The potential for SAR should be assessed prior to any development on Leq'á:mel lands.

4.4 Surface Water



Surface water refers to water that has accumulated on the ground surface through rain, snow, or hail. As water accumulates on the surface, it begins to flow towards creeks, streams, lakes, ditches, or installed storm sewer systems or reservoirs. Regionally, surface water flows from mountainous areas through creeks, streams, and as overland flow to larger creeks and streams in lowland areas.

As noted in **Section 2.4.2**, Leq'á:mel lands have many important surface water features, and these water features support fisheries, wildlife, vegetation and SAR in the region. Historically, this portion of the river experienced seasonal flooding and wetlands in the area would be rejuvenated by the spreading of fertile silt. However, dyking of the river in the first half of the 1900s has led to significant changes in surface water flows and connectivity in the region. Today, the Lower Fraser River watershed is the most densely populated watershed in the entire Fraser River system (Fraser Basin Council, 2017). Surface water quality and quantity in the Lower Fraser River watershed has been largely impacted by dyking and channelization, and increased urban, agricultural and resource development in the region, including agricultural activities on Leq'á:mel lands.

Existing Conditions

- According to the Lower Fraser Valley Stream Strategic Review (1999):
  - The Nicomen Slough watershed is listed as Endangered due to impacts related to dyking/channelization, and impacts related to development (forestry, urban) and agricultural activities.
  - The Sumas River watershed is listed as Endangered due to extensive dyking/channelization, extremely poor water quality related to agricultural run-off and wastes, and reduced riparian vegetation.
  - The Wilson Slough watershed is listed as Threatened due to degradation related to extensive riparian vegetation removal associated with agricultural and residential development.
- Extensive clear-cut logging within the Norrish and Deroche Creek watersheds has led to watershed instability, erosion, increased frequency of peak flows, and increased deposits causing backwatering of approximately 80% of the slough (FVWC, 2015). Some members reported that Deroche Creek used to be deep enough to swim in in the past. In addition, Deroche Creek is currently a large flood hazard to residences on Lakahahmen.
- Approximately 50% of the Nicomen Slough watershed is used for agriculture, and dairy farming and cattle access have cause water quality problems (DFO, 1997). Some members reported that they used to swim in the Nicomen Slough in the past when it was much cleaner and less stagnant.
- The stream bed of Siddle Creek is unstable and subject to scouring and sedimentation; however, the water quality of the creek has not been assessed (DFO, 1997).

- Stormwater on Leq'á:mel lands is generally managed via roadside drainage ditched or swales, except for portions of the Nicomen Home Park and residences at MoQ'wem Place on Holachten, which have drainage piping (Kerr Wood Leidal Associated, 1999).
- Water loggers were installed near Skumalasph 16 on the east side of Zaitscullachan Slough in November 2016. The loggers will provide useful data on water levels.

Community Input & Additional Considerations

- Leq'á:mel members have observed declines in the water quality surface waters on Leq'á:mel lands and would like to see these features restored given their important ecological and cultural values.
    - 64.4% of survey respondents said there are and/or have been surface water issues related to water quality and flow on Leq'á:mel lands.
    - 66.7% of survey respondents said agricultural run-off in the area has impacted aquatic plant growth (increased) and surface water quality (reduced).
    - 82.2% of survey respondents said that surface water protection is an environmental management priority.
- According to the Lower Fraser Valley Stream Strategic Review (1999):
    - Stormwater management, erosion control, and riparian protection and restoration plans are required for the Nicomen Slough watershed.
    - Farm stream stewardship initiatives focused on improving water quality, riparian protection and managing access are required for the Sumas River watershed.
    - Riparian areas in the Wilson Slough watershed should be replanted.
- Strategies for surface water and drinking water protection and management will be an important part of the EMP.

4.5 Solid Waste

Solid waste refers to non-hazardous trash or garbage that is produced by residential, commercial, institutional, demolition, land clearing, or construction sources. Effective management of solid waste is an important component of community environmental management.

Solid waste management is a challenge for most communities, including those located in the FVRD. According to the FVRD Solid Waste Management Plan Update (2015), waste generation rates per person continue to climb in the region. Challenges related to effective diversion of recyclable and organics materials contribute to the problem. In addition, illegal dumping is a serious a growing problem in the FVRD and the communities within it – illegal dumping can lead to soil, groundwater, and/or surface water contamination.

Existing Conditions

- As noted in **Section 2.3.2**, Leq'á:mel operates a Transfer Station on Skweahm that services member and non-member residents and currently accepts household waste, recyclables, miscellaneous and large items, metals, and yard waste (as well as several household hazardous waste items – see **Section 4.10**).
- Although several waste streams are collected at the Transfer Station, effective diversion is a challenge, and the fee for recyclables required by non-members has been identified as an obstacle or barrier to greater diversion.
- According to all information sources and based on the site visit (refer to **Section 3.0**), key solid waste management issues that continue to be experienced on Leq'á:mel lands include:
    - Illegal dumping and burying of waste materials.
    - Open burning of waste materials.
    - Stockpiling of waste materials, especially old vehicles.
    - Rat issues related to stockpiling.
- Seven areas of potential environmental concern related to illegal dumping and debris storage were identified on Holachten, Skweahm, Lakahahmen and Aylechootlook during the Phase I ESA on Leq'á:mel lands (TRI, 2005).
    - Three of these sites (APEC 12, APEC 15, APEC 16) were confirmed as areas of environmental concern during the Phase II ESA due to associated soil and/or groundwater contamination (TRI, 2011).
        - One of these sites (AEC 12) has since been remediated.
        - One of these sites (AEC 15) is off-site and adjacent to Skweahm in Quaamich Slough and was classified as Not a Priority for Action, although it was recommended that Leq'á:mel negotiate with the Province to address contamination issues.
        - One of these sites (AEC 16), which was classified as Moderate Priority in the Phase III ESA, was not addressed due to CP Holder land access issues (TRI, 2011).
- The Phase III ESA (TRI, 2011) identified potential issues with the Transfer Station:
    - The floor of the station is not lined.
    - No secondary containment around the above-ground waste oil storage tank.
- Since the Phase III ESA (TRI, 2011), infrastructure around the oil storage tank has been updated to include secondary containment.

Community Input & Additional Considerations

- Leq'á:mel members have experienced various solid waste issues on Leq'á:mel lands and would like to see management, community outreach, and enforcement measures to address these issues and prevent future ones.
    - 88.9 % of survey respondents said there are issues with open burning of waste on Leq'á:mel lands.
    - 84.4% of survey respondents said there are issues with storing of unused and waste items on Leq'á:mel lands.

  - 71.1% of survey respondents said there are issues with illegal dumping of waste on Leq'á:mel lands.
  - 60% of survey respondents said there are issues with unwanted animals on Leq'á:mel lands due to waste issues.
  - 33.3% of survey respondents said there are issues with burying waste on Leq'á:mel lands.
  - 77.8% of survey respondents said that solid waste is an environmental management priority.
- The Phase I ESA (TRI, 2005) recommended that signage be used on Leq'á:mel lands to discourage illegal dumping.
- An area of environmental concern (AEC 16) related to illegal dumping and debris storage may require mitigation or remediation efforts.
- The Phase III ESA (TRI, 2011) recommended that the Transfer Station should be upgraded to conform to the guidelines set by the Ministry of Environment in *Guidelines for Establishing Transfer Stations for Municipal Solid Waste*.
  - Specifically, the floor should have drains and sumps to collect liquids to prevent soil contamination.
- The FVRD Solid Waste Management Plan Update (2015) acknowledges a need to partner with First Nations to improve solid waste management in the region and includes a commitment to work with First Nations on common solid waste management objectives.

4.6 Cultural Resources

Cultural resources refer to the learned collective human behaviour and activities that connect and may even define a community. They include ancestral remains, traditional infrastructure, historical and archaeological sites, language, values and beliefs, oral histories, and traditional knowledge.

Stó:lō communities, including Leq'á:mel, boast rich, complex, and dynamic cultures with distinct values, beliefs, traditions, and heritage. The Fraser Valley region has long been home to Leq'á:mel and other Stó:lō First Nation communities. Historically, Leq'á:mel lands were frequented as a gathering place and hosted many travelers as they navigated the Fraser River. As a result, there is generally high potential for cultural resources, including significant archaeological sites, to be present on and adjacent to Leq'á:mel lands. Land development activities may impact these resources, especially during the construction phase, if proper precautions are not taken.

Existing Conditions

- Artefacts dating back 9,000 years have been found within Leq'á:mel territory (Leq'á:mel First Nation, 2014).

- Known archaeological and cultural heritage areas include (**Figure 6**):
    - Lakahahmen which was traditionally a pit house community and a large settlement.
    - A historic cemetery site is located on the northeast corner of Sumas Mountain within Sumas Cemetery.
    - Documented sites adjacent to the Fraser River and along the Nicomen Slough.
    - An area on Skweahm where human remains dating back over 800 years were recently uncovered during site preparation for a gas station development – the location of the development was shifted to avoid the site.
    - Three provincially listed heritage sites (DhRm-2, DhRm-3, DhRm-4) are located on or adjacent to Leq'á:mel lands. DhRm-2 is located at the north east corner of Skweahm, DhRm-4 is located on the south side of Lakahahmen, and DhRm-3 is located east of Skweahm, along the south side of Nicomen Slough.

Community Input & Additional Considerations

- Given the potential for archaeological sites and the presence of cultural resources on Leq'á:mel lands, members would like to see protection measures for these important resources.
    - 75.6% of survey respondents said that cultural resources protection is a management priority.
- The Stó:lō Heritage Policy applies to potential archaeological sites within the Leq'á:mel traditional territory.
    - Leq'á:mel may want to develop a Cultural Heritage Policy to guide the management of potential archaeological sites on Leq'á:mel lands.
- Members indicated that their culture is very important to them – ensuring cultural awareness among youth and maintaining Leq'á:mel culture for future generations is important.
- Fisheries and surface water resources have important cultural value to Leq'á:mel members – preservation of these resources on Leq'á:mel lands is intertwined with the preservation of community culture.

Figure 6. Cultural Resources

4.7 Soils and Fill

Fill refers to soil that has been removed from one area and deposited in another area, typically as a means to fill depressions and holes to make an area suitable for development.

Future land development on and/or adjacent to Leq'á:mel lands may require soil relocation and/or the use of fill materials. It is important to properly manage soil and fill brought onto, taken from, or relocated on Leq'á:mel lands to ensure materials are not contaminated. Soil can become contaminated in many ways but the most common include: fuel leaks/spills, chemicals related to industrial and agricultural activities, unregulated use of fills that are contaminated, and the deposit of contaminated soil from other sites or areas. In addition to the risks to human and environmental health, the costs of remediation or clean-up of contaminated soils and fills (and water if impacted) can run very high.

Existing Conditions

- There are existing fill materials on Leq'á:mel lands:
  - According to the Phase I ESA (TRI, 2005), it is assumed that materials dredged from the Fraser River were used to build the dykes on Papekwatchin and Aylechootlook given their date of construction.
  - Fill material comprised of material dredged from Quaamich Slough was deposited on the Transfer Station site on Skweahm (TRI, 2005).
  - Certified clean fill material was reportedly used during remediation of the historic gravel extraction and log sort in front of the Band office.
- Soil contamination related to metals and other pollutants was identified at 7 areas of environmental concern that were investigated during the Phase I, II and III ESAs.
  - Three of these sites have since been remediated.
  - One of these sites was classified as Not a Priority for Action.
  - Two of these sites were classified as Low Priority for Action and have not been addressed.
  - The final site was classified as Moderate Priority for Action but has not been addressed due to lack of land access by CP Holder.

Community Input & Additional Considerations

- Given previous and existing soil contamination issues on Leq'á:mel lands, members would like to see soil and fill management measures to address existing issues and prevent future ones.
    - 57.8% of survey respondents said they are concerned about agricultural pesticide use on Leq'á:mel lands and potential impacts on soil.
    - 48.9 % of survey respondents said there are or have been issues with contaminated soils on Leq'á:mel lands.
    - 68.9% of survey respondents said that contaminated soil and fill (dealing with past issues, preventing future ones) is an environmental management priority.
- Up to 4 areas of environmental concern based on soil contamination may require remediation.

4.8 Natural Resource Development

Natural resources are materials or substances such as minerals, forests, water, and fertile lands that occur in nature and can be used for economic gain.

The Lower Fraser Valley is rich in natural resources and has some of Canada's best agricultural lands, wetlands and forests (David Suzuki Foundation, 2010). Regional economic growth has been largely related to resource extraction, and much of the historical forests and wetlands have been replaced by agricultural use, logging, and gravel mining. These activities have had various impacts on the natural environment, as described in the previous sections, which in turn impact the Leq'á:mel community.

Existing Conditions

- Small- to medium-scale agricultural activities occur on:
    - Zaitscullachan (entire parcel)
    - Lakahahmen (central and southern portion)
    - Holachten (easternmost portion, east of the rail line)
    - Skweahm (several portions)
    - Papekwatchin (northern portion)
- Leq'á:mel's Zoning Law (2016) permits gravel operations, fisheries-base facilities and resource-based facilities and manufacturing in Industrial Zone areas; however, only two small portions of Skweam are currently zoned as such.

- Gravel mining and logging adjacent to Leq'á:mel lands have led to degradation of surface waters and fisheries resources.
    - Some members reported air quality issues associated with gravel operations in the region.
- Referrals related to resource development in Leq'á:mel traditional territory go through the People of the River Office Referrals Office (Stó:lō Research and Resource Management Centre) and sent on to Leq'á:mel Council.
    - Leq'á:mel has been collecting Traditional Ecological Knowledge and Traditional Land Use information to be used to better inform the current referrals process in terms of areas of particular importance to members.

Community Input & Additional Considerations

- 66.7% of survey respondents said that natural resource development is an environmental management priority.
- Although Leq'á:mel cannot directly manage resource development and extraction occurring outside of Leq'á:mel lands, there are opportunities for Leq'á:mel to ensure environmental considerations are incorporated into decision making related to development activities within Leq'á:mel traditional territory.
    - The Leq'á:mel Lands Department should be engaged during the referrals process to support transparent review and approval of resource development projects in Leq'á:mel territory that considers all potential environmental and community impacts.
    - A clear process for internal review of referrals that engages the Lands Department will support Leq'á:mel in meeting its environmental goals.

4.9 Land Development

Land development refers to the alteration of land from a natural or semi-natural state, or changing its purpose, through activities such as grading, excavation, soil removal, construction, or clearing of habitats.

As noted in **Section 2.2**, current Leq'á:mel land uses primarily consist of residential and agricultural uses with some industrial and commercial use. According to Leq'á:mel's Zoning Law (2016), there are opportunities for further commercial and residential development on Leq'á:mel lands. Ensuring that all future land development activities on Leq'á:mel lands are undertaken in a manner that avoids or minimizes environmental impacts is necessary to achieve environmental protection as required by Leq'á:mel's Land Code and to comply with all relevant Federal legislation.

Existing Conditions

- Soil and/or groundwater contamination related to historic and suspected light industrial activity was identified at 3 areas of environmental concern that were investigated during the Phase I, II and III ESAs.
    - One of these sites was remediated.
    - One of these sites were classified as Medium Priority for Action and has not been addressed due to land access issues with the CP Holder.
    - One of these sites were classified as Low Priority for Action and has not been addressed.
- Leq'á:mel recently enacted a Zoning Law in April 2016 that sets out regulations for new development to manage land development in a way that protects community interests.
    - A Development Procedures Manual was also created to provide guidance on how to implement the Zoning Law – the manual includes several environmental considerations including setbacks from water features, archaeological assessment requirements, and environmental assessment report requirements.
- According to Leq'á:mel's Economic Development Plan (2012), Leq'á:mel sites with the most promising immediate development opportunities are Holachten, Skweahm and Lackaway.
    - A health centre was just built adjacent to the existing Band office on Holachten.
    - Leq'á:mel is currently building a gas station and a commercial retail building with a truck parking area on Skweahm.
    - There is potential for further development of commercial development on Skweahm based on the Zoning Law.

Community Input & Additional Considerations

- 64.4% of survey respondents said that land development (processes and procedures to protect the environment during land development) is an environmental management priority.
- All leases, land development activities and land uses should be registered with the Lands Department.
- The nature of activities carried out on all Leq'á:mel lands, whether Band owned or CP held, should be reviewed and assessed in terms of potential environmental impacts to prevent further soil and/or groundwater contamination.
- Consider developing laws that will hold polluters on Leq'á:mel lands accountable for their impacts.
- Consider laws that will hold developers whose activities (*e.g.*, debris flows) have the potential to adversely impact Leq'á:mel lands accountable for their impacts.

4.10 Hazardous Waste & Fuels

Hazardous waste refers to solid, liquid and gas wastes that can cause harm to people, other living things, property, or the general health of the environment, including paints, chemicals, batteries, and light bulbs. They are toxic, flammable, reactive with other chemicals, and/or corrosive (damaging to tissues and materials on contact).

Hazardous wastes require special disposal to eliminate or reduce any associated hazards. They come from a number of sources including households, industrial operations, manufacturing and processing plants and hospitals, or they can be materials that are no longer used such as waste lubricants, oils and pesticides. Proper handling, storage and disposal procedures for hazardous wastes and fuels, including spill response and mitigation measures, are required to prevent the release of contaminants into the environment, and the associated impacts on human and environmental health.

Existing Conditions

- Soil contamination related to vehicle maintenance waste and debris was identified at a site classified as an area of environmental concern during the Phase I, II and III ESAs.
    - The site was classified as Low Priority for Action.
    - Existing contamination at the site has not yet been addressed.
- Some household hazardous waste items (propane tanks, waste oil, empty paint cans) are currently accepted at the Leq'á:mel Transfer Station. All other hazardous waste items must be disposed of other depots.
- Various potentially hazardous waste items (old vehicles, televisions, metals, etc.) are currently stored on some properties on Leq'á:mel lands without proper cover, lining or containment.

Community Input & Additional Considerations

- Given the risks posed by hazardous wastes, members would like to see hazardous waste management measures to minimize potential impacts on the environment on Leq'á:mel lands.
    - 77.8% of survey respondents said they do not think Leq'á:mel residents are properly disposing of hazardous wastes.
    - 62.2% of survey respondents said that proper handling, storage and disposal of hazardous wastes is an environmental management priority.
- Members voiced concerns about the potential for hazardous wastes to be stored on some properties on Leq'á:mel lands, especially old vehicles.
- Some members indicated that people may not be aware of what is considered hazardous waste and education and outreach would be beneficial.

5. LEGISLATIVE ENVIRONMENT

The environmental management priorities presented in **Section 4.0** form the basis of the EMP and serve as a guide for its development. In order to develop the individual EMP series and Environmental Operating Procedures related to these management priorities, an understanding of the legislative environment associated with them is required.

The passing of Land Code in 2009 allows for the development of environmental laws relating to Leq'á:mel lands. However, federal laws applicable on First Nations lands and consistent with the *First Nations Land Management Act* (FNLMA) continue to apply. In addition, as stated in the FNLMA, environmental laws and processes implemented on Leq'á:mel lands must be harmonized with federal ones to promote effectiveness and consistency and to avoid duplication and/or uncertainty. Environmental protection standards created by Leq'á:mel and penalties for non-compliance must also be at least equal to those established by the province.

Tables 6 and **7** summarize federal and provincial legislation, regulations and standards relevant to the environmental priorities identified by Leq'á:mel. The legislation, regulations and standards outlined in **Tables 6** and **7** must be considered in the environmental management governance of Leq'á:mel lands.

Please note that the legislative information contained in the following tables are intended as an introductory summary and are not intended to provide legal or professional advice. Readers should seek specific legal advice on particular aspects with which they are concerned.

Table 6. Relevant Federal Legislation and Regulations

LEGISLATION	SUMMARY AND ASSOCIATED REGULATIONS	APPLICABILITY
Canadian Environmental Assessment Act (CEAA, 2012)	▪ Outlines the responsibilities and procedures for the environmental assessment (EA) of projects involving the federal government ▪ Aimed at identifying and avoiding or minimizing potential significant environmental effects associated with projects prior to their approval ▪ Impacts on physical and cultural heritage must also be considered ▪ Projects subject to CEAA are listed in the *Regulations Designating Physical Activities* ▪ A project description must be submitted for projects subject to CEAA, as described in the *Prescribed Information for the Description of a Designated Project Regulations* ▪ Time limits are provided within which EAs are to be concluded and decided upon ▪ The maximum penalty for non-compliance with required mitigation conditions is $400,000/day	▪ Cultural resources protection ▪ Land development ▪ Wildlife, vegetation, & SAR protection ▪ Natural resource management
Canadian Environmental Protection Act (1999)	▪ The principal federal piece of legislation governing environmental activities ▪ Aimed at preventing pollution and protecting the environment and human health ▪ Requires federal maintenance and publishing of a National Pollutant Release Inventory ▪ Provides a wide range of regulations, guidelines and codes of practice related to environmental protection, pollution control and prevention, and waste management ▪ *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* establish technical standards for the design and installation of storage tank systems and include requirements for operation, maintenance, removal, reporting, and record-keeping ▪ Owners or managers of specified toxic or hazardous materials are required to prepare and implement environmental emergency plans under the *Environmental Emergency Regulations* ▪ Maximum penalties of $1-million and/or three years' imprisonment for individuals and $6-million for large corporations	▪ Surface water protection ▪ Groundwater protection ▪ Hazardous waste and fuel management ▪ Solid waste management ▪ Soil and fill management ▪ Land development ▪ Natural resource management
Cultural Property Export and Import Act (1985)	▪ Aimed at protecting Canada's national heritage through the establishment of controls on the export of objects of historical, scientific, and cultural significance ▪ Items under export control are listed on the *Canadian Cultural Property Export Control List* and permits are required for any items listed ▪ The maximum penalty for non-compliance is $25,000 and/or five years' imprisonment	▪ Cultural resources protection
First Nation Land Management Act (1999)	▪ Provides First Nations with the authority to make laws in relation to reserve lands, resources and the environment through the development and implementation of a Land Code, which replaces the sections of the Indian Act related to land management on reserves	▪ General governance
Fisheries Act (1985)	▪ Aimed at protecting Canada's fisheries, including fish and fish habitat ▪ The Act has been frequently used by Environment Canada to punish those responsible for water-polluting activities (Blakes, Cassels & Graydon, 2015) ▪ Applies to coastal and inland waters ▪ Prohibits the release of "deleterious substances" into fish-bearing waters ▪ It is an offence to carry out an activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery ▪ Serious harm to fish includes harm to fish and permanent alteration or destruction of fish habitat ▪ Imposes reporting requirements: any release of deleterious substances into fish-bearing waters or where damage to fish habitat may occur must be reported ▪ Authorizations for serious harm to fish may be permitted under the *Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations* ▪ Maximum penalties for non-compliance are $2-million and/or three years' imprisonment for individuals, $8-million for small corporations, and $12-million for large corporations	▪ Surface water protection ▪ Hazardous waste and fuel management ▪ Soil and fill management ▪ Fisheries resources protection ▪ Wildlife, vegetation, & SAR protection ▪ Land development ▪ Natural resource management

LEGISLATION	SUMMARY AND ASSOCIATED REGULATIONS	APPLICABILITY
Indian Act (1985)	▪ First passed in 1876; amended many times since ▪ Sets out the general structure of First Nation Governments and limits of power (*i.e.,* how reserves and bands can operate) ▪ The *Indian Waste Disposal Regulations* prohibit the operation of a garbage dump, using land for the disposal or storage of waste or burning waste on a reserve without a permit issued under the Regulations. (NOTE: it is anticipated that these regulations will be amended and will not apply to First Nations operating under Land Code in the future.)	▪ General governance
Migratory Birds Convention Act (1994)	▪ An international agreement between Canada and the U.S. for the protection of migratory birds ▪ Regulates harvesting/ hunting of birds ▪ Also contains environmental protection provisions ▪ Prohibits the deposit of oil, oil waste or other substances harmful to migratory birds in any waters or areas frequented by migratory birds ▪ Disturbance of migratory birds nests is also prohibited ▪ The maximum penalty for non-compliance is $1-million and/or three years' imprisonment	▪ Hazardous waste and fuel management ▪ Solid waste management ▪ Fisheries resources protection ▪ Wildlife, vegetation, & SAR protection ▪ Land development ▪ Natural resource management
Pest Control Products Act (2002)	▪ The *Pest Control Products Act Regulations* require pest control products to be registered with detail about the product and its use (*e.g.*, chemical makeup, effectiveness, impacts on environment) ▪ Health Canada's Pest Management Regulatory Agency is responsible for administering this legislation, registering pest control products and determining how they can be used, re-evaluating registered products and setting maximum residue limits	▪ Surface water protection ▪ Groundwater protection ▪ Fisheries resources protection ▪ Wildlife, vegetation, & SAR protection ▪ Natural resource development
Safe Drinking Water for First Nations Act (2013)	▪ Allows the federal government to work with First Nations to develop regulations for access to safe drinking water, effective treatment of wastewater, and the protection of drinking water sources of First Nations lands ▪ Associated regulations have yet to be implemented	▪ Surface water protection ▪ Groundwater protection
Species at Risk Act (SARA, 2002)	▪ Aimed at preventing wildlife species from disappearing ▪ Lists species at risk and categorizes them as threatened, endangered, extirpated, or of special concern ▪ Prohibits activities related to listed species, including killing or harming listed species and activities that result in the destruction of critical habitat ▪ Outlines measures to provide for the recovery of listed species ▪ Provides measures to manage species of special concern to prevent them from becoming endangered or threatened ▪ Requires that species at risk are considered in the EA process and any proposed mitigation strategies must be consistent with recovery strategies and action plans identified under SARA ▪ The maximum penalty for non-compliance is $2-million and/or five years' imprisonment	▪ Surface water protection ▪ Hazardous waste and fuel management ▪ Fisheries resources protection ▪ Wildlife, vegetation, & SAR protection ▪ Land development ▪ Natural resource management
Transportation of Dangerous Goods Act (TDGA, 1992)	▪ Aimed at promoting public safety and protecting the environment during the transportation of dangerous goods including hazardous wastes ▪ Dangerous goods are specified in the *Transportation of Dangerous Goods Regulations* and arranged into nine classes: explosives; compressed gases; flammable and combustible liquids and solids; oxidizing substances; toxic and infectious substances; radioactive materials; corrosives; and additional miscellaneous products ▪ Imposes a requirement for Emergency Response Assistance Plans before transported goods subject to the TDGA ▪ The maximum penalty for non-compliance is $100,000 and/or two years' imprisonment	▪ Hazardous waste and fuel management ▪ Soil and fill management

Table 7. Relevant Provincial Legislation and Regulations

LEGISLATION	SUMMARY AND ASSOCIATED REGULATIONS	APPLICABILITY
Drinking Water Protection Act (2001)	▪ Aimed at ensuring the provision of safe drinking water by drinking water operators and suppliers ▪ Applies to most water supply systems, including small water systems, and provides for the establishment of drinking water protection plans ▪ Prohibits anyone from introducing hazardous substances to a domestic drinking water system or a drinking water source ▪ The *Drinking Water Protection Regulation* prescribes water quality standards for potable water and requires water supply operators to be certified by the Environmental Operators Certification Program ▪ The Regulation also imposes requirements for operating permits, water treatment, monitoring, testing and reporting, and public notification in the case of water quality issues ▪ The maximum penalty for non-compliance is $200,000 and/or one years' imprisonment	▪ Surface water protection ▪ Groundwater protection ▪ Hazardous waste and fuel management
Environmental Assessment Act (2002)	▪ Establishes a comprehensive process for the identification of potential environmental impacts related to major projects in BC ▪ Requires an EA be conducted for reviewable projects listed in the *Reviewable Projects Regulation* ▪ The maximum penalty for non-compliance is $100,000 and/or up to six months' imprisonment for individuals and $100,000 for corporation for first offences (after which penalties increase)	▪ Cultural resources protection ▪ Land development ▪ Wildlife, vegetation, & SAR ▪ Natural resource management
Environmental Management Act (2003)	▪ The principal provincial piece of legislation governing environmental activities ▪ Prohibits the introduction of waste (including hazardous waste) into the environment in any way that causes pollution (*i.e.,* alters or impairs the health of the environment), except in accordance with a regulation, permit or code of practice ▪ The *Open Burning Smoke Control Regulation* sets rules about open (outdoor) burning and prohibits open burning of specific materials identified in the Regulation ▪ The *Waste Discharge Regulation* lists industries in which the introduction of waste into the environment is prohibited and prescribes activities which may operate under a code of practice or must have a permit ▪ The *Hazardous Waste Regulation* addresses the proper handling and disposal of hazardous wastes and any person generating hazardous waste must register the waste and apply for a provincial identification number ▪ The *Spill Reporting Regulation* lists substances that must be reported in the case of a spill or escape ▪ The *Contaminated Sites Regulation* establishes a detailed regime for the identification, determination, and remediation of contaminated sites, as well as the assessment and allocation of liability for remediation ▪ The *Agricultural Waste Control Regulation* describes environmentally sound practices for using, storing and managing agricultural wastes and by-products, such as manure and composted materials – CURRENTLY UNDER REVIEW ▪ The *Recycling Regulation* sets out requirements for the province's recycling program and for industry requirements for collection and disposal programs ▪ The *Municipal Wastewater Regulation* establishes water quality standards for discharges to ground, water, and for reclaimed waters and imposes monitoring requirements ▪ The EMA creates a number of offences: failure to handle and dispose of waste in accordance with the Regulations; failure to comply with the terms of a permit; and failure to report a spill or escape of waste into the environment ▪ The maximum penalty for non-compliance is $1-million and/or six months' imprisonment ▪ Additional administrative penalties of up to $75,000 may be applied under the *Administrative Penalties Regulation*	▪ Surface water protection ▪ Groundwater protection ▪ Hazardous waste and fuel management ▪ Solid waste management ▪ Soil and fill management ▪ Wildlife, vegetation, & SAR ▪ Fisheries resource protection ▪ Land development ▪ Natural resource management
Fish Protection Act (1997)	▪ Aimed at protecting and restoring fish habitat in provincial waters ▪ Provides authority for water managers to consider impacts to fish and fish habitat before approving new licenses, amendments to licenses or issuing approvals for work in or near streams ▪ Allows for the designation of sensitive streams and the development of recovery plans under the *Sensitive Streams Designation and Licensing Regulation* ▪ The *Riparian Areas Regulation* requires the protection of riparian areas during development through site-specific assessments by a Qualified Environmental Professional (QEP) on the effects of a proposed development on fish habitat	▪ Surface water protection ▪ Hazardous waste and fuel management ▪ Wildlife, vegetation, & SAR ▪ Fisheries resource protection ▪ Land development ▪ Natural resource management

LEGISLATION	SUMMARY AND ASSOCIATED REGULATIONS	APPLICABILITY
Forest and Ranges Practices Act (FRPA, 2002)	▪ Outlines how all forest and range practices and resource-based activities are to be conducted on Crown land in BC ▪ All forest and range licensees' activities are governed by FRPA and its regulations during all stages of planning, road building, logging, reforestation and/or grazing	▪ Natural resource development
Heritage Conservation Act (HCA, 1996)	▪ Aimed at identifying and conserving sites of heritage or archaeological value ▪ Requires provincial maintenance of a Heritage Site Registry and registered sites are protected from alteration or damage without a permit ▪ Contains specific conditions for the handling of Aboriginal artefacts and sites ▪ Under the HCA, government may issue orders to stop work on any property that may have or does have heritage value ▪ Maximum penalties for non-compliance are $50,000 and/or two years' imprisonment for individuals and $1-million for corporations	▪ Cultural resources protection ▪ Land development
Integrated Pest Management Act (2003)	▪ Regulates pesticide applications that may be used to control invasive plant infestations ▪ Gives two general requirements that apply to most pesticides uses: pesticides must be applied in accordance with their federal government approved label (also a requirement of the *Pest Products Control Act*) and pesticides must not be used in a way likely to cause an unreasonable adverse effect to human health or the environment. ▪ Under the Act, no person is authorized to use a pesticide in a manner that causes an "unreasonable adverse effect" on human health or the environment.	▪ Wildlife, vegetation, & SAR protection ▪ Natural resource management
Public Health Act (2008)	▪ Focus on public health issues including communicable disease and environmental health hazards ▪ The *Health Hazards Regulation* imposes requirements for prescribed setbacks of wells from probable sources of contamination, private dwellings, cemeteries and dumping grounds ▪ Under the *Sewerage System Regulation*: permits are required for the construction of holding tanks (*i.e.*, septic tanks); prescribed setbacks from wells are required for holding tanks and sewerage systems; and only qualified practitioners as prescribed in the Regulation are permitted to construct and maintain sewerage systems ▪ The *Sewerage System Regulation* also imposes requirements for maintenance of holding tanks and sewerage systems	▪ Groundwater protection
Transportation of Dangerous Goods Act (1996)	▪ Aimed at regulating the transportation of dangerous goods in the province ▪ The *Transportation of Dangerous Goods Regulation* adopts the Regulation under the federal TDGA ▪ Dangerous goods are prohibited from being transported unless all prescribed safety requirements are complied with ▪ Imposes reporting requirements where a spill, discharge or escape of dangerous goods occurs ▪ The maximum penalty for general non-compliance is $50,000 and/or two years' imprisonment and penalties are doubled for additional offences ▪ The maximum penalty for non-compliance with reporting requirements is $10,000 and/or one years' imprisonment	▪ Hazardous waste and fuel management ▪ Soil and fill management
Water Sustainability Act (2014)	▪ The BC *Water Sustainability Act* (WSA) is the main provincial regulation governing water resources in BC. It is applicable if "changes in and about a stream" are anticipated. Under the Act, this means: o Any modification to the nature of the stream including the land, vegetation, natural environment or flow of water within the stream; or o Any activity or construction within the stream channel that has or may have an impact on a stream. ▪ The WSA includes considerations aimed at protecting stream health and aquatic environments; considering water in land use decisions; regulating and protecting groundwater use; improving security, water use efficiency, and conservation; measuring and reporting water use; and enabling a range of governance approaches. The WSA includes policies giving government authority to impose and collect fines, and to order site remediation or prosecution as an alternative to fines. ▪ The *Groundwater Protection Regulation* establishes standards to protect groundwater supplies and requires all wells to be properly constructed, maintained, deactivated and closed	▪ Surface water protection ▪ Groundwater protection ▪ Wildlife, vegetation, & SAR protection ▪ Fisheries resource protection ▪ Land development ▪ Natural resource management
Water Protection Act (1996)	▪ Aimed at fostering sustainable use of the province's water resources ▪ Prohibits the removal of water from the province and the construction or operation of projects requiring the transfer of water from one major watershed to another ▪ The maximum penalty for non-compliance is $200,000 and/or one years' imprisonment	▪ Surface water protection ▪ Groundwater protection
Weed Control Act (1996)	▪ Aimed at protecting the province's economy, natural resources, and society from the negative impacts of foreign weeds, and is administered by the Ministry of Forest, Lands and Natural Resource Operations ▪ Requires all land occupiers to control the spread of provincial and/or regional noxious weeds on their land and premises, and specifies provisions for transportation, movement, and cleaning of machinery	▪ Wildlife, vegetation, & SAR protection ▪ Fisheries resource protection

Wildlife Act (1996)	▪ Regulates the management of wildlife in the province ▪ Protects wildlife from direct harm or harassment ▪ The *Controlled Alien Species Regulation* allows for the control of non-native species ▪ Protects birds and their eggs from possession or destruction ▪ Contains specific protections for raptors (*e.g.*, eagles) and their nests ▪ The maximum penalty for non-compliance is $250,000 and/or two years' imprisonment	▪ Hazardous waste and fuel management ▪ Wildlife, vegetation, & SAR protection ▪ Fisheries resource protection ▪ Land development ▪ Natural resource management

6. IMPLEMENTATION AND ADMINISTRATION

For the EMP to be effective, all related procedures, roles and responsibilities, and timelines must be clearly defined and communicated. Reviewing and reporting is also necessary given that the EMP is a living document that must evolve in response to changing environmental, operational and legislative conditions.

Review and reporting allows for:

- The assessment of progress towards achieving stated goals;
- The identification of where greater effort may be required for success; and
- Necessary updates and revisions to ensure the EMP reflects all relevant legislation, best management practices, guidelines and standards as well as any changes to the environmental management priorities of Leq'á:mel.

The following sections describe how the EMP is to be implemented and maintained, including:

6.1 Obligations for Implementation

Upon approval of the EMP in its current form (and any future amendments by Leq'á:mel leadership), residents of Leq'á:mel and all other parties working on Leq'á:mel lands must follow the EMP and the Environmental Operating Procedures (EOPs) and associated best management practices, guidelines, and strategies. This will ensure that all future land development and/or other activities proceed in a manner that promotes environmental stewardship while minimizing adverse environmental impacts. Leq'á:mel leadership and the Lands Department will have the mandate to make all community members and other parties wanting to operate on Leq'á:mel lands aware of the EMP and related EOPs.

6.2 Compliance and Enforcement

Although the EMP will provide a comprehensive environmental management strategy to safeguard the environment on Leq'á:mel lands, simply having the EMP in place is not enough to address the environmental management priorities. Leq'á:mel must find ways to ensure compliance and enforcement with the plans provided, any associated requirements, and relevant legislation, standards, and BMPs. This is discussed in further detail in **Section 1.1.2 of Part 2 of the EMP**.

6.3 Roles and Responsibilities

It is the responsibility of Leq'á:mel leadership, administration, developers and contractors, and all residents to conduct operations on Leq'á:mel lands in accordance with the EMP. The specific roles and responsibilities related to the implementation and maintenance of the EMP are provided in **Table 8** below.

Table 8. Specific Roles and Responsibilities Related to the EMP

Role	Responsibilities
Chief & Council	▪ Work with the Lands Department to establish and define the overall organizational structure, including roles, responsibilities, and authorities to effectively implement and maintain the EMP. ▪ Collaborate with Lands Department to approve, support and communicate the EMP goals, objectives, and EOPs internally and externally, and as appropriate. ▪ Promote and support environmental enhancement projects. ▪ Advocate for external funding options for implementation, monitoring and enforcement. ▪ Participate in the annual EMP Review Meeting and any amendments to the EMP.
Lands Department (all staff)	▪ Communicate the EMP goals, objectives, and EOPs internally and externally, and as appropriate. ▪ Maintain the Approved EMP: o Establish and implement EMP document control and review procedures. o Maintain the EMF, individual EMPs and EOPs to reflect changes in legislation, BMPs, guidelines and standards, as well as changes to environmental priorities, goals and objectives. o Participate in the Annual EMP Review meeting, and prepare the Annual EMP Report. o Prepare an annual budget for Chief and Council to review and approve for the implementation and maintenance of the EMP. o Where available, provide the equipment, training, and human resources necessary to maintain the EMP. ▪ Communicate the EMP: o Ensure that all staff, residents and contractors are aware of the EMP and EOP requirements. o Liaise with regulatory agencies as required. o Maintain a registry of complaints.

Role	Responsibilities

Lands Manager
 	
<u>Note:</u> The Leq'á:mel Lands Manager is ultimately responsible for these tasks but is allowed to delegate procedural aspects to other staff (e.g., Environmental Officer) and/or agencies as appropriate.
	▪ Communicate with Leadership about the EMP:
	  ○ Liaise with, advise, and report back to Chief and Council on the status of project activities and any environmental issues.
	  ○ Advise Chief and Council of any non-compliance and any emerging environmental issues and assist in addressing them.
	▪ Review Compliance with the EMP:
	  ○ Monitor contractor compliance with the EMP.
	  ○ Periodically review monitoring reports to ensure required data is being collected.
	  ○ Implement or assign corrective action as required in response to inspection or monitoring results, audit findings, Chief and Council reviews or incidence reports.
	▪ Environmental Incidences:
	  ○ Promptly investigate all reportable environmental incidences to ensure that appropriate reporting, response and other legal requirements have been met.
	  ○ Stop work (if necessary) to ensure compliance with regulatory and/or EMP requirements.
	  ○ Ensure environmental incidents are reported to the appropriate/ applicable agencies and Leadership.
	  ○ Retain the services of a qualified Environmental Professional to assess and mitigate risk associated with impacts to the environment.

Lands & Environment Project Manager	▪ Seek out external funding options for implementation, monitoring and enforcement. ▪ Provide adequate training of staff related to the implementation and requirements of the EMP. ▪ Champion the objectives of the EMP within the community and lead by example to foster community buy-in. ▪ Provide feedback on the implementation of and enhancements to the EMP. ▪ Coordinate the annual EMP review, the semi-annual review (if required), and any required amendments.
Lands Clerk	▪ Maintain a central, electronic and hard copy version of the EMP. ▪ Maintain EMP-related documents, including environmental permits and approvals, government agency correspondence, agreements with fuel, chemical and waste contractors and suppliers, and facility site plans, records, checklists, audit reports and related documentation.
Lands Advisory Committee	▪ Participate in annual EMP review and any required amendments.

Role	Responsibilities
Community Members / Residents	▪ Adhere to the requirements set out in the EOPs and other applicable legislation. ▪ Communicate environmental responsibilities and requirements of this EMP to others in the community who are new or unfamiliar with the EMP. ▪ Correct deficiencies and any non-compliance issues raised by Chief and Council, the Lands Department, and/or regulators. ▪ Participate in annual EMP review and any required amendments, where appropriate.
Developers[1] & Contractors *Note: It is the responsibility of all developers and contractors to understand and meet the requirements of all relevant legislation and regulations.*	▪ Adhere to the requirements set out in the EOPs and other applicable legislation. ▪ Communicate environmental responsibilities and requirements of this EMP to their staff and sub-contractors, and record that communication. ▪ Ensure all members of their staff and sub-contractors are trained to prevent or mitigate environmental impacts. ▪ Ensure all labour, equipment, and materials are available to execute the project activities and respond to environmental incidents. ▪ Correct deficiencies and any non-compliance issues raised by Chief and Council, the Lands Department, and/or regulators. ▪ Retain the services of a Qualified Environmental Professional to assess and mitigate risk associated with impacts to the environment. ▪ Provide documentation related to project activities upon request by the Lands Department and/or Chief and Council, and as per the EOPs and applicable legislation and regulations.

6.4 Schedule

The Implementation Schedule (**Appendix A**) is designed to assist Leq'á:mel with establishing clear timelines for activities recommended in the EMP. It summarizes the recommended activities of the EMP and organizes them into a series of timeframes including: foundation activities (immediate); short-term activities (less than 2 years); medium-term activities (2 – 5 years); and long-term activities (over 5 years). Timeframes within specific fiscal years for the implementation of activities are also identified in the Implementation Schedule.

6.5 Training and Education

As Leq'á:mel begins to implement the EMP, opportunities for employment of community members in the areas of environmental management may arise. To maximize these opportunities and to ensure that community members have priority for hiring opportunities for jobs related to environmental management (*e.g.*, construction/environmental

[1] For the purpose of this EMP, developer refers to any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including staff, members, Certificate of Possession holders, and non-member residents.

monitoring), **Leq'á:mel will build community capacity through the following:**

- Identification of suitable candidates to take part in environmental training programs for both short-term and long-term employment (*e.g.*, Environmental Officer);
- Allocation of specific funding to train Leq'á:mel members; and
- Maintenance of a database of personnel who have completed environmental training programs related to the EMP.

The **Building Environmental and Aboriginal Human Resources** project aims to help Aboriginal communities with environmental certification and employment thorough a series of skills-based environmental training programs. Training programs range from 3-16 weeks in duration. The following training programs are offered as part of this project:

- Workforce Training Programs
- Environmental Monitoring (Research and/or Regulatory)
- Environmental Site Assessment Assistant
- Contaminated Sites Remediation Coordinator
- Local Environmental Coordinator
- Land Use Planning Coordinator
- Solid Waste Coordinator
- Technician Training Programs
- Certificate of Applied Environmental Techniques
- Certificate of Environmental Planning and Administration
- Customizable Certificate

Additional schools and environmental training programs relevant to the implementation of the EMP include:

Vancouver Island University

- Natural Resources Extension Program
- Fish and Habitat Inventory Methods (3 -5 days)
- Riparian Areas Regulation (2 days)
- Aboriginal Fisheries Technician Certificate Program (10 days)
- Essential Fisheries Field Skills Certificate Program (10 days)
- Environmental Technician Certificate Program (25 days)
- Resource Manager Officer Technology (2 year)

VOI Training Group

- Environmental Monitoring for Construction Projects (3 days)
- Erosion and Sediment Control (3 days)
- Environmental Field Procedures for Works In and About Water (5 days)

Kwantlen Polytechnic University

- Environmental Protection: Diploma of Technology (2 - 3 years)

British Columbia Institute of Technology

- Environmental Engineering Technology (1 year with longer, part-time option)
- Fish, Wildlife and Recreation Diploma Program (2 years)
- Ecological Restoration (3 years with longer, part-time option)

6.6 Document Control

Document control is a means of keeping track of documents, procedures, and processes to ensure that the correct and most up-to-date versions are accessible to everyone. Document control is important given that environmental legislation, best management practices, procedures, and roles and responsibilities can change over time and the EMP must be updated and amended accordingly.

The following document control measures will be implemented for this EMP:

- Include a date and version number on all documents;
- Review all documents on a pre-determined schedule;
- Revise documents as required;
- Obtain appropriate approvals and sign-offs on all revised documents prior to issuing or re-issuing;
- Remove and appropriately destroy/recycle all out-dated documents;
- Maintain an electronic master copy at the Leq'á:mel Lands Department; and
- Store all EMP records in hard copy and electronic format for a minimum of five years.

6.7 Annual EMP Review

The Leq'á:mel Lands Department is responsible for ensuring that the EMP and related documents are reviewed, updated, and maintained as appropriate. To meet this commitment, the Leq'á:mel Lands Department will lead an annual review of the EMP and related documents and record the results and findings in an Annual EMP Review Report which will be presented to Chief and Council (further details are provided below in Section 6.8).

The review will include, but will not be limited to:

- An evaluation of all individual EMPs and associated EOPs for adequacy, accuracy and relevance, as well as any recommended amendments;
- A review of recent changes to applicable legislation and regulations as they relate to specific EOPS;
- An assessment of the EMP goals and objectives and the degree to which they are being achieved;
- The success of the EMP implementation plan, including recommendations for improvement; and
- The effectiveness of document control measures and any recommended changes.

6.8 Annual EMP Chief and Council Review

Leq'á:mel leadership (*i.e.*, Chief and Council) and the Lands Department will form an EMP Review Team and will meet annually for an EMP Review Meeting. **The meeting will serve to review and discuss:**

- The results and findings of the EMP Review Report, including:
  - A performance summary for activities covered under each EMP;
  - An update on the adequacy of the EMP goals and objectives and the degree to which the commitments are being met;
  - An update on the effectiveness and suitability of the EMPs and the related EOPs in relation to changing information and/or conditions;
  - Relevant changes to legislation and regulations that may impact the EMP and specific EOPs;
- An environmental incident report summary and any environmental non-compliances;
- Any remediation and preventative actions; and
- Any concerns of interested parties.

The annual meeting will also allow the EMP Review Team to approve, confirm, and/or set new goals and objectives as needed, as well as to review, modify and approve budgets as necessary to continue implementing the EMP.

6.9 Semi-Annual Reviews

A document review can also occur outside of the annual review in response to significant regulatory changes, new land use processes, changes in industrial operations, and/or organizational adjustments. As required, the Lands & Environment Project Manager will carry out semi-annual assessments on individual components of the EMP (Parts 1, 2 and/or 3), and make amendments as necessary.

6.10 Amendments

Any amendments to the EMP (Parts 1, 2 and/or 3) will be presented to Chief and Council for review, adoption and approval for implementation. All amendments will be printed, signed, and circulated to relevant personnel and posted.

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LEQ'Á:MEL FIRST NATION

ENVIRONMENTAL MANAGEMENT PLAN

PART 2: Environmental Management Plan Series

April 2017

Submitted to:

Submitted by:

DILLON CONSULTING

TABLE OF CONTENTS

1. INTRODUCTION

Leq'á:mel First Nation (Leq'á:mel) developed a Land Code to replace the land management provisions of the *Indian Act*. The Land Code forms the laws associated with Leq'á:mel lands and enables Leq'á:mel to exercise our own jurisdiction, control and decision making in respect to the development, conservation, protection, management and administration of our lands. This Environmental Management Plan (EMP) provides a comprehensive environmental strategy consisting of goals, objectives, relevant legislation, best management practices, guidelines, and strategies to assist Leq'á:mel with managing our lands in an environmentally and culturally sustainable manner for the benefit of future generations. It is intended to be visionary, goal-oriented, and based on the aspirations of both present and future community members.

Part 2: Individual EMP Series builds off **Part 1: Environmental Management Framework (EMF)** to provide a series of individual, targeted EMPs, including relevant legislation, standards and best management practices, for each of the environmental management priorities identified in the EMF. It is meant to be the key community planning piece of the EMP. The next part of the EMP, **Part 3: Environmental Operating Procedures**, is meant to guide the activities of all members, residents, land developers and operators on Leq'á:mel lands to ensure compliance with relevant legislation, adherence to best environmental management practices, and ultimately responsible environmental management and protection on Leq'á:mel lands.

1.1 Conditions for Success

This section outlines several key considerations in terms of the conditions for success that emerged from the EMP development process. The establishment of specific and achievable timelines, development of policies and laws, and on-going education and awareness were identified as important considerations. These are briefly described in the following sections while specifics related to each of the environmental priorities are incorporated throughout the individual EMP series.

1.1.1 Timelines

An important step in the EMP development process is the establishment of timelines based on agreed upon time frames. Short-term, medium-term, and long-term timelines were determined through a strategic planning session with leadership and administration, as outlined below.

Time Frame	Definition
Short-term	Less than 2 years
Medium-term	2 to 5 years
Long-term	Over 5 years

In order to support efforts towards achieving each goal associated with the management priorities, all objectives have been assigned a timeline which are indicated throughout the individual EMP series and are reflected in the implementation schedule in **Appendix A**.

1.1.2 Policy and Law Development

Policy and law development will be a key component of effective environmental management on Leq'á:mel lands. The development and implementation of environmental policies and laws can be used to operationalize components of the EMP and address environmental management concerns raised throughout the EMP development process.

Environmental Management Plans	Identify goals and objectives in terms of environmental management, as well as strategies to achieve them (*e.g.*, policy and/or law development).
Environmental Policies	Guiding principles (*e.g.,* application guidelines) used to give direction to program managers and staff within an organization.
Environmental Laws	Established, legally binding and enforceable procedures or standards related to environmental management that must be followed.

By linking policy, legislative, and environmental management objectives, Leq'á:mel will have an integrated approach to environmental management that is based on a combination of: guiding principles used to set direction within the community; and established procedures and standards that must be followed and are enforceable.

Throughout the EMP development process, Leq'á:mel leadership, administration and members identified potential policies and laws to support environmental management on Leq'á:mel lands based on existing issues. **Recommendations for potential policy and law development are provided throughout the individual EMP series.**

Given the costs and timelines associated with the development of laws, some First Nation communities have developed overarching pieces of legislation (*e.g.*, Land Protection Law, Community Quality Law) that encompass procedures and standards related to several environmental management priorities (*e.g.*, solid waste, air quality, water quality, etc.). An overview of some of the laws that support environmental management enacted by other First Nations is provided in **Appendix B**.

The Regulatory Gap

Federal environmental protection laws continue to apply to Leq'á:mel lands, and Leq'á:mel members and residents can be fined for non-compliance. However, the provinces have greater jurisdiction over land and natural resources, and the majority of legislation governing environmental management and contaminated sites is provincial and does not apply to First Nation reserve lands. As a result, federal laws do not provide an effective or comprehensive environmental management regime for First Nation reserve lands – this is commonly referred to as the "regulatory gap".

Under Land Code, a First Nation becomes responsible for closing this regulatory gap on its lands through policy and legislative development and implementation. In many cases, First Nations seek to harmonize their environmental policies and laws with those of the province, regional districts, and/or local municipalities to promote effective and consistent environmental processes and to avoid duplication.

Although provincial and municipal legislation and regulations do not apply to Leq'á:mel lands, they may serve as best management practices or guidelines for environmental management policy and/or law development.

Key considerations when developing and implementing policies, laws or regulations include, but are not limited to:

- Policies, laws and regulations should be made publicly available to everyone expected to follow them;
- Community education surrounding any policies, laws, associated regulations, and the rationale behind them should be provided to encourage compliance;
- Similar to federal and provincial laws, application of a "polluter pays" principle to any laws related to environmental management is important to reduce liability of Leq'á:mel for the actions of individuals, and to strengthen existing Leq'á:mel policies related to environmental protection; and
- Consistent enforcement measures (*e.g.,* ticketing, fines, penalties, enforcement orders, conviction, and/or prosecution) are generally needed to make laws and associated regulations effective.

Many First Nations are seeking to assume jurisdiction for enforcing environmental laws within their own communities. Depending on available resources and capacity, Leq'á:mel may choose to establish a Community Enforcement Officer or similar position with a responsibility to enforce Leq'á:mel laws, or coordinate and share resources with other First Nations in the region to establish a shared enforcement position or service.

1.1.3 External Support

In addition to community capacity building for environmental management, as described in **Section 6.5 of the Environmental Management Framework (Part 1 of the EMP)**, Leq'á:mel will likely require external expertise (*e.g.*, skilled contractors, biologists, engineers, technicians, project managers, etc.) to manage existing and potential environmental issues. Leq'á:mel will develop and maintain a roster of Qualified Environmental Professionals that can be called upon to provide technical expertise as needed. Leq'á:mel will also strive to identify job shadowing and capacity building opportunities for community members where external expertise is required (*e.g.*, job shadowing for youth for environmental field work including wildlife surveys, water quality monitoring, etc.).

1.1.4 Education and Awareness

Engaging Leq'á:mel members and all residents of Leq'á:mel lands is critical to the success of this EMP. In order to achieve the goals identified for each environmental priority, the community needs to be engaged and play an active role. Education, training and outreach programs can contribute to positive change in attitudes and behaviours. These may include, but are not limited to:

- Collaborating with various external agencies (governmental and non-governmental) to develop environmental awareness and protection programs;
- Providing members and non-member residents with information on environmental resources within or adjacent to Leq'á:mel lands and associated threats through:
    - Posting information on community Facebook pages and in community newsletters
    - Community workshops
    - Informative signage in the community
    - Circulating informational pamphlets

- Raising awareness to empower all residents to identify and report environmental incidences (*e.g.*, "Community Environmental Watch"); and
- Training for Leq'á:mel members to work as environmental/construction monitors, field assistants, etc.

On-going education and opportunities to engage in stewardship activities help to instill a sense of pride in community members and an understanding of accountability when it comes to environmental management. This, in turn, helps to manage existing issues and prevent future ones. Engaged individuals can act as additional eyes and ears of the community and are more likely to identify and report infractions.

Throughout the individual EMP series in the following sections, specific strategies for education and outreach related to each environmental management priority have been identified where possible.

2. GROUNDWATER PROTECTION PLAN

Groundwater is water occurring beneath the ground surface amongst spaces between rocks and soil. Unlike surface water, groundwater exists almost everywhere underground and is not confined to channels and depressions like rivers and lakes; however, groundwater and surface water are linked in the hydrologic cycle where groundwater often returns back to join surface waters. Some areas in our watershed act as natural water storage areas. These areas are referred to as aquifers and they contain large groundwater resources, which are often used as a source of drinking water.

2.1 Key Features

Leq'á:mel lands are located on three different aquifers that supply drinking water:

- Lake Errock/Deroche Creek Aquifer
- Nicomen Slough Aquifer
- Chilliwack-Rosedale Aquifer

Drinking water infrastructures include:

- Holachten:
  - 1 community water system
  - 2 individual sand point drinking water wells
- Skeahm:
  - 1 community water system
  - 8 individual sand point drinking water wells
  - 1 individual deep drinking water well
- Lakahahmen:
  - 1 community water system
  - 4 individual sand point drinking water wells
  - 1 individual deep drinking water well
- Zaitscullachan
  - 1 individual deep drinking water well

Refer to **Part 1 of the EMP** for further background information related to groundwater on Leq'á:mel lands.

2.2 Key Threats

- Leq'á:mel drinking water comes from shallow aquifers that are highly vulnerable to contamination from surface sources, including waste dump sites, septic fields, and industrial and agricultural land use.

- According to the Official Community Plan for the Deroche Area, septic fields and agricultural activities pose the greatest risks to groundwater in the area.
- Other contaminant sources include: leaking gasoline storage tanks or septic tanks, pesticides, fertilizers, and accidental spills and/or leaching of hazardous substances and wastes (*e.g.*, batteries, paint) that are not properly stored or disposed of.
- Groundwater contamination can also lead to contamination of surrounding areas depending on the contaminant(s), the subsurface conditions (*e.g.*, soil, sand or clay), and the directional flow of groundwater. Given the linkage between groundwater and surface water, contaminated groundwater also poses a potential threat to surface water quality.

2.3 Goals & Objectives

Goal

- Everyone on Leq'á:mel lands has access to clean drinking water

Objectives (in priority order and with timelines)

- Gain a thorough understanding of liability related to existing groundwater contamination on Leq'á:mel lands (**short-term**)
- Develop and implement a policy related to groundwater protection based on relevant legislation and Best Management Practices to ensure Leq'á:mel standards are aligned with Health Canada's standards (**short-term**)
- Continue to address surface water quality issues and seepage through preventative maintenance and restoration activities (**on-going/long-term**)
- Identify current and long-term drinking water infrastructure needs (*e.g.,* community system for Lakahahmen, upgrades to Holachten) and resources (including external) to enable them (**long-term**)
- Address outstanding groundwater contamination and well water quality issues on CP-held land (**medium-term**)

2.4 Management Framework

Relevant Legislation

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Safe Drinking Water for First Nations Act*

Provincial – including but not limited to:

- *Environmental Assessment Act*

Relevant Legislation* (Cont'd)

- *Environmental Management Act*
  - Contaminated Sites Regulation
  - Hazardous Waste Regulation
  - Agricultural Waste Control Regulation
  - Spill Reporting Regulation
  - Waste Discharge Regulation
- *Water Sustainability Act*
  - Groundwater Protection Regulation
- *Water Protection Act*
- *Drinking Water Protection Act*
  - Drinking Water Protection Regulation
- *Public Health Act*
  - Health Hazards Regulation
  - Sewerage System Regulation

Refer to Section 5.0 in Part 1 of the EMP for more information

Best Management Practices & Guidelines

Although the constitutional responsibility for First Nation lands rests with the federal government, the responsibility for drinking water programs is divided among:

- Health Canada;
- Indigenous and Northern Affairs Canada (INAC);
- Environment and Climate Change Canada;
- Provincial governments;
- Municipalities (where service agreements are in place); and
- First Nations.

Health Canada developed the Guidelines for Canadian Drinking Water Quality (GCDWQ) in collaboration with representatives from provincial and territorial drinking water authorities and Environment Canada. These guidelines address microbial and chemical contaminants as well as physical characteristics of water, such as taste and odour. Various guidance and technical documents have also been created to accompany the guidelines, including Guidance for Providing Safe Drinking Water in Areas of Federal Jurisdiction which aims to give clear, consistent guidance on how to implement the GCDWQ.

Best Management Practices & Guidelines (Cont'd)

The provinces and territories establish their own drinking water quality requirements that may be more stringent than the federal ones. The BC government has established its own approved water quality guidelines, including:

- Guidelines for Drinking Water
- Guidelines for Aquatic Life, Wildlife & Agriculture

The Canadian Council of Ministers of the Environment (CCME) developed the From Source to Tap guidance document that outlines the multi-barrier approach to safe drinking water, which covers drinking water source protection, water treatment and distribution, management and monitoring.

Environment and Climate Change Canada developed the Federal Interim Groundwater Quality Guidelines to assess non-potable (non-drinkable) groundwater given that such guidelines have not yet been developed by the CCME program. The Canadian Water Quality Guidelines for the Protection of Aquatic Life should also be used given the location of Leq'á:mel lands relative to surface waters containing aquatic life.

In addition to monitoring groundwater quality to ensure compliance with relevant legislation and standards, key strategies for protecting groundwater include:

- Restrictions on chemical usage, storage of hazardous materials and wastes, and industrial activities;
- Public education and awareness programs;
- Prevent contaminated soil and fill from being brought onto Leq'á:mel lands (refer to **Section 8.0: Soils & Fill**);
- Properly disposing of liquid and hazardous waste materials (refer to **Section 11.0: Hazardous Waste & Fuels**); and
- Strategic decisions to reduce potential impacts (*e.g.*, extending municipal sewer lines to reduce septic sewage disposal).

2.5 Management Strategies

Objective 1:
Gain a thorough understanding of liability related to groundwater contamination

Short-term

The following strategies will be employed to support this objective:

1) Connect with the Lands Advisory Board Resource Centre and Leq'á:mel's legal advisor to discuss liability related to existing groundwater issues on Leq'á:mel lands, as identified in the Phased ESAs previously conducted.

2) Communicate liability and risks with CP Holders and lessees on Leq'á:mel lands to ensure everyone is aware and to support minimizing/avoiding further impacts to groundwater.

Objective 2:
Implement a groundwater protection policy

Short-term

The Groundwater Protection Policy will include:

- Standard protection measures; and
- Measures to manage future developments to minimize or eliminate impacts to groundwater sources.

Protection measures will include, but are not limited to, the following:

- Implement a regular inspection and maintenance schedule to ensure:
  - The wellhead or the surface seal is in good condition.
  - The vermin-proof cap is in good condition.
  - The well is operated in a manner that prevents the intrusion of contaminants into the well, or into the aquifer from which the water is withdrawn (*e.g.*, don't over-pump).
  - The well stick-up is protected from physical damage.
  - The well is free from any junk, garbage or other items. Note it is illegal to put any junk (*e.g.*, pesticides, fertilizers, human or animal waste, refuse, or materials from construction or demolition) in an active or abandoned well.
- Keep potential contaminants a safe distance away from well (*e.g.*, a minimum 30 metres or 100 feet from wellhead).
- Responsible management of waste materials – refer to:
  - **Section 6.0: Solid Waste Management**
  - **EOP 5: Solid Waste Management Procedures in Part 3 of the EMP**
  - **Section 11.0: Hazardous Waste & Fuels Management**
  - **EOP 10: Hazardous Waste & Fuels Procedures in Part 3 of the EMP**
- Maintain Spill Kits at strategic locations in the community.
- Require secondary containment of all fuels and chemicals.
- Conduct an annual assessment of fuel tanks to identify degradation of the tank structure or pipes – refer to **Section 11.0: Hazardous Waste & Fuels**.
- Inspect and maintain septic systems. Good maintenance measures will include having septic tanks pumped every 2 to 3 years and ensure it is not failing.

Refer to BC's Groundwater Protection Regulation for details on well protection measures that should be incorporated into the policy.

Objective 2 (Cont'd)

Measures to manage future developments to minimize or eliminate impacts to groundwater sources that will be considered include, but are not limited to, the following:

- All development activities will be subject to a review of potential risks to groundwater; and
- Potential impacts will be assessed and mitigation strategies will be implemented – refer to **EOP 1: Groundwater Protection Procedures in Part 3 of the EMP**.

The Groundwater Protection Policy will be put into action through the development and implementation of a Subdivision, Development and Servicing Law that will include a permitting process that incorporates considerations for groundwater protection – refer to **Section 10.0: Land Development Management Plan**.

Objective 3:

Continue to address water quality issues and associated seepage

On-going / long-term

The following strategies will be employed to support this objective:

1) Develop and implement a Drinking Water Protection Plan

As outlined in INAC's First Nations On-Reserve Source Water Protection Guide and Template, the key steps to developing a plan include:

- Establish a working group or committee;
- Complete a baseline inventory and risk assessment;
- Identify and implement risk management actions; and
- Monitor, review and update as necessary.

The baseline inventory and risk assessment will be conducted to:

- Understand the current state of groundwater on Leq'á:mel lands and plan and/or prioritize for protection and/or remediation where necessary;
- Establish a benchmark (*i.e.,* point of reference) against which future changes (positive or negative) to groundwater on Leq'á:mel lands can be compared to; and
- Develop a database of all potential sources of groundwater contamination on Leq'á:mel lands to effectively manage risks.

The baseline inventory and risk assessment will include, but will not necessarily be limited to:

- Drinking water sources and types (*e.g.*, sandpoint or deep well, depth, etc.);
- Potential sources of pollution (*e.g.*, lead pipes, fuel and waste oil storage containers, septic systems and fields, derelict vehicles, pesticide/fertilizer use, etc.) for each well based on surrounding land use activities and associated risks to drinking water sources; and

Objective 3 (Cont'd)

- Stormwater infrastructure (*e.g.*, ditches, culverts and pipework) and receptor areas to assess stormwater shortfalls and future needs.

The inventory and risk assessment will be done through collaboration with lessees, CP Holders, community members and other agencies (*e.g.*, Environment Canada, Fraser Valley Watershed Coalition), and a review previous studies and reports (*e.g.*, ESAs).

All drinking water sources and potential sources of contamination will be listed and mapped, and classified based on their associated risk to groundwater quality (high, medium, and low). The Lands Department will maintain a database of all relevant files (*e.g.,* GIS files), maps, studies, and analytical results. **Figure 3 in Part 1 of the EMP** provides a starting point.

With the support of external technical expertise, if required, the Working Group will identify risk management actions based on the outcome of the inventory and risk assessment and develop an implementation strategy.

2) Ongoing Monitoring

The First Nations Health Authority (FNHA) monitors drinking water quality on Leq'á:mel lands. The Leq'á:mel Lands Department will work collaboratively with the FNHA and all lessees, CP Holders and developers to address any monitoring issues, where found, and update the Drinking Water Protection Plan, as needed.

3) Continue working with external agencies or organizations to address surface water quality issues which may impact groundwater quality on Leq'á:mel lands

Leq'á:mel will continue to seek out potential opportunities to work with external agencies or organizations (*e.g.*, Fraser Valley Watershed Coalition) on surface water quality issues impacting the sloughs and creeks on and adjacent to Leq'á:mel lands with the potential to impact groundwater resources through seepage.

Objective 4:
Identify current and long-term drinking water infrastructure needs and resources

Long-term

The following strategies will be employed to support this objective:

1) Connect with and maintain communications with the Fraser Valley Regional District (FVRD) about any planned or potential future water system upgrades to any of the service areas within the FVRD (*e.g.*, Deroche). There may be opportunities for Leq'á:mel to upgrade its drinking water infrastructure in conjunction with any future planned upgrades in adjacent communities.

2) Complete a community water supply and demand study to better understand existing capacity and future requirements of the Leq'á:mel community in terms of drinking water and fire supply. A qualified hydrogeologist will be engaged to complete the study.

Objective 4 (Cont'd)

The study will enable Leq'á:mel to:

- Review the capacity of current water supplies; and
- Assess the impact of future water consumption (based on anticipated population growth and development) and climate change on existing sources and infrastructure.

3) Explore potential financial resources/support to upgrade water infrastructure on Leq'á:mel lands with INAC and any other funding avenues available.

Objective 5:
Address outstanding groundwater contamination and well water quality issues on CP-held land

Medium-term

As a starting point to address outstanding groundwater contamination and well water quality issues on CP-held land, the Leq'á:mel Lands Department will:

1) Connect with INAC to determine if funding may be available to address outstanding groundwater contaminations issues on CP-held lands as identified through the previously conducted ESAs.

2) Connect with the CP Holders of the affected parcels to secure access for remaining work to be completed.

3) Work with the First Nations Health Authority and CP Holders to better understand existing well water quality issues and how they can be addressed. Where issues are related to current land use activities, the Lands Department will work with the CP Holders to address these issues (*e.g.*, enforce lease terms and/or the Zoning Law).

2.6 Education and Awareness

There are existing programs and organizations that provide educational information in various formats that can be used either directly or as a template:

- The provincial government recently developed a Groundwater Protection Information for Well Owners Brochure that provides an overview of key protection measures;
- The Groundwater Foundation provides information about the basics including what groundwater is and the hydrologic cycle as well as explanations of potential threats to groundwater;
- Conservation Ontario has an online catalogue of resources related to groundwater management and education; and
- The Partnership for Water Sustainability in BC offers a series of guidance resources focused on BC regulations and standards. While more in-depth than some of the other resources, this resource could be beneficial when providing information to community decision-makers.

3. FISHERIES RESOURCES PROTECTION PLAN

Fisheries refer to the fish and those who harvest them in a region. They are generally defined by: the people involved; the species or type of fish; the area or water body; the method of fishing; and the purpose of activities.

3.1 Key Features

Leq'á:mel is favourably located near the headwaters of important watercourses. These headwaters provide a flow of cold, clean water favourable to fish populations.

The main fish-bearing or supporting water features include:

- Fraser River
- Nicomen Slough
- Quaamich Slough
- Deroche Creek
- Zaitscullachan Slough
- Sumas River
- Vedder River
- Wetland areas on Aylechootlook and Lackaway

Refer to **Part 1 of the EMP** for background information related to fisheries on Leq'á:mel lands.

3.2 Key Threats

Human activities such as land development and resource extraction are increasingly changing the natural landscape and the health of ecosystems, which may lead to:

- Fisheries habitat loss and/or degradation, as well as loss of habitat connectivity;
- Sedimentation related to construction and land development, which in turn can reduce habitat connectivity as well as clog the gills of fish and interfere with their breathing; and
- Input of nutrients (*e.g.,* fertilizers) and/or chemicals that impact water quality, which turn impacts the health of fish and the species they feed on.

3.3 Goals & Objectives

Goal

- Enhance & restore fish and fish habitat on and adjacent to Leq'á:mel lands

Objectives*
(in priority order and with timelines)

- Complete a fish species inventory (including invasive species)
- Continue Nicomen Slough restoration initiatives
- Identify additional opportunities for fish habitat restoration and enhancement
- Explore opportunities to connect with Stó:lō Nation on environmental management strategies related to Nicomen Slough (*e.g.,* S'ólh Téméxw Use Plan)

All objectives are considered ongoing and long-term

3.4 Management Framework

Relevant Legislation*

Federal – including but not limited to:

- *Canadian Environmental Assessment Act*
- *Fisheries Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Management Act*
- *Water Sustainability Act*
- *Riparian Areas Protection Act*
- *Wildlife Act*
- *Water Protection Act*
- *Fish Protection Act*
    - British Columbia Riparian Areas Regulation

Refer to Section 5.0 in Part 1 of the EMP for more information

Best Management Practices & Guidelines

Fisheries and Oceans Canada provides a set of Measures to Avoid Causing Harm to Fish and Fish Habitat. Considerations at the **project planning level** include:

- Timing:
    - Respect fisheries timing windows (outlined below)
    - Minimize duration of in-water work, where required
    - Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation
- Site selection:
    - Design and plan activities so that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided
    - Design projects to minimize loss or disturbance to riparian vegetation
    - Avoid building structures on areas that are inherently unstable (*e.g.*, floodplains, alluvial fans) and may result in erosion and scouring of stream bed
    - Avoid or reduce the number of stream crossings in the design, and ensure fish passage is maintained where avoidance is not possible

Best Management Practices & Guidelines (Cont'd)

- Contaminant and spill management:
  - Do not allow chemicals or other materials to enter watercourses
  - Develop a spill response plan in the case of chemical or sediment releases
  - Building materials in watercourses should not release or leach substances

The BC Ministry of Environment has also developed a set of regional reduced-risk timing windows for activities that have the potential to impact fish populations. If works involve fish bearing streams, in-channel or bank work should be completed during timing windows noted below:

- June 15 – August 31 (Dolly varden, Bull trout)
- July 15 – September 15 (Pacific salmon)
- August 1 – October 31 (Rainbow trout, Cutthroat and Steelhead trout)

Sedimentation can be avoided, or at least minimized, by employing erosion and sediment control measures during any land development activities. The BC Ministry of Environment has developed Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia, which includes BMPs for ESC (refer to page 2-49 in the document):

- Identify sensitive habitat areas and natural waterbodies that may be impacted
- Develop an Erosion and Sediment Control Plan for all construction activities
- Do not stockpile/store soils near surface waters
- Retain existing vegetation/ground cover where possible to limit the exposure of soils and use effective erosion prevention measures where this is not possible
- Manage sediment using silt fencing, fabric bags, geotextile, etc.
- Re-vegetate exposed soils as quickly as possible using indigenous plant species
- Monitor and assess for signs of erosion or sedimentation

Guidelines for Community Planning in terms of fisheries protection include the following:

- Identify fisheries resources that may be impacted by different land uses to inform future developments
- Include fish habitat protection measures (*e.g.*, buffers around surface water features and riparian areas) in community plans and development processes
- Work with local land trust organizations and community groups to encourage fisheries conservation
- Include fish habitat restoration in community plans

Best Management Practices & Guidelines (Cont'd)

Guidelines at the Site Level in terms of fisheries protection include the following:

- Conduct a bio-inventory of fisheries resources at the site prior to development to inform development plans and associated protection and mitigation measures
- Retain and enhance aquatic ecosystem features and function during site design and construction
- Build away from flood plains
- Encourage naturalist clubs and stewardship groups to provide input on development proposals
- Maintain riparian vegetation cover for bank stabilization and reduce erosion
- Avoid or reduce the number of stream crossings in the design, and ensure fish passage is maintained where avoidance is not possible
- Minimize impacts from roads
- Minimize the size of clearance areas
- Conduct environmental monitoring during construction activities
- Using natural landscape techniques and species

Within the BC Develop with Care guidelines, a section dedicated to Environmentally Valuable Resources provides more detailed information related to the strategies listed above. Several other guiding documents are also available, including Appendix Materials that include information on conducting bio-inventories (*e.g.*, checklists) and additional protection/conservation tools.

Reducing or eliminating impacts to surface and groundwater quality is also important for fisheries resources protection – refer to **Section 2.0: Groundwater Protection** and **Section 5.0: Surface Water Protection**.

3.5 Management Strategies

Objective 1:
Complete a fish species inventory

Ongoing / long-term

Continue efforts to complete a fish species inventory (including invasive species):

Building off fish studies already completed on and adjacent to Leq'á:mel lands, the Lands Department will make efforts to develop a fish species inventory. The purpose of the fish species inventory is:

- To establish a benchmark (*i.e.,* point of reference) before any further changes to water features against which future changes (positive or negative) to fish and their habitats on Leq'á:mel lands can be compared to;
- To assist with determining where fish habitat restoration and/or protection efforts should be placed or how they should be prioritized; and

Objective 1 (Cont'd)

- To identify environmental baseline conditions that will assist in managing risks associated with the potential loss of or impacts to fish habitat during various activities on Leq'á:mel lands, and provide a basis for long-term monitoring.

The fish species inventory will include, but will not necessarily be limited to:

- Existing aquatic resources, including the presence of fish and fish habitat, and invasive species;
- Traditional Knowledge related to fish species and their habitats; and
- Any additional environmentally valuable resources that may exist, such as critical spawning or rearing habitat.

The inventory should be completed in collaboration with lessees, CP Holders, community members and other agencies (*e.g.*, Fisheries and Oceans Canada, Fraser Valley Conservancy).

Any data collected will be mapped for visual and future reference. The Lands Department will maintain a database of all relevant files (*e.g.,* GIS files), maps, studies, and analytical results.

Information gained during any land use planning and land development permitting and approvals processes (refer to **Section 10.0: Land Development Management**) will be incorporated into the fish species inventory.

Objective 2:
Continue Nicomen Slough restoration initiatives

Ongoing / long-term

Leq'á:mel will continue to work with existing partners on the Nicomen Slough restoration initiative.

It is anticipated that future activities will include, but are not limited to the following:

- Continue water quality monitoring;
- Large-scale restoration/enhancement; and
- Educational outreach and signage.

Objective 3:
Identify additional opportunities for fish habitat restoration and enhancement

Ongoing / long-term

Following the baseline inventory (Strategy 1), management strategies related to the restoration, preservation and protection of fisheries resources will be explored.

The nature of the management strategies will depend on which species (indigenous and invasive) are found to be present, and where habitat restoration should be prioritized.

Leq'á:mel will work with local naturalist and environmental stewardship groups to develop and implement such initiatives. Members of these groups often have a biology, ecology or other relevant background and/or experience and can serve as valuable resources to assist with management efforts for the greatest success.

Objective 3 (Cont'd)

Important considerations include, but are not limited to:

- Qualified fisheries biologists should be engaged to support the development of habitat restoration and enhancement programs;
- Available Best Management Practices and guidelines should be used to develop management strategies;
- Biologists or environmental specialists from different government organizations (*e.g.,* Canadian Wildlife Service, Fisheries and Oceans Canada) should be consulted to ensure effectiveness of the management plans while also ensuring compliance with relevant legislation (*e.g., Fisheries Act*); and
- Since fish species' ranges and habitats extend beyond the boundaries of Leq'á:mel lands, Leq'á:mel should collaborate with surrounding communities and the Fraser Valley Regional District to ensure that management strategies are harmonized for success. This will also enable the incorporation of Traditional Knowledge into larger, more regional management plans/strategies.

Objective 4:
Explore opportunities to connect with Stó:lō Nation on Nicomen Slough restoration

Ongoing / long-term

The Lands Department will connect with Stó:lō Nation to discuss opportunities to collaborate on additional Nicomen Slough restoration initiatives.

There may be opportunities to tie additional restoration initiatives to the objectives of the S'ólh Téméxw Use Plan.

3.6 Education and Awareness

Leq'á:mel can work to increase community knowledge and awareness of fisheries protection (*e.g.*, impacts of spills and illegal dumping) through various activities, including but not limited to:

- Preparing information for members related to annual fish harvesting guidelines, methods to protect fish habitat, and methods to minimize impacts on fish populations;
- Hosting fish habitat restoration and enhancement events, potentially with the support of other interested parties:
    - The Fraser Valley Conservancy hosts workshops and training opportunities upon request to build a strong base of informed "citizen science" in the Fraser Valley
    - The Fraser Valley Watershed Coalition supports local stewardship groups with expertise and resources for habitat enhancement projects

  - Fisheries and Oceans Canada operates the Salmonid Enhancement Program to conserve and manage Pacific salmon stocks and associated activities include resource restoration and stewardship and community involvement

- Raising awareness to empower community members to identify and report incidences that may impact fish populations and their habitat (*e.g.*, deposition of potentially harmful substances into waterways); and
- Training for Leq'á:mel members to work as environmental field assistants during any fish surveys or studies conducted on or adjacent to Leq'á:mel lands.

The more community members are able to identify the requirements for healthy fish habitat, the more they will be able to provide feedback to the lands department on areas for restoration and enhancement.

4. WILDLIFE, VEGETATION, & SPECIES AT RISK PROTECTION PLAN

Wildlife refers to the undomesticated animals living in a particular area or habitat. Vegetation refers to the plants found in particular area or habitat. Plants and animals (including fish) that are in danger of disappearing from the wild are referred to as species at risk (SAR), which are protected by federal or provincial legislation. SAR are classified as:

- Extinct – no longer in existence anywhere
- Extirpated – no longer in existence in Canada but will exist elsewhere
- Endangered – facing extirpation or extinction
- Threatened – likely to become endangered if nothing is done to reverse impacts
- Species of special concern – may become threatened or endangered

Invasive species are plants and animals that are not indigenous to a particular area they are found, and which have a tendency to spread to a level that negatively impacts other species, the environment, and/or human health.

4.1 Key Features

Forested or heavily vegetated areas include:

- Holachten
- Lakahahmen
- Aylechootlook
- Lackaway
- Lakaway Cemetery

Species at risk with the potential to be present on or adjacent to Leq'á:mel lands include:

- Fish (White sturgeon, Mountain sucker, Cutthroat trout, Bull trout, Dolly Varden, Salish sucker, Brassy minnow)
- Western screech owl
- Northern rubber boa
- Great blue heron
- Western painted turtle
- Western toad
- Red-legged frog
- Oregon forestsnail

There are several environmentally sensitive areas in and around the Leq'á:mel lands, including:

- Sumas Mountain
- Bert Brink Wildlife Management Area
- Fraser River Ecological Reserve

There are several wetlands, including:

- Aylechootlook
- Lackaway

Refer to **Part 1 of the EMP** for background information related to wildlife on Leq'á:mel lands.

4.2 Key Threats

Human activities such as land development and resource extraction are increasingly changing the natural landscape and the health of ecosystems, which may lead to:

- Important wildlife and plant habitat being degraded or lost, which may lead to declines in populations of certain plants and animals (including SAR) with increased threats of extinction;
- Increased incidents of pests and disease associated with habitat loss and degradation;
- Increased flood risk and soil erosion associated with deforestation and land development; and
- Ecosystem destabilization – as the number of species in an ecosystem begins to decline, the system becomes less and less able to respond to and recover from the disturbances caused by further human activities or natural disturbances (*e.g.,* drought).

4.3 Goals & Objectives

Goal

- Protect and preserve wildlife, vegetation and SAR on Leq'á:mel lands

Objectives (in priority order and with timelines)

- Protect and preserve habitat values, including SAR (**ongoing / long-term**)
- Continue existing SAR efforts (**ongoing / long-term**)
- Develop strategies to effectively deal with invasive aquatic plant and animal species (**medium-term**)
- Develop strategies to effectively deal with invasive terrestrial plant and animal species (**short-term**)
- Develop a traditional & medicinal plant inventory (**short-term**)

4.4 Management Framework

Relevant Legislation

Federal – including but not limited to:

- *Canadian Environmental Assessment Act*
- *Migratory Bird Convention Act*
- *Fisheries Act*
- *Species at Risk Act*

Provincial – including but not limited to::

- *Environmental Management Act*
- *Water Sustainability Act*

Relevant Legislation* (Cont'd)

- *Wildlife Act*
  - Controlled Alien Species Regulation
- *Fish Protection Act*
- *Weed Control Act*
- *Integrated Pest Management Act*

Refer to Section 5.0 in Part 1 of the EMP for more information

Best Management Practices & Guidelines

The BC Ministry of Environment has developed a variety of provincial guidelines and best management practices related to habitat conservation and ecosystem management. Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia offers specific information related to ecosystems at risk and invasive species in the South Coast Region. Guidelines for Ecosystem and Species Protection at the Community Level are also provided, which include:

- Identify habitat reservoirs and refuges and environmentally valuable resources
- Maintain of ecosystem variety
- Include habitat protection measures in community land use plans
- Work with local land trust organizations and community groups to encourage conservation
- Identify or develop and maintain of wildlife corridors
- Establish of buffers around areas with environmentally valuable resources
- Establishment and protection of urban forest areas
- Restore wildlife habitat
- Manage invasive species (*e.g.*, Japanese knotweed)

Guidelines for Ecosystem and Species Protection at the Site Level are also provided and include the following:

- Conduct a bio-inventory of wildlife, vegetation and SAR resources at the site prior to development to inform development plans and associated protection and mitigation measures
- Retain and enhance ecosystem features and function during site design and construction
- Encourage naturalist clubs and stewardship groups to provide input to development proposals
- Connect habitat areas with wildlife corridors

Best Management Practices & Guidelines (Cont'd)

- Minimize impacts from roads
- Temporary fence around trees during construction
- Minimize the size of clearance areas
- Conduct environmental monitoring during construction
- Use natural landscape techniques and species

A section on Environmentally Valuable Resources provides more detailed information related to the strategies listed above. Several other guiding documents are also available, including:

- Guidelines for Amphibians and Reptile Conservation
- Guidelines for Raptor Conservation
- Species Factsheets with information related to land development and mitigation protocols for rare and endangered species
- Appendix Materials that include information on conducting bio-inventories (*e.g.*, checklist) and additional protection/conservation tools

The BC Ministry of Environment has also developed a set of regional timing windows for activities that have the potential to impact bird and SAR populations:

- **If works involve vegetation clearing:** vegetation should only be removed from an area within the clearing timing window to protect nesting birds and ensure that activities will not result in the disturbance of bird nests, eggs, or young:
    - August 15 – January 30 (raptors – eagles, hawks, falcons, owls)
    - August 15 – January 30 (herons)
    - August 1 – March 31 (other birds)
- **If works involve species at risk:** there are no standard windows of least risk. A Qualified Environmental Professional, and/or provincial and federal regulators should be consulted prior to works being initiated.

The Invasive Species Council of BC offers various resources related to invasive species management, including:

- A legislative guidebook
- An invasive species toolkit for local government
- A list of regulated invasive plants in BC

Upon funding availability, Environment and Climate Change Canada's Aboriginal Fund for Species at Risk Program can be used to assist First Nations in building capacity for participation in SARA implementation and undertaking activities to protect the habitat of SAR. Applications to participate in the program are accepted in the fall each year.

4.5 Management Strategies

Objective 1:
Protect and preserve habitat values

Ongoing / long-term

The following strategies will be employed to support this objective:

1) Complete a bio-inventory of on Leq'á:mel lands

Building off existing wildlife, vegetation and SAR studies, the Lands Department will make efforts to develop an inventory of wildlife, vegetation, and SAR on Leq'á:mel lands.

The purpose of the inventory is:

- To identify the plants and animals (including SAR and invasive species) on Leq'á:mel lands and plan for their protection or conservation;
- To establish a benchmark (*i.e.,* point of reference) before any further changes to wildlife, vegetation and SAR and their habitats present on Leq'á:mel lands, against which future changes (positive or negative) can be compared to;
- Assist with determining where restoration and/or protection efforts should be placed or how they should be prioritized; and
- To identify environmental baseline conditions that will assist with managing risks associated with the potential loss or impacts to habitats during various activities on Leq'á:mel lands, and provide a basis for long-term monitoring.

The inventory will include, but will not necessarily be limited to:

- Existing wildlife and vegetation resources and their habitats;
- Known occurrences and locations of SAR and critical habitat listed under Schedule 1 of the *Species at Risk Act* (SARA);
- Traditional Knowledge related to species and their habitats; and
- Any additional environmentally valuable resources that may exist, such as existing or potential wildlife corridors.

The inventory will be completed in collaboration with lessees, CP Holders, community members and other agencies (*e.g.*, Environment and Climate Change Canada, Fraser Valley Conservancy). Information gained during any land use planning and land development permitting and approvals processes should be incorporated into the bio-inventory.

Any data collected will be mapped for visual and future reference. The Leq'á:mel Lands Department will maintain a database of all relevant files (*e.g.,* GIS files), maps, studies, and analytical results.

Information gained during any land use planning and land development permitting and approvals processes (refer to **Section 10.0: Land Development Management**) will be incorporated into the inventory.

Objective 1 (Cont'd)

2) Work with external groups to promote habitat restoration and enhancement

Following the identification of wildlife, vegetation and SAR on Leq'á:mel lands, management strategies will be explored and implemented to facilitate the restoration, enhancement and protection of these resources.

Available Best Management Practices and guidelines will be used to develop management strategies and initiatives, which will be monitored for their success. Leq'á:mel will work with local naturalist and environmental stewardship groups to develop and implement strategies and initiatives. Members of these groups often have a biology, ecology or other relevant background and/or experience and can serve as valuable resources to assist with management efforts for the greatest success. In addition, collaboration with these groups may also serve to foster environmental stewardship among Leq'á:mel community members and build environmental conservation capacity.

Since habitats, species' ranges and wildlife corridors extend beyond the boundaries of Leq'á:mel lands, Leq'á:mel will collaborate with the adjacent communities and the FVRD to ensure that management strategies are harmonized for success. This will also enable the incorporation of Traditional Knowledge into larger, more regional management plans and strategies.

Objective 2:
Continue existing SAR efforts

Ongoing / long-term

Leq'á:mel will continue to work with existing partners on SAR initiatives through the Nicomen Slough Restoration Project.

It is anticipated that future activities will include, but are not limited to the following:

- Continue SAR monitoring; and
- Educational outreach and signage.

Additional opportunities for SAR initiatives will also be explored (*e.g.*, Aboriginal Fund for Species at Risk Program).

Objective 3:
Develop strategies to effectively deal with invasive species

Medium-term

Following the identification of invasive plant and animal species on Leq'á:mel lands, and invasive species management plan should be developed.

The nature of the management strategies will depend on the invasive species present, and where management efforts should be prioritized. The effectiveness of the management strategies will be reviewed and revised as needed based on the outcomes of initial efforts.

External organizations (*e.g.,* Invasive Species Council of BC, Fraser Valley Invasive Plant Council) will be contacted for their expertise to ensure effectiveness of the management plans for invasive species.

Objective 4:
Develop a traditional & medicinal plant inventory

Short-term

A traditional and medicinal plant inventory will be completed using existing traditional knowledge and land use information that is readily available.

Through the completion of the Leq'á:mel Traditional Knowledge/Traditional Land Use and Occupancy Study, a preliminary traditional and medicinal plant inventory that identifies where species were previously or are currently harvested can be created.

The preliminary inventory will be built on through community engagement to identify where traditional and medicinal plants are currently present on Leq'á:mel lands. The inventory will be used to inform future land development activities on Leq'á:mel lands.

4.6 Education and Awareness

Leq'á:mel can work to increase community knowledge and awareness of wildlife, vegetation, SAR and invasive species through various activities, including but not limited to:

- Preparing information for members related to sensitive habitats, SAR, and/or invasive species on or adjacent to Leq'á:mel lands;
- Promoting awareness of Traditional Knowledge and Traditional Land Use through discussions during community events, Elder and youth workshops, and signage;
- Hosting educational and training events, potentially with the support of other interested parties:
    - The Fraser Valley Conservancy hosts workshops and training opportunities upon request to build a strong base of informed "citizen science" in the Fraser Valley
    - The Invasive Species Council of BC offer various educational and outreach programs, including invasive species training and community weed pulls
- Raising awareness to empower community members to identify and report incidences that may impact SAR and their habitats; and
- Training for Leq'á:mel members to work as environmental field assistants during any wildlife, vegetation and/or SAR studies conducted on or adjacent to Leq'á:mel lands.

The BC Ministry of Forests, Lands and Natural Resource Operations started the free of charge mobile Report-a-Weed App which allows users to document and submit invasive plants sites anywhere in BC. Submissions through the app go to one of BC's invasive plant specialists, who will coordinate follow-up activities with the appropriate local authorities.

The more community members are able to identify the requirements for healthy wildlife, vegetation and SAR habitat, the more they will be able to provide feedback to the lands department on areas for restoration and enhancement.

5. SURFACE WATER PROTECTION PLAN

Surface water refers to water found in oceans, lakes, rivers, stream, ponds, and other natural watercourses. As water accumulates on the surface from rain, hail, and melting snow (stormwater), what does not get absorbed into the ground begins to flow (runoff) towards surface waters (*i.e.,* creeks, rivers, lakes etc.) or installed storm sewer systems. Regionally, much of the water found in the creeks and streams originates in the upstream mountainous areas and flows northward towards where it joins in with local surface runoff from the many lowland water courses and drainage routes before draining to the Fraser River.

5.1 Key Features

Key water features on and/or adjacent to Leq'á:mel lands include:

- Nicomen Slough
- Deroche Creek
- Quaamich Slough
- Wilson Slough
- Zaitscullachan Slough
- Siddle Creek
- Fraser River
- Vedder River
- Sumas River

Leq'á:mel lands also include several wetlands:

- Aylechootlook; and
- Lackaway.

Refer to **Part 1 of the EMP** for background information related to surface water features and issues on Leq'á:mel lands.

5.2 Key Threats

- Surface water can be negatively impacted through contamination from natural sources (*e.g.*, bacteria, viruses) and/or human sources (*e.g.*, inputs of hazardous wastes from residential, agricultural, industrial, or commercial operations).
- Increased run-off as a result of developed surfaces (*e.g.*, roadways, rooftops, yards, and agricultural lands) where there is a lack of natural vegetation tend to result in a more rapid movement of water, which can lead to a combination of flooding, erosion and degradation of receiving creeks and waterways.
- Surface water can also accumulate a large amount of nutrients from agricultural operations and activities (*i.e.*, fertilizer application and runoff), which promotes the growth of algae. Large amounts of algae may, in turn, impact the amount of oxygen available for and the health of fish and other aquatic species. Surface water can also become contaminated by pesticides transported through surface runoff.
- Sedimentation, or the input of soil material into surface waters from land disturbance activities (*e.g.*, construction), can also negatively impact water quality and aquatic habitat. Without effective control measures, sedimentation can clog stream channels which can further lead to bank erosion, flooding, destruction of wetlands, and degradation of drinking water quality.

5.3 Goals & Objectives

Goal

- Restore function & quality of surface waters on and adjacent to Leq'á:mel lands

Objectives
(in priority order and with timelines)

- Develop and implement a law that restricts surface water pollution and holds polluters accountable (**short-term**)
- Incorporate surface water impact considerations in the referrals process (**short-term**)
- Continue annual ditch inspection and cleaning activities on Leq'á:mel lands (**on-going / long-term**)
- Continue restoration efforts, including the Nicomen Slough Restoration Project (**on-going / long-term**)

5.4 Management Framework

Relevant Legislation*

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Safe Drinking Water for First Nations Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Management Act*
  - Contaminated Sites Regulation
  - Hazardous Waste Regulation
  - Agricultural Waste Control Regulation
  - Spill Reporting Regulation
  - Waste Discharge Regulation
- *Water Sustainability Act*
- *Water Protection Act*
- *Drinking Water Protection Act*
  - Drinking Water Protection Regulation

Refer to Section 5.0 in Part 1 of the EMP for more information

Best Management Practices & Guidelines

The Canadian Council of Minister of the Environment (CCME) and the BC Ministry of Environment have both developed a series of **water quality guidelines** that act as benchmarks to identify the safe levels of substances for the protection of water and aquatic life, including:

- Canadian Water Quality Guidelines for the Protection of Aquatic Life
- Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses
- BC Guidelines for Aquatic Life, Wildlife & Agriculture

These guidelines should be used during any water quality monitoring and assessment on Leq'á:mel lands to ensure legislative compliance.

In addition to monitoring and managing water quality, **key strategies** for protecting surface waters include:

- Erosion and sediment control during any land disturbance activities
- Managing stormwater, especially from roads given the potential for grit, sediment and petrochemicals to be washed off and enter watercourses
- Properly disposing of solid, liquid and hazardous waste materials – refer to **Section 6.0: Solid Waste Management** and **Section 11.0: Hazardous Waste & Fuels Management**
- Limiting impervious surfaces (*e.g.*, pavement, cement)
- Public education and awareness programs

Sedimentation can be avoided, or at least minimized, by employing erosion and sediment control measures during any land development activities. The BC Ministry of Environment has developed Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia, which includes Best Management Practices (BMPs) for ESC (refer to page 2-49 in the document). Some of the BMPs identified include:

- Identify natural waterbodies that may be impacted
- Develop an Erosion and Sediment Control Plan for all construction activities
- Do not stockpile/store soils near surface waters
- Retain existing vegetation/ground cover where possible to limit the exposure of soils and use effective erosion prevention measures where this is not possible
- Manage sediment using silt fencing, fabric bags, geotextile, etc.
- Re-vegetate exposed soils as quickly as possible using indigenous plant species
- Monitor and assess for signs of erosion or sedimentation

Best Management Practices & Guidelines (Cont'd)

The goal of **managing stormwater** should be to reduce or eliminate contaminants collected by stormwater as it moves into stream, rivers and larger bodies of water.

Best management practices for stormwater management include:

- Use stormwater recapture techniques
- Retain natural water flows
- Minimize the amount of impervious surfaces (*e.g.*, pavement, cement)
- Create naturalized retention ponds or vegetation swales
- Protect and enhance existing wetlands and riparian areas

The United States Environmental Protection Agency has a menu of stormwater best management practices and information to help households and construction sites to reduce stormwater pollution.

The City of Chilliwack developed the Policy and Design Criteria Manual for Surface Water Management in 2002 to provide land developers with specific directions when undertaking the stormwater component of development designs, and to provide a framework to guide the development of drainage plans.

Oil-water separators used in commercial (*e.g.*, gas stations) and industrial operations collect potentially contaminated runoff and prevent it from contaminating nearby surface waters. However, pollution of surface waters may occur if these units are not properly and regularly maintained and may result in costly penalties. Best management practices for oil-water separators include:

- Regular inspection of oil-water separator contents
- Regular cleaning and removal of sludge build-up
- Semi-annual checks to confirm that all valves are properly functioning
- Regular (annual or semi-annual) sampling of discharge water

5.5 Management Strategies

Objective 1:
Develop and implement a surface water protection law

Short-term

Leq'á:mel will develop and implement a law or regulation that provides for surface water protection on Leq'á:mel lands.

In order to minimize adverse impacts to surface waters on and adjacent to Leq'á:mel lands, pollution prevention and mitigation measures must be employed on Leq'á:mel lands. This will be made a requirement through the development of a Surface Water Protection law, or

Objective 1 (Cont'd)

regulation as part of an overarching environmental management law, that will include:

- Prohibition of surface water pollution; and
- Penalties for polluters.

Leq'á:mel's Zoning Law already includes a requirement for 30 m setbacks from fish-bearing watercourses. This requirement will be put enforced through the implementation of a land development permitting process that incorporates considerations for surface water protection – refer to Section 10.0: Land Development Management Plan.

Objective 2:
Incorporate surface water impact considerations in the referrals process

Short-term

Leq'á:mel will develop and implement an internal process and protocol to responsibly respond to referrals for resource development within Leq'á:mel traditional territory.

The internal referrals process and protocol will be developed such that potential for surface water impacts associated with proposed developments in Leq'á:mel traditional territory are meaningfully assessed and inform Leq'á:mel decision-making processes. For example, Leq'á:mel may establish a requirement for mandatory debris traps for forestry operations occurring upstream. Refer to Section 9.0: Natural Resource Management for more details.

Objective 3:
Continue annual ditch inspection and cleaning activities on Leq'á:mel lands

Ongoing / Long-term

Leq'á:mel will implement best management practices during all ditch cleaning and maintenance activities.

Leq'á:mel recently approved a Maintenance Management Plan that includes specific activities related to ditch inspection & cleaning. Moving forward, this plan will be used for bi-annual ditch maintenance. Best management practices for ditch cleaning and maintenance that will be employed during all ditch cleaning activities include, but are not limited to:

- Salvage fish and any other wildlife prior to activities
- Time any in-stream works based on appropriate regional timing windows
- Isolate the work area from surface waters
- Retain existing vegetation/ground cover where possible to limit the exposure of soils and use effective erosion prevention measures where this is not possible
- Implement proper erosion and sediment control measures
- Conduct environmental monitoring during all in-stream activities
- Manage sediment using silt fencing, fabric bags, geotextile, etc.
- Re-vegetate exposed soils as quickly as possible using indigenous plant species
- Monitor and assess for signs of erosion or sedimentation

Objective 4:
Continue restoration efforts, including the Nicomen Slough Restoration Project

Ongoing / long-term

The following strategies will be employed to support this objective:

1) Continue to work with existing partners on the Nicomen Slough restoration initiative.

It is anticipated that future activities will include, but are not limited to the following:

- Continue water quality monitoring;
- Large-scale restoration/enhancement; and
- Educational outreach and signage.

2) Conduct a surface water baseline inventory

The Lands Department will conduct a baseline inventory of surface water resources on Leq'á:mel lands. The purpose of the baseline inventory is to:

- Document environmentally valuable surface waters and associated resources (*e.g.*, riparian areas) to plan for their protection;
- Establish a benchmark (*i.e.,* point of reference) before any further changes to surface water resources against which future changes (positive or negative) can be compared to;
- Develop a database of all potential sources of surface water contamination on Leq'á:mel lands to effectively manage risks; and
- Assist with determining where management efforts should be placed or how they should be prioritized.

All potential sources of contamination should be listed and mapped, and classified based on their associated risk to surface water quality (high, medium, and low).

This inventory will be completed collaboratively with lessees, CP Holders, community members and other agencies (*e.g.*, Fisheries and Oceans Canada, Fraser Valley Watershed Coalition), and through the review of previous studies and reports (*e.g.*, ESAs).

Any data collected will be mapped for visual and future reference. The Lands Department will maintain a database of all relevant files (*e.g.,* GIS files), maps, studies, and analytical results.

Information gained during any land use planning and land development permitting and approvals processes (refer to Section 10.0: Land Development Management) will be incorporated into the surface water inventory.

3) Partner with other agencies for stormwater management

Leq'á:mel will consider partnering or working collaboratively with other agencies to develop an integrated stormwater management plan. Since stormwater issues and their

Objective 4 (Cont'd)

management extend beyond the boundaries of Leq'á:mel lands, collaboration with the District of Mission and/or the Fraser Valley Regional District will be a focus to ensure that management strategies are harmonized for the greatest success. Other organizations, such as the Fraser Valley Watershed Coalition, may be consulted to assist with stormwater planning and management.

5.6 Education and Awareness

The Leq'á:mel Lands Department will seek out opportunities for Leq'á:mel to participate in and/or align with existing watershed initiatives and committees to:

- Increase community capacity to promote and contribute to watershed management and protection;
- Be in a better position to effect change in the best interests of the community when activities outside the jurisdiction of Leq'á:mel First Nation have the potential to negatively impact surface waters on Leq'á:mel lands; and
- Draw upon these resources and efforts to assist with the baseline overview, habitat restoration and/or monitoring efforts.

The Fraser Valley Watersheds Program (FVWP) is a partnership between the Fraser Valley Regional District and the Fraser Valley Watershed Coalition (FVWC) with additional support provided by Fisheries and Oceans Canada. The primary objective of the FVWP is to improve the health of watersheds in the Fraser Valley. This is achieved through watershed planning, enhancement and restoration projects, environmental monitoring, and community stewardship, education and awareness. Both the FVWP and the FVWC have a history of partnering with other groups, including First Nations (*e.g.*, Stó:lō Tribal Council, Cheam First Nation, Ts'elxwéyeqw Tribe), to provide training, equipment, and work opportunities.

6. SOLID WASTE MANAGEMENT PLAN

Solid waste refers to non-hazardous trash or garbage that is produced by residential, commercial, institutional, demolition, land clearing, or construction sources. It includes biodegradable or compostable (*e.g.*, food scraps, yard and garden waste) and recyclable (*e.g.*, paper, plastic, glass) materials. Solid waste management refers to the collection, transportation, processing or disposal, managing and monitoring of waste materials to reduce or minimize impacts to human health and the surrounding environment as a result of contaminant leaching (*i.e.*, movement into areas via water).

6.1 Key Features

Leq'á:mel operates a **transfer station** on the northeastern portion Skweahm, adjacent to Quaamich Slough.

Refer to **Part 1 of the EMP** for background information related to solid waste issues and management on Leq'á:mel lands.

6.2 Key Threats

- More and more of our everyday products contain various chemicals, many of which are toxic, and as a result the risks associated with solid waste are increasing. Waste materials introduced into the environment through unauthorized burning, dumping, landfilling, burying, littering and storage can have adverse human health (*e.g.,* water contamination) and environmental (*e.g.,* stress on vegetation) impacts.
- If not disposed of and managed properly, solid waste can:
    - Be ingested by and cause harm to animals;
    - Accumulate in creeks and rivers and cause harm to fish and other aquatic species;
    - Lead to contaminants leaching into drinking water sources, surface waters, and soil;
    - Release contaminants in the air when burned; and
    - Negatively impact human health.

6.3 Goals & Objectives

Goal

- Ensure long term, effective solid waste management on Leq'á:mel lands

Objectives
(in priority order and with timelines)

- Develop and implement laws to support effective solid waste management (*e.g.* open air burning law, community quality law to restrict storage of waste on properties) (**short-term**)
- Implement enforcement tools to address non-compliance and to deal with existing issues (**short-term**)

Objectives (Cont'd)

- Increase diversion (waste reduction through recycling and compost) at the transfer station by ensuring that adequate infrastructure exists at the transfer station for current and future needs (**medium-term**)
- Implement a household organics/composting program (**short-term**)

6.4 Management Framework

Relevant Legislation*

Federal – including but not limited to:

- *Indian Act*
  - Indian Reserve Waste Disposal Regulation
- *Canadian Environmental Protection Act*
- *Migratory Birds Convention Act*

Provincial – including but not limited to:

- *Environmental Management Act*
  - Open Burning Smoke Control Regulation
  - Waste Discharge Regulation
  - Recycling Regulation
- *Public Health Act*
  - Health Hazards Regulation

Refer to Section 5.0 in Part 1 of the EMP for more information

Municipal policies and bylaws can contain information on material bans (*i.e.*, materials which are prohibited or banned from disposal at municipal landfills). For example, the Mission Landfill has a 50% surcharge on loads containing banned materials, which include recyclable materials and yard trimmings. Since waste generated on Leq'á:mel lands goes to the Leq'á:mel transfer station and is then transported off-site for disposal, banned materials should NOT be included in the garbage. Inclusion of these banned materials in the waste stream can result in fines and charges, which would be levied on the collection contractor and likely passed on to Leq'á:mel.

Best Management Practices & Guidelines

Integrated Solid Waste Management (ISWM) is a comprehensive waste prevention, recycling, composting, and disposal approach increasingly used by communities. Through the evaluation of local needs and conditions, appropriate waste management activities can be combined to minimize, recycle, and manage solid waste in ways that most effectively protect human health and the environment. The major ISWM activities include waste prevention, recycling and composting, and combustion and disposal in properly designed, constructed, and managed landfills.

Best Management Practices & Guidelines (Cont'd)

The RCBC Zero Waste Hierarchy is a nationally and internationally accepted guide for prioritizing waste management practices with the objective of achieving optimal environmental outcomes. Generally referred to as the six R's of waste management, the hierarchy sets out the preferred order of waste management practices, from most to least preferred:

- **Reconsider:** Re-evaluate current lifestyles and the way in which products are designed and produced in an effort to minimize/reduce/eliminate waste
- **Reduce:** Minimize the amount of material and energy used in a product's life cycle
- **Reuse:** Use an existing product (that would otherwise become waste) for another purpose, without processing it
- **Recycle:** Remove a product from the waste stream before it is disposed and to process it into a new product
- **Recover:** Reclaim a material or product destined for the landfill for an alternate use
- **Retain:** Responsibly manage any remaining waste that cannot be reduced, reused, recycled or recovered, preferably using a triple bottom line approach

Additional best practices for solid waste management include, but are not limited to:

- Set diversion and disposal targets for solid waste (*e.g.*, recycling diversion targets)
- Promote waste reduction through public education and outreach
- Work with private waste management companies and the community to expand and enhance waste collection services
- Offer enhanced recycling services – refer to strategies associated with Objective 2
- Develop an illegal dumping program

The Mission Recycling Depot Drop-off Guide is a downloadable, itemized list of accepted recyclable items.

The City of Abbotsford offers an online Waste Wizard that provides information on how to properly dispose of waste materials in the region – individual items can be searched and instructions for disposal are provided.

The RCBC website offers a Recyclepedia, a searchable online database that provides answers to the most frequently asked recycling questions.

The Fraser Valley Regional District's (FVRD) Solid Waste Management Plan (2015) contains detailed information on waste policies and goals, and how waste materials will be managed in the region. The Plan adopts the Zero Waste Hierarchy and aims to increase waste diversion through composting, recycling, and education and outreach.

6.5 Management Strategies

Objective 1:
Develop and implement laws to support effective solid waste management

Short-term

Leq'á:mel will develop and implement laws or regulations to address existing issues related to solid waste management and prevent future ones.

Currently, the burning of any household waste is prohibited under the Indian Reserve Waste Disposal Regulations of the *Indian Act*. However, this regulation has not been enforced by INAC, and a plan was put forward in 2016 to amend the regulations to no longer apply to First Nations operating under Land Code and is in the works. In response, Leq'á:mel will proactively develop solid waste-related legislation based on the priorities and feedback received from community members.

The existing solid waste issues present on Leq'á:mel lands will inform the development of a solid waste management law, or regulations developed as part of an overarching environmental management law. The law or regulations will include prohibitions for the following:

- Open burning of waste
- Burying of waste
- Illegal dumping and littering
- Storage of waste and unsightly derelict materials

Objective 2:
Implement enforcement tools to address non-compliance

Short-term

In addition to enforcement provisions for the law/regulations described above, Leq'á:mel will explore additional strategies to support effective solid waste management.

Additional strategies that will be considered include:

- Access prevention measures – fencing, placement of large stones at known dumping hotspots
- Erect signage such as "Protection of our lands is important to us; please don't litter / dump waste"
- Reporting and documenting of illegal dumping incidents (*e.g.*, date, time, location, materials left, action taken) by the Public Works and Lands Departments
- Organize community clean-up days
- Use the FVRD's Illegal Dumping Hotline 1-800-655-DUMP (3867) to report illegal dumping adjacent to Leq'á:mel lands

Objective 3:

Increase diversion at the transfer station by ensuring that adequate infrastructure exists for current and future needs

Medium-term

The following strategies will be employed to support this objective:

1) Complete the Transfer Station Expansion outlined in Leq'á:mel's Strategic Plan (2017-2020).

The activities as part of this expansion include:

- Installing concrete frames to section off areas;
- Developing and installing signage for yard waste;
- Reviewing and updating fees, consistent with the local area; and
- Developing a sustainable, detailed budget to support required staffing.

2) Work with external organizations to increase diversion at the Transfer Station.

Multi-Material BC (MMBC) is a not-for-profit organization that manages recycling programs in BC and offers financial incentives to First Nations communities to launch new or enhance existing recycling curbside of depot drop-off programs. Many communities have already received financial incentives from MMBC to enhance recycling and diversion.

3) Engage in further discussions with the FVRD in terms of the potential role of Leq'á:mel's Transfer Station in regional waste management.

The FVRD has plans to shut down an existing regional transfer station and there may be an opportunity for Leq'á:mel's Transfer Station to play a more regional role in terms of solid waste management. Leq'á:mel will meet with the FVRD to explore potential opportunities.

4) Complete a Solid Waste Feasibility Study to identify future infrastructure needs at the Transfer Station.

A first step in any waste feasibility is to gain an understanding of current or existing waste quantities, sources, and management needs. This is commonly achieved through a Waste Composition Study; however, these studies can be costly for communities with limited own-source revenues. Another option to support this in lieu of waste composition study is to gather available data already recorded at the Transfer Station in terms of volume and nature of waste received, as well as data from the FVRD related to current general waste generation and diversion rates from the region. This information, in combination with community population and development projections, can then be used for future projections in terms of future infrastructure needs at the Transfer Station.

As part of the waste feasibility study, different scenarios will be developed in terms of infrastructure and expansion and evaluated to enable Leq'á:mel to identify future needs while considering realistic human resources and financial capacity and/or constraints.

Objective 3 (Cont'd)

If there is an opportunity for Leq'á:mel's Transfer Station to play a more regional role in terms of solid waste management, as determined through the previous strategy, this will be an important consideration in the feasibility study. There may also be an opportunity for funding to support for the waste feasibility study.

Objective 4:
Implement a household organics/ composting program

Short-term

Leq'á:mel will explore the potential to expand the yard waste composting program to include a household organics program.

A first step to determining the potential for a community-wide household organics program is to implement a pilot composting program with several households volunteering. A small bear-proof collection unit could be placed at the transfer station at the start. Food waste can be dropped off at the Mission Landfill free of charge. A pilot program with several households allows for evaluation and troubleshooting of issues prior to implementation on a larger scale.

Depending on the outcome of the pilot program, Leq'á:mel may consider expanding the program to a community-wide scale. A composting/organic waste feasibility study may be undertaken to better understand:

- The existing capacity of the transfer station to support a community-wide organics program;
- Additional infrastructure requirements and development options to successfully implement the program; and
- Additional human capacity requirements to manage the program.

6.6 Education and Awareness

Leq'á:mel will work to develop community waste management awareness through education and outreach programs including, but not limited to:

- Zero waste hierarchy;
- The environmental and health impacts of improperly managed solid waste;
- Responsible management of waste materials;
- Working with local businesses to provide education and outreach in the commercial/industrial sector; and
- Recycling and composting community workshops.

The BC First Nations Health Authority provides public education and outreach materials on the proper disposal of waste and the protection of health and the environment.

7. CULTURAL RESOURCES PROTECTION PLAN

Culture refers to learned, collective human behaviour that connects, and may even define, a community. It is defined by a variety of shared characteristics, including language, social structure, practices, beliefs, perceptions, values, knowledge, music, and arts. Heritage resources refer to objects, sites, or locations of traditional Leq'á:mel practices that are of historical, cultural, or archaeological significance to the community.

There is generally high potential for heritage resources and significant archaeological sites to be present on Leq'á:mel lands given the rich cultural history of the area. Ensuring cultural awareness among youth and the larger community and maintaining culture for future generations is also an important part of building community belonging and pride.

7.1 Key Features

Key cultural resources on or adjacent to Leq'á:mel lands include:

- Provincially listed heritage site DhRm-2 on Skweahm
- Provincially listed heritage site DhRm-3 northeast of Skweahm
- Provincially listed heritage site DhRm-4 on Lakahahmen
- Sacred grounds on the northwest corner of Lakahahmen
- Lakway Cemetery
- Sumas Cemetery

Refer to **Part 1 of the EMP** for background information related to cultural and heritage resources on Leq'á:mel lands.

7.2 Key Threats

- Changes in the traditional lifestyles and cultural practices among First Nations have had a large impact on cultural resources. A lack of community cultural programming can threaten cultural revival and maintenance efforts.
- Impacts to surface water resources and fisheries can, in turn, impact cultural practices given that the preservation of these resources on Leq'á:mel lands is intertwined with the preservation of community culture.
- Land development activities may impact heritage resources, especially during the construction phase, if a heritage or archaeological resources impact assessment is not conducted prior to land disturbance.
- Changes in natural processes as a result of significant land changes (*e.g.*, urbanization and increased surface water runoff) may increase the rates of erosion at certain sites, leading to damage of heritage resources.

7.3 Goals & Objectives

Goal

- Protect and honour cultural resources, including heritage resources

Objectives
(in priority order and with timelines)

- Develop a Leq'á:mel-specific cultural heritage policy and protocols to guide development on Leq'á:mel lands (**medium-term**)
- Ensure Leq'á:mel is notified when an archaeological artefact is found within the Leq'á:mel traditional territory (**medium-term**)
- Identify opportunities for cultural resources protection (**ongoing / long-term**)

7.4 Management Framework

Relevant Legislation*

Federal – including but not limited to:

- *Canadian Environmental Assessment Act*
- *Cultural Property Export and Import Act*

Provincial – including but not limited to:

- *Environmental Assessment Act*
- *Heritage Conservation Act*

Refer to Section 5.0 in Part 1 of the EMP for more information

Best Management Practices & Guidelines

As described in the Stó:lō Heritage Policy (2003), Stó:lō Nation maintains jurisdiction, on behalf of the broader Halq'eméylem-speaking community, over Stó:lō heritage sites and objects not otherwise linked directly to a family or individual. The Policy includes a framework of management measures and options for Stó:lō heritage sites, defined management processes for potential heritage sites, and an investigation permitting process. The purpose of the Stó:lō Heritage Policy is to:

- Protect, preserve and manage Stó:lō heritage – in all its forms – in a manner consistent with Stó:lō values, beliefs and traditions;
- Cooperate with other organizations in the protection, preservation and management of Stó:lō heritage;
- Protect and preserve Stó:lō religious freedom in all its expressions;
- Maintain the integrity of the Stó:lō spiritual world;
- Maintain healthy relations between the contemporary Stó:lō community and Stó:lō ancestors – past, present and future;

Best Management Practices & Guidelines (Cont'd)

- Maintain the integrity of Stó:lō history and heritage through the respectful treatment of Stó:lō knowledge, heritage objects and sites;
- Advance knowledge and understanding of Stó:lō heritage;
- Maintain continuity in Stó:lō heritage and the practice of cultural traditions in forms both old and new; and
- Advance Stó:lō cultural revival.

It is best practice for an Archaeological Overview Assessments (AOA) to be conducted prior to any land disturbance activities that have the potential to disturb archaeological sites. If the AOA indicates that a site may be present, an Archaeological Impact Assessment (AIA) should be conducted. The Stó:lō Heritage Policy includes requirement for AOAs and AIAs.

It is important to develop and maintain an ongoing working relationship with archaeologists who work within a First Nation's traditional territory, and inform any new archaeologists or developers of relevant heritage policies and/or protocols.

7.5 Management Strategies

Objective 1:
Develop a community-specific cultural heritage policy and protocols to guide development on Leq'á:mel lands

Medium-term

Leq'á:mel will develop a Leq'á:mel-specific cultural heritage policy that considers the values and needs of the community.

Previous experience implementing the Stó:lō Heritage Policy on Leq'á:mel lands has highlighted some potential issues in terms of applicability. Specifically, values and perspectives specific to the Leq'á:mel people are not necessarily encompassed by the policy. As a result, a Leq'á:mel-specific cultural heritage policy that considers the values, perspectives and needs of the community will be developed.

The Lands Department will engage and work with Leq'á:mel leadership and members to develop the Leq'á:mel Cultural Heritage Policy. A Heritage Policy Working Group with representatives from Chief and Council and the Family Advisory Committee may be developed to inform and guide the development of the policy document, particularly in terms of the protocols to be followed if archaeological/cultural heritage resources are identified.

The Leq'á:mel Cultural Heritage Policy will incorporate important cultural heritage protection measures. Protection measures in the Stó:lō Heritage Policy that will be incorporated include:

- Impacts to cultural heritage resources must be considered, assessed, and mitigated from all development-related disturbances and impacts;
- Heritage Resource (HR) studies must be undertaken as either Overview Assessments and/or Impact Assessments; and

Objective 1 (Cont'd)

- All HR studies must be conducted by researchers with an appropriate level of experience and training.

The Policy will also include protocols for 'chance finds' of cultural heritage resources on Leq'á:mel lands during any land disturbance activities. A preliminary chance find protocol, based on best management practices, is provided in **EOP 6: Cultural Resources Procedures in Part 3 of the EMP**.

There are resources available to support Leq'á:mel in the development of a community specific heritage policy. The Union of BC Indian Chiefs developed the First Nations Heritage Planning Toolkit (2013) with the intention of supporting First Nations in the development of heritage-related capacity and their own heritage conservation plans and/or policies. The Toolkit provides:

- Detailed information regarding what should be included in a heritage policy;
- The steps involved for archaeological permitting and referral processes required by the province's Archaeology Branch (the implementer of the Heritage Conservation Act) for First Nations cultural heritage resources encountered on provincial or private land; and
- Various templates, including a heritage policy.

During the land development process, mechanisms will be put in place to promote, endorse, and enforce the Leq'á:mel Cultural Heritage Policy. This will be facilitated by providing all land developers (member and non-member) with the Policy as early as possible in the development process and referring them to the Leq'á:mel Lands Department. The Policy will also be enforced through the implementation of a land development permitting process that incorporates considerations for cultural heritage protection – refer to **Section 10.0: Land Development Management Plan**.

Objective 2:
Ensure Leq'á:mel is notified if an archaeological artefact is found within the traditional territory

Medium-term

The Leq'á:mel Cultural Heritage Policy will include a policy statement that Leq'á:mel must be notified when an archaeological artefact is found within Leq'á:mel traditional territory.

Given the role that the Stó:lō Research and Resource Management Centre (SRRMC) has in implementing the Stó:lō Heritage Policy within Stó:lō traditional territory, which encompasses Leq'á:mel's traditional territory, the SRRMC will be provided with the Leq'á:mel Cultural Heritage Policy and informed of this specific requirement.

Objective 3:
Identify opportunities for cultural resources protection

Ongoing/long-term

In addition to the existing efforts to revive Leq'á:mel culture and language, as outlined in the Strategic Plan (2017-2020), Leq'á:mel will identify additional opportunities to protect cultural resources that may be available through external sources.

Leq'á:mel will work with local, provincial and national organizations that offer support to First Nation communities in terms of the preservation of culture and heritage through grants, funding and in-kind support (*i.e.*, labour, research, etc.). Potential opportunities include:

- The First Peoples' Cultural Foundation supports the revitalization of Aboriginal language, arts and culture in British Columbia through funding for arts, cultural and language programs;
- The Canada Council for the Arts offers funding for individual artists, groups and arts organizations to engage in projects and activities. The funding model includes Creating, Knowing and Sharing: The Arts and Cultures of First Nations, Inuit and Métis Peoples. This stream funds projects that support the creative capacity and professional development of Aboriginal artists and arts organizations and facilitate the reclamation, retention, renewal and transmission of Aboriginal cultural knowledge and creative practice; and
- The BC Heritage Legacy Fund provides grants to First Nations (among others) for heritage conservation projects.

The Government of Canada also offers a list of potential funding opportunities that may be of relevance to Leq'á:mel.

To maximize the resources available, Leq'á:mel will also continuously develop and strengthen relationships with other agencies responsible for the protection and enhancement of cultural values and heritage resources (*e.g.*, SRRMC).

7.6 Education and Awareness

Leq'á:mel will work to develop and foster cultural awareness and community pride through education and training. This may include but is not limited to:

- Signage of key community features (*e.g.*, creeks, community buildings) that incorporates Halq'eméylem;
- Workshops for Elders to share their knowledge with youth and others in the community;
- Working with local environmental groups to include indigenous species (*e.g.*, medicinal plants) into environmental restoration projects;
- Promoting the preservation and enhancement of culturally significant areas; and
- Hosting cultural celebrations that are open to the greater Stó:lō Nation, Mission and Abbotsford communities.

8. SOIL & FILL MANAGEMENT PLAN

Soil refers to the mixture of organic matter, rock matter, minerals, as well as various organisms, in the upper layer of earth that support plant life. Fill refers to soil or other material that has been removed from one area and deposited in another area, usually to fill depressions and holes to make an area suitable for development (land filling).

Refer to **Part 1 of the EMP** for background information related to soil and fill on Leq'á:mel lands.

8.1 Key Threats

- Soil can become contaminated in many ways but the most common include: fuel leaks/spills; chemicals released from of industrial and agricultural activities; unregulated use of fills that are contaminated; and the deposit of contaminated soil from other sites or areas (*i.e.*, contaminated soil being brought onto Leq'á:mel lands).
- Depending on the level of contamination, toxic substances may build up in the soil and or/groundwater, or run-off into surface waters. In addition to the risks to human and environmental health, the costs of remediation or clean-up of contaminated soils or water can run very high.

8.2 Goals & Objectives

Goal

- Prevent soil contamination from occurring on Leq'á:mel lands

Objectives
(in priority order and with timelines)

- Understand risks and liability associated with contaminated soils and fill on CP-held lands (**short-term**)
- Develop a soil and fill law to prevent contaminated soil and fill from being brought onto Leq'á:mel lands (**short-term**)
- Address outstanding soil contamination issues on Leq'á:mel lands (**medium-term**)

8.3 Management Framework

Relevant Legislation

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Transportation of Dangerous Goods Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*

Relevant Legislation* (Cont'd)

Provincial – including but not limited to:

- *Environmental Management Act*
  - Contaminated Sites Regulation
- *Transportation of Dangerous Goods Act*

Refer to Section 5.0 in Part 1 of the EMP for more information

Environment and Climate Change Canada's Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations establish requirements for storage tank systems under federal jurisdiction. The regulation apply to storage tanks systems located on federal or Aboriginal land including systems operated by band councils or owned by private businesses on Aboriginal land.

Best Management Practices & Guidelines

The use of laws and a permitting system is most commonly used for contaminated soil and fill prevention and management. For example, the District of Mission has implemented a Soil Removal and Deposition Bylaw to regulate the removal and deposition of soil within the district's limits. As a condition of this bylaw, a permit must be obtained in order to remove or deposit soil from one area to another.

Before soil is received from a site, the following best management practices should be followed:

- Find out the exact address where the soil comes from
- Use Google maps or an equivalent to check that the location and use of the source site is consistent with the information provided
- Many soil importers will provide documents that they believe can be used to assess environmental soil quality, such as geotechnical reports, which do not – when in doubt, have an environmental consultant review the material
- Advise soil importers that random inspections and soil testing will be completed to assess soil quality and unsuitable material will need to be removed at their cost
- Get a contract or agreement with the soil importer
- Make the company delivering the soil sign off that the soil is not contaminated
- Clearly identify that the contractor depositing the soil at the fill site will be responsible for the removal of any soil subsequently found to be contaminated or in violation of the above contract clause
- Implement a system with the source site so that each truck leaving the source site has a soil slip with an unique permit number that can be used by you and your site operators to confirm the origin of the soil

Best Management Practices & Guidelines (Cont'd)

Fuel leaks and spills are a common source of soil contamination. **During any excavation work, contractors must notify the responsible authority if the following is observed:**

- Unusual odour that may indicate the presence of contaminants (*e.g.*, gas or oil).
- Stained soils which are darker and may have a "wet" appearance typically indicate the presence of a spill area. Contaminated soils may also have a distinct oily feel. Typically, staining (contamination) is accompanied by an odour.
- If staining, odour, buried debris, or hydrocarbon sheen is observed associated with infiltrating groundwater, the contractor must immediately stop work and advise of the suspected contamination.

Environment and Climate Change Canada provides Fact Sheets & Tank Tips, including a Storage Tank Regulations Checklist for all systems (existing and new), new systems (installed after June 12, 2008, or planned for the future), and existing systems (installed before June 12, 2008).

8.4 Management Strategies

Objective 1:
Understand risks and liability associated with contaminated soils and fill on CP-held lands

Short-term

Similar to the Strategy 1 under Section 2.0: Groundwater Protection, the following strategies will be employed to support this objective:

1) Connect with Lands Advisory Board Resource Centre to explore liability related to environmental issues.
2) Connect with Leq'á:mel's legal team to discuss liability related to existing issues on Leq'á:mel lands, as identified in the Phased ESAs previously conducted.
3) Communicate liability and risks with CP Holders and lessees on Leq'á:mel lands to ensure everyone is aware and to support minimizing further impacts to soil. This can be done through a community newsletter and the use of online engagement tools.

Objective 2:
Develop a soil and fill law

Short-term

Leq'á:mel will develop and implement a law to prevent contaminated soil or fill from being brought onto Leq'á:mel lands.

Leq'á:mel will develop and implement a Soil and Fill Law to effectively control and monitor the movement of soil on and off Leq'á:mel lands to minimize the potential for land contamination. The law will apply to anyone depositing or removing soil on Leq'á:mel lands, including members, non-member residents, contractors, and businesses.

Objective 2 (Cont'd)

Based on existing soil and fills laws in place in other Stó:lō communities, soil and/or fill deposit, removal or transfer must:

- Comply with the standards set out in the BC *Environmental Management Act* and in particular the standards of the Contaminated Sites Regulation;
- Not result in hazard to public safety, persons or animals;
- Not contaminate any land or water features, including surface water and groundwater sources; and
- Not damage or impede on existing roads, right-of-ways, easements, utilities structures, vegetation or landscaping.

A development permitting process is generally included in this type of law to:

- Specify requirements or conditions for the transport, removal, and/or deposit of soil and fill; and
- Ensure compliance with relevant legislation and standards.

Objective 3:
Address outstanding soil contamination issues on Leq'á:mel lands

Medium-term

Leq'á:mel will work with INAC and CP Holders to address outstanding soil contamination issues on Leq'á:mel lands.

As indicated in the previously conducted Phase I, II, and III ESAs, there are several outstanding soil contamination issues related to metals and other pollutants that were identified:

- One of these sites was classified as Not a Priority for Action;
- Two of these sites were classified as Low Priority for Action and have not been addressed; and
- The final site was classified as Moderate Priority for Action but has not been addressed due to lack of land access by CP Holder.

Leq'á:mel will connect with INAC to determine if funding may still be available to address these outstanding issues. In addition, access to the affected areas will need to be provided by the CP Holders. This will require Leq'á:mel to work with the CP Holders in understanding the risks and liabilities associated with inaction.

8.5 Education and Awareness

Leq'á:mel will work to develop community awareness of soil and fill contamination and the Soil and Fill Law through education and outreach programs.

9. NATURAL RESOURCE DEVELOPMENT MANAGEMENT PLAN

Natural resources refer to resources that exist in the natural environment, including water, land and minerals, vegetation and wildlife. They can be classified as:

- **Renewable** – Resources that are replenished naturally (*e.g.*, water, vegetation, wildlife)
- **Non-renewable** – Includes resources that either form slowly or do not naturally form in the environment (*e.g.*, minerals), and resources that are consumed at faster rates than they are replenished (*e.g.*, fossil fuels)

Natural resource development refers to extracting the resources for human use and includes forestry, mining of minerals and gravel, agriculture, oil and gas drilling, hunting and trapping. Natural resource management refers to managing the development of natural resources in consideration of impacts on the humans and the environment, and present and future generations.

9.1 Key Features

Agricultural activities are currently undertaken on the following parcels:

- Zaitscullachan (entire parcel)
- Lakahahmen (central and southern portion)
- Holachten (easternmost portion, east of the rail line)
- Skweahm (several portions)
- Papekwatchin (northern portion)

Large-scale natural resource development occurring in Leq'á:mel traditional territory and adjacent to Leq'á:mel lands generally includes forestry, gravel mining and agriculture.

Refer to **Part 1 of the EMP** for background information related natural resource development in Leq'á:mel traditional territory.

9.2 Key Threats

- Natural resource development activities (*e.g.*, vegetation clearing, excavation) and associated infrastructure (*e.g.*, roads, transmission lines) can impact:
    - Wildlife through habitat fragmentation, degradation and loss, as well as noise, vibration and light disturbance.
    - Water quantity as a result of changes in water table depths and associated impacts on soil moisture and composition.
    - Water quality as a result of bank destabilizing and sedimentation related to construction and land disturbance activities.

  - Fish health due to declines in water quality and increases in water temperatures related to overhanging vegetation loss.
  - Air quality due to emissions from equipment and infrastructure used for resource extraction.
- Sedimentation can clog stream channels which can further lead to bank erosion, flooding, destruction of wetlands, and degradation of drinking water quality.
- Pits and quarries disrupt the natural movement of surface water and groundwater, as well as water recharge, in an area, which in turn can lead to reduced water quality and quantity nearby or downstream.
- Agricultural activities may lead to soil erosion (depending on the crop management practices used), surface water and groundwater contamination related to the use of pesticides and nitrate fertilizers, and algae blooms in surface water and associated impacts on fish and aquatic ecosystems (related to fertilizer use and nutrient runoff).

9.3 Goals & Objectives

Goal

- Implement proactive measures to prevent natural resource development on and adjacent to Leq'á:mel lands from adversely impacting the environment

Objectives (in priority order and with timelines)

- Develop and implement an internal referrals process to ensure that Leq'á:mel is adequately engaged and able to provide meaningful input into resource development within our traditional territory (**short-term**)
- Document and track all agricultural activities on Leq'á:mel lands to better understand potential impacts and promote environmental stewardship (**ongoing / medium-term**)

9.4 Management Framework

Relevant Legislation

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Pest Control Products Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Relevant Legislation* (Cont'd)

Provincial – including but not limited to:

- *Environmental Management Act*
  - Agricultural Waste Control Regulation
  - Spill Reporting Regulation
  - Hazardous Waste Regulation
- *Forest and Range Practices Act*
- *Wildlife Act*
- *Water Sustainability Act*
- *Water Protection Act*
- *Drinking Water Protection Act*

Leq'á:mel Laws – including but not limited to:

- Zoning Law

Under authority of the *Pest Control Products Act*, Health Canada's Pest Management Regulatory Agency determines whether a pesticide can be used throughout the country and specifies where and how each pesticide can be used.

Refer to Section 5.0 in Part 1 of the EMP for more information

Best Management Practices & Guidelines

The Government of BC offers guidelines for good agricultural practices. These include, but are not limited to:

- Storage of potentially hazardous products:
  - Storage locations should be designated, clearly marked and secure
  - Materials (*e.g.,* fertilizers and pesticides) should be stored above the flood plain and at least 30 m from any well or watercourse
  - An Emergency Plan that outlines steps in the event of spill should be posted near where chemicals are stored
- Pesticide use:
  - Pesticides are only one method of pest control and should be used in conjunction with other pest management techniques
  - Only pesticides approved for use by Health Canada under the *Pest Control Products Act* can be used
  - All pesticides must be used according to safety guidelines specified on each pesticide label
  - Farmers must strive to ensure pesticides are contained within the

Best Management Practices & Guidelines (Cont'd)

boundaries of the properties they are farming

- Pesticides can be applied to and along ditches, provided they are registered for that use and all legal requirements are met

- Fertilizer and soil conditioner use:
  - Fertilizers and soil conditioners must be spread evenly over the soil and are most effective when incorporated into the crop root zone
  - Fertilizers must be applied at a rate which takes into account the nutrient value of the fertilizer, the nutrient absorption capacity of the land, and the nutrient use by the crop grown on the land
  - Use natural fertilizers instead of synthetic ones
  - Excessive application should be avoided to prevent nutrients from entering nearby watercourses or groundwater sources

The BC Ministry of Energy and Mines prepared the **Aggregate Operators Best Management Practices Handbook**. Volume 2 of the Handbook includes best management practices for each stage of operations, which include but are not limited to:

- **Stormwater management measures** – check dams, silt fencing, ditches, retention ponds, and constructed wetlands
- **Erosion and sediment control measures** – erosion control blankets, tarps, topsoil management, vegetation cover, grading and outlet protection
- **Noise and dust control measures** – berms, dust skirts, vibration reduction, water spraying, equipment washers, and wind protection
- **Pollution control measures** – oil/water separators, pollution prevention, scheduled maintenance, and settling ponds

The *Forest & Range Practices Act* (FRPA) outlines how all forest and range practices and resource-based activities are to be conducted on Crown land in BC. The BC Forest Practices Board is an independent watchdog for sound forest and range practices in the province – it investigates public complaints about compliance with the FRPA and appropriateness of government enforcement.

The **Private Forest Landowners Association** outlines best management practices for forestry, which include but are not limited to:

- Carefully plan the harvest operation to minimize the number of crossings of lower risk streams required by machines
- Employ directional falling and yarding techniques to protect riparian zones
- Monitor streams and carefully remove introduced harvesting waste and divert residue from streams to ensure the flow of water through drainage structures.

9.5 Management Strategies

Objective 1:
Develop and implement an internal referrals process

Short-term

The following strategies will be employed to support this objective:

1) Complete a needs assessment to characterize referrals needs

Leq'á:mel will engage the People of the River Referrals Office (PRRO) and additional expertise, as required, to gain a better understanding of and characterize the existing needs of Leq'á:mel in terms of reviewing and responding to referrals. Items that will be discussed include, but are not limited to:

- Current internal referrals process in place, including roles and responsibilities;
- Categorization of projects by PRRO;
- How potential impacts are currently being assessed;
- Volume and nature of referrals experienced;
- Existing responses to different types of projects; and
- Current capacity of Leq'á:mel to respond to referrals, including specific challenges.

2) Explore opportunities to increase capacity to respond to referrals

Leq'á:mel will engage with other First Nations, including Sumas First Nation, that have similar challenges with responding to referrals to identify where resources may be shared to increase capacity overall. For example, a Referrals Officer or similar position may be created to provide support to several First Nation communities, including Leq'á:mel, to increase human capacity while reducing financial demands on each community.

3) Develop and implement an internal referrals process

In line with the Strategic Plan (2017-2020), Leq'á:mel will develop a referrals protocol and engagement framework that includes, but is not limited to:

- A description of the roles and responsibilities for referrals;
- A screening and engagement process and flow-chart to filter applications and determine the appropriate level of consultation/engagement; and
- A clear decision-making process for referrals.

The referrals protocol and engagement framework will be developed with consideration for:

- Current capacity and future capacity needs;
- The Stó:lō First Nations Strategic Engagement Agreement; and
- The Leq'á:mel Forest & Range Consultation and Revenue Sharing Agreement.

Objective 1 (Cont'd)

4) Develop a Leq'á:mel Referrals Policy to formalize the referrals protocol and engagement framework described above

In formalizing the referrals protocol and engagement framework, the Referrals Policy will provide for meaningful consultation and accommodation of Leq'á:mel interests by the Crown and Third Parties related to the use of land and/or resources in Leq'á:mel traditional territory. The Policy will include, but will not be limited to:

- Guiding principles based on Leq'á:mel perspectives and priorities;
- Decision-making roles and responsibilities;
- Consultation and engagement requirements including resourcing and timelines;
- Expectations in terms of impact assessments and associated funding and capacity requirements in terms of Leq'á:mel participation; and
- Negotiations and dispute resolution.

For reference, the Penticton Indian Band recently developed and implemented a Referrals Policy to provide a framework for meaningful consultation and engagement during resource development and land use in their territory.

Objective 2:
Document and track all agricultural activities on Leq'á:mel lands

Ongoing / Medium-term

All agricultural land uses and leases will be documented and tracked by the Leq'á:mel Lands Department to:

- Understand the nature of the activities being undertaken (*e.g.*, pesticide and/or fertilizer use, water usage) and potential impacts;
- Ensure that pesticide use is compliant with laws governing their use; and
- Provide safeguards in terms of liabilities and risks related to agricultural leases and associated land uses.

This is related to Objectives 1 and 4 in **Section 10.0: Land Development Management Plan.**

Leq'á:mel will also work with agricultural operators on Leq'á:mel lands to promote environmental stewardship.

9.6 Education and Awareness

Leq'á:mel will work with agricultural operators to implement environmentally responsible practices. Fisheries and Oceans Canada and the Government of BC developed Watershed Stewardship: A Guide for Agriculture for all agricultural producers – from ranchers to greenhouse growers to hobby farmers – to support operations while enhancing the quality of the local environment.

10. LAND DEVELOPMENT & MANAGEMENT PLAN

Land development refers to the alteration of land through activities such as grading, excavation, soil removal, construction, alteration or clearing of habitats. This alteration or conversion of land is associated with modern communities that are constructed or reconstructed for people to live, work, worship, shop, play, and with other supporting land uses.

A clear land development process that considers environmental and cultural context and community needs, and incorporates environmental regulations and policies, is needed. Throughout the land development process, it is important to maintain environmental and cultural values supported by the land and surrounding environment.

Refer to **Part 1 of the EMP** for background information related to land development on Leq'á:mel lands.

10.1 Threats

- Leq'á:mel lands hold valuable environmental and cultural heritage resources for the community, as presented throughout this EMP. Without effective land development and management that recognizes and protects these resources, they are at risk of being degraded or lost.
- Ad hoc development (*i.e.*, unplanned development that does not consider the long-term needs of the community or is not in line with the Land Use Plan) can also contribute to the degradation of important resources and prevent the achievement of community goals.
- Unregistered leases or lease arrangements without proper documentation can lead to land uses that are not in line with the Land Use Plan and adverse impacts on the environment depending on the land use activities.

10.2 Goals & Objectives

Goal

- Ensure land development proceeds through a fair and transparent process and does not adversely impact the environment

Objectives
(in priority order and with timelines)

- Develop and implement a policy that all leases on Leq'á:mel lands must go through the Lands Department (**short-term**)
- Develop and implement a subdivision, development and servicing law that includes Land Development Permit requirements (**short-term**)
- Develop and implement a business licensing law (**medium-term**)
- Inventory, document and track all leases and land use activities on Leq'á:mel lands, including CP-held lots (**long-term**)
- Enforce the Zoning Law to prevent unwanted uses of lands (**ongoing / long-term**)

10.3 Management Framework

Relevant Legislation

Federal – including but not limited to:

- *First Nations Land Management Act*
- *Indian Act*
- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Assessment Act*
- *Environmental Management Act*
- *Water Sustainability Act*
- *Wildlife Act*
- *Fisheries Protection Act*
- *Heritage Conservation Act*

Refer to Section 5.0 in Part 1 of the EMP for more information

Best Management Practices & Guidelines

A strong, defined Land Development Process can assist communities with:

- Creating a coordinated approach to growth and development;
- Implementing Land Use Plans and associated policies;
- Providing a logical process whereby leadership can make decisions about the direction of development on community lands; and
- Providing others with an understanding of community needs.

A **land development permitting process** is generally used by municipalities as a planning tool to promote legislative and regulatory compliance and environmental protection in the development process. This is achieved by establishing specific requirements for siting, planning, design, and environmental protection (*e.g.*, setbacks from water features, environmental assessment reports with applications).

Best Management Practices & Guidelines (Cont'd)

National Building Code of Canada 2015 – sets out technical provisions for the design and construction of new buildings. It also applies to the alteration, change of use and demolition of existing buildings.

BC Building Code 2012 – provides strong guidance for the construction of buildings; including extensions, substantial alterations, and upgrading of buildings to remove an unacceptable hazard and is a requirement under INAC's Terms of Reference. The BC Building Code applies to the core concepts of the National Building Code, along with elements specific to BC's unique development needs.

BC Fire Code 2012 – provides First Nations with a standard for acceptable level of fire safety within the community. It is not required by law that Nations follow the guidelines within the BC Fire Code; however, the Code provides standards which should be strongly considered.

BC Plumbing Code 2012 – a useful tool for the installation or designing of plumbing systems. It also applies to the extension, alteration, renewal and repair of existing plumbing systems. While the Code is not mandatory for Nations to adopt, it could be a useful tool and guide for plumbing practices unique to BC's development needs.

10.4 Management Strategies

Objective 1:
Implement a lease registration policy

Short-term

Leq'á:mel will develop and implement a policy that all leases must be registered through the Lands Department.

Given the liability and risks that Leq'á:mel and its members have taken on in terms of environmental and land management, it is important to understand which parcels of land are being leased out and the nature of land use for each. Developing and implementing a policy requiring that all leases on Leq'á:mel lands must be registered with the Lands Department will enable Leq'á:mel and its members to minimize or eliminate potential risks associated with leases in that:

- All leases and associated land uses will be properly documented;
- Potential land uses on Leq'á:mel lands, including CP-held lots, can be reviewed to ensure land use activities are in line with Leq'á:mel's Land Use Plan; and
- Compliance with federal and Leq'á:mel laws (*e.g.*, Zoning Law) can be monitored and enforced.

As part of the policy, a standard lease template in line with Leq'á:mel's Land Code can be made available for use by CP Holders to ensure adequate terms and conditions are in place.

Objective 2:
Develop and implement a subdivision, development and servicing law

Short-term

The law will be developed to promote environmentally sustainable and well planned development on Leq'á:mel lands in line with relevant legislation, community plans and guidelines.

The law will require developers and contractors (members and non-members) to apply for an approval from the Lands Department and leadership prior to undertaking a project or certain land development activities, as defined in the law. Based on existing subdivision, development and servicing laws in place in other Stó:lō communities, developments must generally meet, at a minimum, the requirements set out in the following:

- General Engineering Requirements for Land Development on community lands;
- General Requirements for Environmental Assessment on community lands;
- Stó:lō Heritage Policy Manual;
- The BC Building Code; and
- Direction from certified professionals.

The law will include penalties for non-compliance and an appropriate enforcement mechanism.

A provision for a development permitting process is generally included in this type of law to:

- Specify and enforce requirements for development related to:
  - The form and character of the development (*e.g.,* exterior design, landscaping, siting, etc.);
  - Environmental protection (*e.g.*, setbacks, environmental assessments, erosion and sediment control plans, site-specific environmental management plans); and
  - The type of land use(s).
- Impose conditions on the development (*e.g.*, sequence and/or timing of construction activities); and
- Allow for variances in the Zoning Law to facilitate development in line with overarching community plans.

The Leq'á:mel Development Procedures Manual and Guidelines already provide a starting point for the development permitting process in terms of having an application that includes considerations for site characteristics, proposed land uses, and environmental protection.

A preliminary land development review and permitting process that encompasses environmental considerations and that could be implemented on Leq'á:mel lands is provided in **EOP 9: Land Development Management Procedures in Part 3 of the EMP**.

Objective 3:

Develop and implement a business license law

Medium-term

The law will be developed to record and regulate businesses on Leq'á:mel lands and ensure compliance with relevant legislation.

Based on existing business licensing laws in place in other Stó:lō communities, businesses operating on community lands must receive a business permit from the approving authority and certain types of businesses are prohibited.

Objective 4:

Inventory, document and track all leases on Leq'á:mel lands

Long-term

Leq'á:mel will strive to register all existing leases on Leq'á:mel lands that are not yet registered with the Lands Department.

Similar to the benefits of developing and implementing a leasing policy (as described above), encouraging CP Holders to convert existing Buckshee leases into real leases will provide further safeguards in terms of liabilities and risks related to leases and associated land uses. At the same time, this will facilitate the Leq'á:mel Lands Register to be updated and all leases on Leq'á:mel lands to be tracked and monitored to ensure compliance with relevant legislation.

It is recognized that converting existing Buckshee leases into real leases will likely be a difficult task – working with CP Holders in terms of education and awareness of risks and liabilities will be an important component to achieving this.

Objective 5:

Enforce the zoning law to prevent unwanted uses of lands

Ongoing / Long-term

Leq'á:mel will enforce the zoning law to reduce the potential for additional environmental impacts on Leq'á:mel lands.

Past and existing unwanted uses of land (*e.g.,* not in line with the Land Use Plan or Zoning Law, polluting activities) have led to adverse environmental impacts and have the potential to continue to do so. Enforcing the Land Use Plan and associated Zoning Law is an important step to managing the risk and liabilities for environmental damage.

Where non-compliance is identified, the following steps should be followed as a starting point:

- Educate the resident (whether member or non-member resident) with relevant information in terms of risk and liabilities and give a warning first (use the situation as a teachable moment);
- Obtain advice from legal counsel if resident continues to be non-compliant; and
- Conduct an Environmental Audit to verify potential environmental risks and impacts.

Objective 5 (Cont'd)

Provisions for enforcement of any policies and laws (*e.g.,* appointed Enforcement Officer or similar authority) must also be considered for them to be effective. Leq'á:mel may consider working with other First Nation communities to share resources to facilitate this type of position.

10.5 Education and Awareness

Staff in the Leq'á:mel Lands Department may require training and capacity building to oversee the land development and business approval and permitting processes. Relevant opportunities for this will be identified to facilitate the successful implementation of these processes.

11. HAZARDOUS WASTE & FUEL MANAGEMENT PLAN

Hazardous waste refers to solid, liquid (*e.g.,* fuel) and gas wastes that can cause harm to people, other living things, property, or the general health of the environment, including paints, chemicals, batteries, and light bulbs. Hazardous wastes are known to have at least one of the following characteristics:

- Toxic (*i.e.*, poisonous)
- Flammable (*i.e.*, easily set on fire)
- Reactive (*i.e.*, reacts easily with other chemicals)
- Corrosive (*i.e.*, causes destruction of material or tissue through contact)

They come from a number of sources including industrial operations, manufacturing and processing plants and hospitals, or they can be materials that are no longer used such as waste lubricants, oils and pesticides.

11.1 Key Features

Some household hazardous waste items are accepted at the Leq'á:mel transfer station.

Fuels present on Leq'á:mel lands include:

- Above-ground propane storage tanks (used for heating of buildings)
- Above-ground diesel storage tank at the Public Works maintenance yard
- Gas station on Skweahm

Refer to **Part 1 of the EMP** for background information related to hazardous waste and fuels on Leq'á:mel lands.

11.2 Key Threats

- Improper storage and disposal of hazardous wastes can lead to the contamination of air, soils, groundwater, and surface waters with associated harmful effects on environmental and human health.
- Contamination of drinking water sources is an especially problematic threat associated with improper storage and disposal of hazardous waste items because it can also lead to the contamination of surrounding surface waters within the local watershed. Contaminated surface waters can lead to further negative impacts on plant and animal populations.
- Fuel spills as a result of improper handling, storage or disposal can also lead to contaminated air soils, groundwater, and surface water. Leaks or spills may occur if fuel storage tanks are not properly installed or maintained. In addition, clean-up of a fuel leak or spill can be a very costly and lengthy process.

11.3 Goals & Objectives

Goal

- Proper handling and disposal of hazardous wastes and fuels on Leq'á:mel lands

Objectives
(in priority order and with timelines)

- Explore potential for additional hazardous waste collection at the transfer station (**short-term**)
- Minimize the generation of hazardous waste (**medium-term**)
- Promote responsible storage of fuels on Leq'á:mel lands (**short-term**)
- Effective response to and management of fuel leaks and spills on Leq'á:mel lands (**short-term**)

11.4 Management Framework

Relevant Legislation*

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Transportation of Dangerous Goods Act*
  - Transportation of Dangerous Goods Regulations
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Management Act*
  - Spill Reporting Regulation
  - Contaminated Sites Regulation
- *Transportation of Dangerous Goods Act*
  - Transportation of Dangerous Goods Regulations
- *Drinking Water Protection Act*
- *Wildlife Act*
- *Fish Protection Act*

Refer to Section 5.0 in Part 1 of the EMP for more information

Relevant Legislation (Cont'd)

The BC Hazardous Waste Legislative Guide explains how to follow the laws related to managing hazardous waste in BC as well as describes the province's programs for managing hazardous waste.

In 2008, Environment Canada's Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations came into force to regulate above-ground and underground fuels storage containers under federal jurisdiction. **The regulations apply to specified tanks and tank systems on federal or First Nation lands.** The regulations also apply to all the piping and other equipment associated with the tanks. As of 2016, the following storage tank systems DO NOT fall under the regulations:

- Storage containers with a capacity of less than 230 litres;
- Indoor storage tanks where the building supplies the required level of secondary containment;
- Pressurized tanks (*e.g.,* for propane);
- Aboveground tanks that have a total combined capacity of 2500 litres or less and are connected to a heating appliance or an emergency generator; and
- Storage tank systems regulated by the National Energy Board or the Canada Oil and Gas Operations Act

The Canadian Council of Environment Ministers developed the Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products for owners of storage tank systems, the fuel distribution industry and government departments with authority to regulate storage tanks containing fuel products. The Environmental Code of Practice applies to tanks that have a capacity of more than 230 litres that are designed to be installed in a fixed location, and provides technical requirements for:

- Registration and approval of storage tank systems by Environment Canada;
- Design and installation of new tanks and piping;
- Monitoring and leak detection;
- Upgrading of existing systems
- Operation and maintenance; and,
- Removal of storage tank systems.

The BC Fire Code establishes standards for the storage and handling of flammable and combustible liquids and applies the core concepts of the National Fire Code.

Best Management Practices & Guidelines

Key practices to reduce the potential for impacts associated with hazardous wastes include, but are not limited to, the following:

- Confirm with available resources (provided below) whether waste items are considered hazardous waste prior to disposal;
- Label all containers with materials that are considered hazardous wastes in a manner that is visible to everyone, and store these containers upright in a secure location;
- Treat unknown (unlabeled) waste as hazardous waste;
- Never flush hazardous waste items or potential hazardous waste items down the drain; and
- Look for non-hazardous alternatives where possible; and
- Use outreach and education to inform the community about what hazardous waste is and how to store and dispose of it properly.

BC's Product Stewardship Programs manage many household hazardous waste collection programs for most items, including: electronics, lead-acid batteries, paints solvents, pesticides and gasoline, tires, used oil and antifreeze. The website provides information regarding:

- Categories of hazardous waste (*e.g.,* electronics);
- Specific items (*e.g.,* televisions) and details on what parts can be recycled; and
- Where specific items can be recycled (drop-off locations).

Household hazardous waste items can be dropped off free of charge at the Abbotsford Mission Recycling Centre.

General best management practices for **fuel handling and storage** include, but are not limited to:

- Containers must be appropriate for the type of fuel, meet standards of Underwriters Lab of Canada or Canadian Standards Association, be filled to a safe level, and capped;
- All small containers (less than 230 liters or 50 gallons including jerry cans, pails, and drums) stored at or near homes must be kept a minimum of 25 m from roadways and pedestrians and out of direct sunlight. They are to be protected from potential impact and in a ventilated shed under lock and key;
- Do not fill containers beyond their safe filling level (~90% full);
- Containers must be well maintained and free of rust, severe dents, and leaks;
- Containers must be located a minimum of 30.5 m (100 feet) away from groundwater wells or surface water;
- Containers must be stored at least three metres away from any building or in a building designed for storage;

Best Management Practices & Guidelines (Cont'd)

- Drums and larger containers must be stored upright and dispensed upright using an approved pump;
- Caution and due diligence shall be used to prevent spills, check weekly for spills and leaks;
- Containers must be clearly labeled with contents and hazards, including "Flammable";
- Material safety data sheets for all products must be available to all involved in storage, handling, and dispensing of fuels;
- Storage locations must be vented and have appropriate fire extinguishers that are annually inspected with proper tags;
- Dispensing sites must be posted as no smoking and have one extinguisher available for use;
- Operators must conduct regular inspections of fuel tanks to ensure proper requirements are met;
- No fuel must escape during normal transport and handling;
- A spill kit, appropriate to the type of fuel and volume contained, must be kept easily accessible; and
- Contact the Provincial Emergency Program (PEP) in the event of a fuel spill (**1-800-663-3456**).

General best management practices for **fuel transport** include, but are not limited to:

- All vehicles transporting fuel must have an appropriate spill kit and the driver must be trained and knowledgeable in its use;
- Vehicles transporting fuels must meet requirements of the *Transport of Dangerous Goods Act* and BC Ministry of Transportation;
- If a combined fuel load is greater than 2,000 L (440 gallons) a shipping document must be filled out for the cargo, the driver must have proof of "Transport of Dangerous Goods (TDG)" certified training and the load must a TDG placard appropriate for the fuels being transported; and
- All loads must be secured to prevent tipping or fuel loss. Fuel drums being transported by truck must be stacked end on end and transported by vehicles with sides or side boards.

Implementing methods of **leak and spill prevention** is key to minimizing impacts associated with fuel handling and storage. Some of these methods include:

- Physical requirements for tanks and equipment;
- Tank age limits;
- Inspection and monitoring requirements; and

Best Management Practices & Guidelines (Cont'd)

- Requirements for proper decommissioning of tanks.

Planning for fuel leak/spill response and reporting is also important for effective fuel management and clear procedures are needed to ensure that a response is effective at minimizing impacts to human and environmental health. The placement of **spill kits** at locations where fuel is handled and/or stored is one important strategy that should be considered. INAC developed Guidelines for Spill Contingency Planning with resources for developing action plans, incident reporting procedures, inventories, and training programs.

11.5 Management Strategies

Objective 1:
Explore potential for additional hazardous waste collection at the transfer station

Short-term

Leq'á:mel will explore the potential to accept additional household hazardous wastes at the transfer station, beyond what is currently accepted, to support responsible disposal of hazardous waste materials on Leq'á:mel lands.

Leq'á:mel will work with external organizations (*e.g.*, FVRD, technical expertise) to better understand the capacity of the transfer station to accept additional hazardous waste items beyond what is currently accepted. This may also be explored through a Solid Waste Feasibility Study, as described in **Section 6.0: Solid Waste Management Plan**.

Objective 2:
Promote responsible storage of fuels on Leq'á:mel lands

Short-term

The following strategies will be employed to support this objective:

1) Conduct a fuel storage tank inventory

Under the Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations, all regulated tanks should already be registered with Environment Canada. Using the Environment Canada tank registry, Leq'á:mel can work with residents and lessees to create an inventory that identifies and records the location and status of all fuel tank systems on Leq'á:mel lands. At a minimum, the inventory should seek to build on the existing information for regulated tanks and provide appropriate information for non-regulated tanks.

2) Ensure fuel storage tanks comply with relevant federal codes

All new tanks on Leq'á:mel lands should be designed to be compliant with all federal regulations. All proposals for development or upgrade of fuel tank storage systems regulated under Environment Canada Storage Tanks Regulations should include certifications from a professional engineer, registered in BC and with direct experience in fuel storage tank design, to confirm that systems are designed and will be operated in compliance with the regulations.

Objective 2 (Cont'd)

Design and installation or upgrade of tank systems not regulated under the Environment Canada Storage Tanks Regulations should be completed by a certified Oil Burner Mechanic (OBM) and supported by certification of the OBM so that the system meets the requirements of Canada Standards Association (CSA) Standard B139.

Owners of all new and/or upgraded tank systems should provide supporting documentation to Leq'á:mel to show that they are compliant with Environment Canada Storage Tanks Regulations and CSA Standard B139. This information should also be incorporated into the fuel storage tank inventory described above.

3) Implement a tank inspection program

A tank inspection program for all fuel tanks on Leq'á:mel lands would further ensure compliance with relevant legislation and codes. A fuel tank inspection process that can be implemented is provided in **EOP 10: Hazardous Waste & Fuels Management Procedures in Part 3 of the EMP**.

Objective 3:

Effective response to and management of fuel leaks and spills on Leq'á:mel lands

Short-term

Clear procedures for fuel spills and leaks will be developed and implemented and provided to all residents and contractors working on Leq'á:mel lands.

This could be developed as a Spill Response Plan that includes information related to spill response kits and their locations on Leq'á:mel lands. A fuel spill response process that can be implemented is provided in **EOP 10: Hazardous Waste & Fuels Management Procedures in Part 3 of the EMP**.

Objective 4:

Minimize the generation of hazardous waste

Medium-term

Leq'á:mel will develop community hazardous wastes strategy that inventories, assesses, and provides means for the removal of hazardous waste from Leq'á:mel lands.

This strategy will strive to make it easy for community members to properly dispose of their hazardous waste. A community hazardous waste collection day can be a component of the strategy. This will provide community members with a designated location to deposit their hazardous waste and know that it will be properly disposed of. This is something that could be implemented a few days a year in the beginning to assist with the disposal of stockpiled hazardous waste, and maybe reduce in frequency to once a year.

A program to address the presence of derelict vehicles on Leq'á:mel lands will also be a component of this strategy given this ongoing issue.

11.6 Education and Awareness

Community awareness of the risks associated with hazardous waste disposal is a crucial component of appropriate disposal and management. Community education and training related to hazardous waste will also be a component of the community hazardous waste strategy. Topics for education and awareness related to hazardous waste include the following:

- What hazardous waste is;
- The risks associated with improperly managing/disposing of it; and
- How to properly dispose of hazardous wastes.

External resources may be able to assist with education and outreach initiatives. For example, the BC First Nations Health Authority provides public education on the proper disposal of waste and the protection of health and the environment.

Proper fuel handling and storage procedures should also be promoted throughout the community through education and training. This may include, but is not limited to:

- Organizing an annual small fuel container clean-up;
- Promoting awareness of where to dispose of waste fuel;
- Training for Leq'á:mel members on proper fuel handling and storage, and spill response;
- Circulating copies of Best Management Practices for Fuel Handling and Storage, the Spill Response Plan, and leak/spill incident reporting procedures; and,
- Ensuring spill response kits are located in key areas in the community.

LEQ'Á:MEL FIRST NATION

ENVIRONMENTAL MANAGEMENT PLAN

PART 3: Environmental Operating Procedures

April 2017

Submitted to:

Submitted by:

DILLON CONSULTING

TABLE OF CONTENTS

TABLE OF PROCESSES

EOP-1 GROUNDWATER PROTECTION MEASURES

PURPOSE

This document provides information on required measures to protect groundwater on and adjacent to Leq'á:mel lands. Drinking water in the area is obtained from the Chilliwack-Rosedale, Nicomen Slough, and Lake Errock/Deroche Creek Aquifers, which can be easily contaminated given their shallow depths. Proper protection and management of groundwater on Leq'á:mel lands is important to both environmental and human health.

RESPONSIBILITY

It is the responsibility of all residents and land developers on Leq'á:mel lands to responsibly manage activities that have the potential to impact groundwater on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to groundwater;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact groundwater on or adjacent to Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

- Shallow aquifers with increased risk of contamination
- Community wells on Lakahahmen, Holachten and Skweahm
- Individual sandpoint wells on Lakahahmen (4), Holachten (2), Skweahm (8)
- Individual deep wells on Skweahm (1), Lakahahmen (1), and Zaitscullachan (1)

DEFINITIONS

Aquifer: An underground layer of rock, sediment, or soil that holds water and provides groundwater.

Groundwater: Water held underground in the soil or in pores and crevices in rock.

DEFINITIONS (Cont'd)

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 1: Groundwater Protection Procedures MUST be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

Best management practices for the **protection of groundwater sources** on Leq'á:mel lands include, but are not limited to:

- Wash cars on a lawn instead of a driveway to minimize run off.
- Check and repair any fluid leaks from vehicles.
- Proper maintenance and handling of septic sewer systems (see below).
- Avoid the use of harsh chemicals whenever possible.
- Choose environmentally friendly pest or weed control options.
- All soil and fill brought onto Leq'á:mel lands must be free of contamination – refer to EOP 7: Soil & Fill Management Measures.
- Properly handle, store and dispose of hazardous substances and fuels – refer to EOP 10: Hazardous Waste & Fuel Management Measures.
- Land development must be conducted in such a way as to not have adverse impacts on groundwater sources – refer to EOP 9: Land Development Management Measures.

Best management practices for the **maintenance of septic systems** on Leq'á:mel lands include, but are not limited to:

- Empty septic tanks as required and properly recover area with soil.
- Do not put any harmful chemicals down the drain or in the toilet.
- Do not flush anything down to the toilet or put anything down the drain that might cause a failure or clog in the septic system, including:
  - Diapers
  - Cooking oil and/or grease
  - Feminine hygiene products
  - Paper towels
  - Plastics
  - Condoms
  - Cotton swabs
  - Kitchen wastes
  - Kitty litter

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

Best management practices that must be employed during the **development and maintenance of drinking water wells** include, but are not limited to:

- Wells are constructed to meet relevant quality standards (*e.g.*, BC Ground Water Protection Regulation).
- A qualified contractor must drill the well and install the well pump.
- Well is constructed with surface seal (to prevent contaminants from the surface or shallow sub-surface entering the well.
- Well is constructed with secure well cap to prevent direct and unintended entry into the well of any water or undesirable substances at the surface of the ground, including floodwater, ponded water, and contaminants.
- Well is constructed with well casing stick-up to help flood-proof the well.
- Well head is graded to surface water away from the wellhead.
- A Well Identification Plate is installed.
- Controlled or stopped artesian flow mechanism is installed (to prevent wasting water).
- Pump is installed using qualified installer.
- Any potentially harmful or hazardous materials (*e.g.,* fertilizers, fuels, garbage, construction materials) are kept at a minimum of 3 metres from the wellhead.
- The well and pump are regularly inspected and maintained.
- A drinking water sampling and monitoring program is established and maintained to ensure the well water is potable.
- The well is deactivated or closed when no longer in use.

The most up-to-date versions of the following guidelines must be used during any **groundwater quality assessment and monitoring** on Leq'á:mel lands:

- Guidelines for Canadian Drinking Water Quality
- Federal Interim Groundwater Quality Guidelines
- Canadian Water Quality Guidelines for the Protection of Aquatic Life
- BC Guidelines for Drinking Water
- BC Guidelines for Aquatic Life, Wildlife & Agriculture

RELEVANT LEGISLATION

Federal legislation includes, but is not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Safe Drinking Water for First Nations Act*

RELEVANT LEGISLATION (Cont'd)

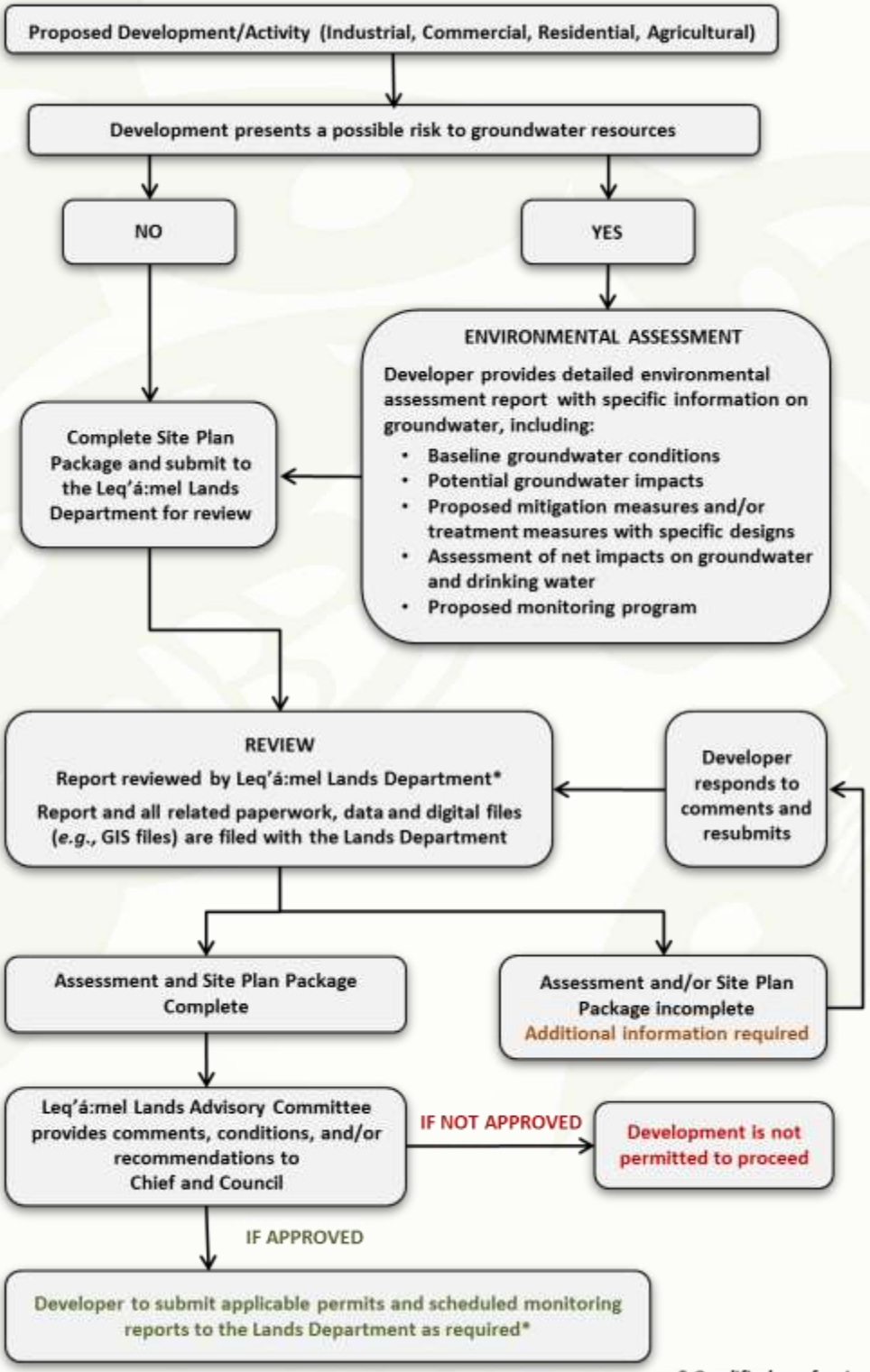
Provincial legislation includes, but is not limited to:

- *Environmental Assessment Act*
- *Environmental Management Act*
  - Contaminated Sites Regulation
  - Hazardous Waste Regulation
  - Municipal Wastewater Regulation
  - Spill Reporting Regulation
  - Waste Discharge Regulation
- *Water Sustainability Act*
  - Groundwater Protection Regulation
- *Water Protection Act*
- *Drinking Water Protection Act*
  - Drinking Water Protection Regulation
- *Public Health Act*
  - Health Hazards Regulation
  - Sewerage System Regulation

RELEVENT DOCUMENTATION

- BC Ministry of Environment: Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia
- BC Groundwater Protection Regulation
- EOP-4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP-7: Soil & Fill Management Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 1: Groundwater Protection Procedures for Proposed Developments/Activities



** Qualified professional services may be required.*

EOP-2 FISHERIES RESOURCES PROTECTION MEASURES

PURPOSE

This document provides information on required measures to protect fisheries resources on and adjacent to Leq'á:mel lands. The conservation and protection of fisheries resources is of significant importance to Leq'á:mel people for food, cultural, and ceremonial purposes.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage activities that have the potential to impacts fisheries resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to fisheries resource protection;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact fisheries resources on or adjacent to Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Fish bearing or supporting water features include:

- Fraser River
- Nicomen Slough
- Quaamich Slough
- Deroche Creek
- Zaitscullachan Slough
- Vedder and Sumas Rivers
- Wetland areas on Aylechootlook and Lackaway

Wetlands include:

- Aylechootlook
- Lackaway

DEFINITIONS

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

Fisheries resources: Refer to the fish and the aquatic species they depend on.

Habitat in terms of aquatic species: Spawning grounds and nursery, rearing, food supply, migration and any other area on which aquatic species depend directly or indirectly in order to carry out their life processes, or areas where aquatic formerly occurred and have the potential to be reintroduced.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 2: Fisheries Protection Procedures **MUST** be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

General best management practices for the **protection of fisheries resources** on Leq'á:mel lands include, but are not limited to:

- Carry out recreational activities in an environmentally responsible manner:
  - Leave no trace: take out whatever you bring into a natural area (*e.g.*, garbage, food).
  - Do not drive vehicles through sensitive habitat or fish-bearing streams.
- Properly handle, store and dispose of hazardous substances and fuels – refer to EOP 10: Hazardous Waste & Fuel Management Measures.

Best management practices for the protection of fisheries resources that must be employed during **all land development activities** on Leq'á:mel lands include, but are not limited to:

- **Planning and site selection:**
  - Conduct a bio-inventory of fisheries resources at the site prior to development to inform development plans and associated protection and mitigation measures.
  - Design and plan activities so that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided.
  - Design projects to minimize loss or disturbance to riparian vegetation.
  - Build away from flood plains.
  - Avoid building structures on areas that are inherently unstable (*e.g.*, floodplains, alluvial fans) and may result in erosion and scouring of stream bed.
  - Avoid or reduce the number of stream crossings in the design, and ensure fish passage is maintained where avoidance is not possible.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

  - Time land disturbance activities with respect for regional reduced-risk fisheries timing windows, as determined by the BC Ministry of Environment.

- **During land development:**
  - Up-to-date erosion and sediment control practices (*e.g.*, Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia).
  - Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
  - Minimize duration of in-water work, where required.
  - Effective stormwater management – refer to EOP 4: Surface Water Protection Measures.
  - Limit the amount of impervious surfaces (*e.g.*, pavement, cement) to reduce run-off.
  - Maintain riparian vegetation cover for bank stabilization and reduce erosion.
  - Minimize impacts from roads.
  - Minimize the size of clearance areas.
  - Conduct environmental monitoring during construction activities.
  - Using natural landscape techniques and species.
- **Contaminant and spill management:**
  - Do not allow chemicals or other materials to enter watercourses.
  - Develop a response plan in the case of chemical or sediment releases.
  - Building materials in watercourses should not release or leach substances.

Best management practices for **erosion and sediment control** that must be employed during all land development activities on Leq'á:mel lands include, but are not limited to:

- Identify sensitive habitat areas and natural waterbodies that may be impacted.
- Develop an Erosion and Sediment Control Plan for all construction activities.
- Do not stockpile/store soils near surface waters.
- Retain existing vegetation/ground cover where possible to limit the exposure of soils and use effective erosion prevention measures where this is not possible.
- Manage sediment using silt fencing, fabric bags, geotextile, etc.
- Re-vegetate exposed soils as quickly as possible using indigenous plant species.
- Monitor and assess for signs of erosion or sedimentation.

RELEVANT LEGISLATION

Federal legislation includes, but is not limited to:

- *Canadian Environmental Assessment Act*
- *Fisheries Act*
- *Species at Risk Act*

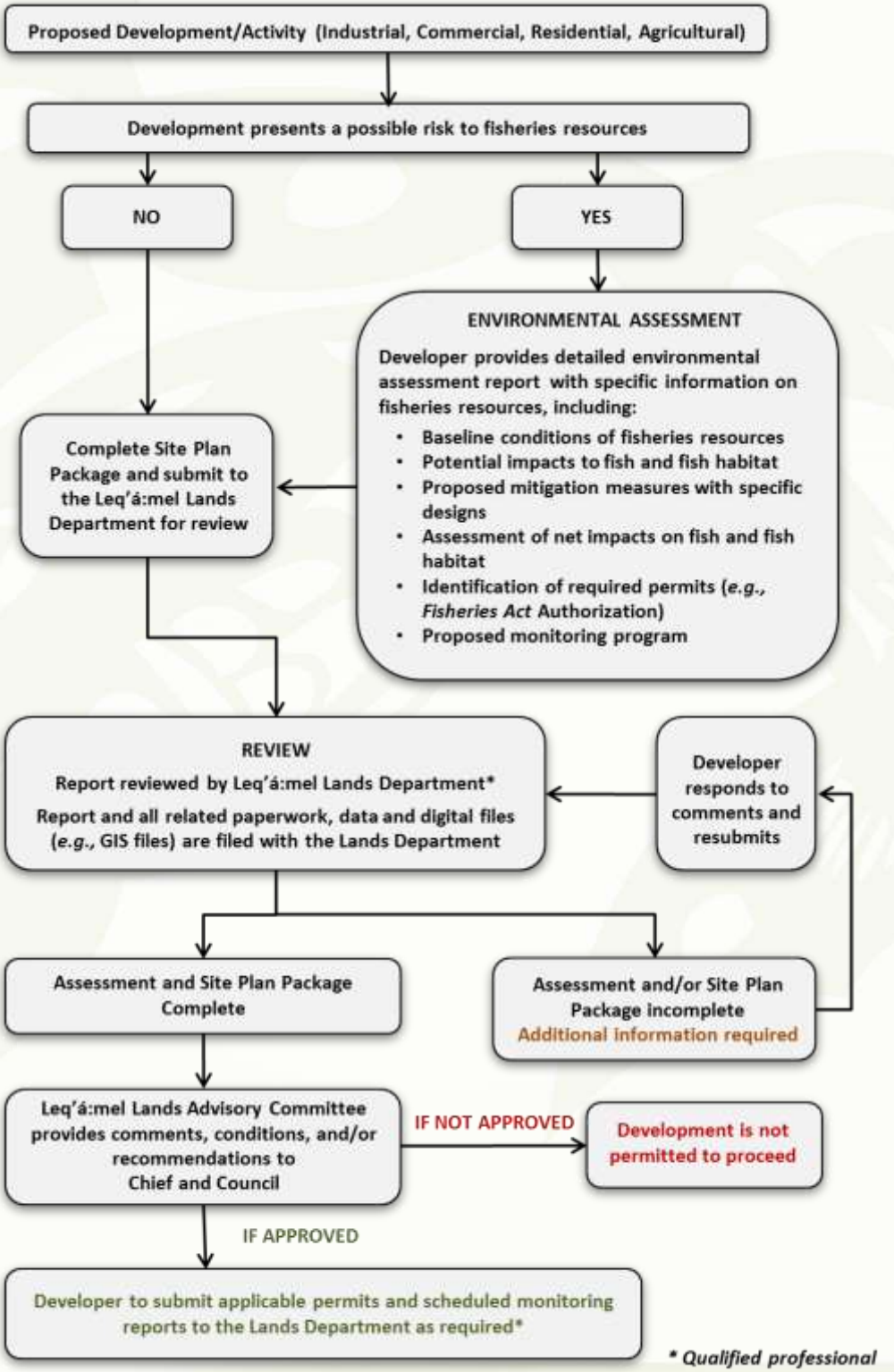
Provincial legislation includes, but is not limited to:

- *Environmental Management Act*
- *Water Sustainability Act*
- *Riparian Areas Protection Act*
- *Wildlife Act*
- *Water Protection Act*
- *Fish Protection Act*
    - British Columbia Riparian Areas Regulation

RELEVENT DOCUMENTATION

- BC Ministry of Environment (BC MOE): Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia
- BC MOE: Develop with Care Species Factsheets
- BC MOE: South Coast Region Information Package
- Fisheries and Oceans Canada: Measures to Avoid Causing Harm to Fish and Fish Habitat
- BC Ministry of the Environment: regional reduced-risk timing windows
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP-4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 2: Fisheries Protection Procedures for Proposed Developments/Activities



EOP-3 WILDLIFE, VEGETATION, & SPECIES AT RISK PROTECTION MEASURES

PURPOSE

This document provides information on required measures to protect wildlife, vegetation, & species at risk (SAR) on and adjacent to Leq'á:mel lands. The preservation and protection of habitat is of significant importance to maintain the ecological integrity of our lands, for future generations. By protecting habitat, the fish, wildlife, and plants that use this land are also protected.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage activities that have the potential to impact wildlife, vegetation, and/or SAR resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to the protection of wildlife, vegetation, and/or SAR resources;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact wildlife, vegetation, and/or SAR resources on or adjacent to Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Forested or heavily vegetated areas include:

- Holachten
- Lackaway
- Lakahahmen
- Lakway Cemetery
- Aylechootlook

Wetlands include:

- Aylechootlook
- Lackaway

FEATURES (Cont'd)

Species at risk with the potential to be present on or adjacent to Leq'á:mel lands include:

- Fish (White sturgeon, Mountain sucker, Cutthroat trout, Bull trout, Dolly Varden, Salish sucker, Brassy minnow)
- Western screech owl
- Northern rubber boa
- Western painted turtle
- Western toad
- Red-legged frog
- Oregon forestsnail
- Great blue heron

Environmentally sensitive areas in and around Leq'á:mel lands include:

- Sumas Mountain
- Bert Brink Wildlife Management Area
- Fraser River Ecological Reserve

DEFINITIONS

Critical Habitat: Habitat that is necessary for the survival or recovery of a SAR species.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders

Endangered Species: A wildlife species that is facing imminent extirpation or extinction.

Extirpated Species: A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the world.

Habitat (a) in respect of aquatic species: Spawning grounds and nursery, rearing, food supply, migration and any other area on which aquatic species depend directly or indirectly in order to carry out their life processes, or areas where aquatic formerly occurred and have the potential to be reintroduced; and **(b) in respect of other wildlife species**: The area or type of site where a wildlife species naturally occurs or depends on directly or indirectly in order to carry out its life processes or formerly occurred and has the potential to be reintroduced.

Migratory Bird: A migratory bird referred to in the *Migratory Birds Convention Act* and includes the sperm, eggs, embryos, tissue cultures and parts of the bird.

Species at Risk: An extirpated, endangered, or threatened species or a species of special concern.

Species of Special Concern: A wildlife species that may become threatened or an endangered species because of a combination of biological characteristics and identified threats.

DEFINITIONS (Cont'd)

Threatened Species: A wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 3: Wildlife & SAR Protection Procedures **MUST** be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

General best management practices for the **protection of wildlife, vegetation and SAR habitat** on Leq'á:mel lands include, but are not limited to:

- Carry out recreational activities in an environmentally responsible manner:
  - Leave no trace: take out whatever you bring into a natural area (*e.g.*, garbage, food).
  - Do not drive vehicles through habitat areas, environmentally sensitive areas or fish-bearing streams.
- Properly handle, store and dispose of hazardous substances and fuels – refer to EOP 10: Hazardous Waste & Fuel Management Measures.
- Report any sightings of known SAR and invasive species (*e.g.*, Japanese knotweed, Himalayan blackberry, Morning glory, English ivy, Scotch broom) to the Lands Department.

Best management practices for the protection of wildlife, vegetation and SAR habitat that must be employed during **all land development activities** on Leq'á:mel lands include, but are not limited to:

- **Planning and site selection:**
  - Conduct a bio-inventory of wildlife, vegetation and SAR resources at the site prior to development to inform development plans and associated protection and mitigation measures.
  - Where there is potential for SAR to occur, a Qualified Environmental Professional and/or provincial and federal regulators should be consulted prior to works being initiated.
  - Design and plan activities so that loss or disturbance to habitat is minimized and sensitive habitats are avoided.
  - Connect habitat areas with wildlife corridors.
  - Design projects to minimize loss or disturbance to riparian vegetation.
  - Build away from flood plains.
  - Avoid building structures on areas that are inherently unstable (*e.g.*, floodplains, alluvial fans) and may result in erosion and scouring of stream bed.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

  - Time land disturbance activities in line with regional reduced-risk timing windows for birds, as determined by the BC Ministry of Environment.

- **During land development:**
  - Employ up-to-date erosion and sediment control practices – see EOP 2: Fisheries Resource Protection Measures for more details.
  - Minimize impacts from roads.
  - Use temporary fencing around trees during construction.
  - Minimize the size of clearance areas.
  - Conduct environmental monitoring during construction activities.
  - Use indigenous plant species during **re-vegetation** following land disturbance activities.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Assessment Act*
- *Migratory Bird Convention Act*
- *Fisheries Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Management Act*
- *Water Sustainability Act*
- *Riparian Areas Protection Act*
- *Wildlife Act*
- *Water Protection Act*
- *Fish Protection Act*
  - British Columbia Riparian Areas Regulation

RELEVENT DOCUMENTATION

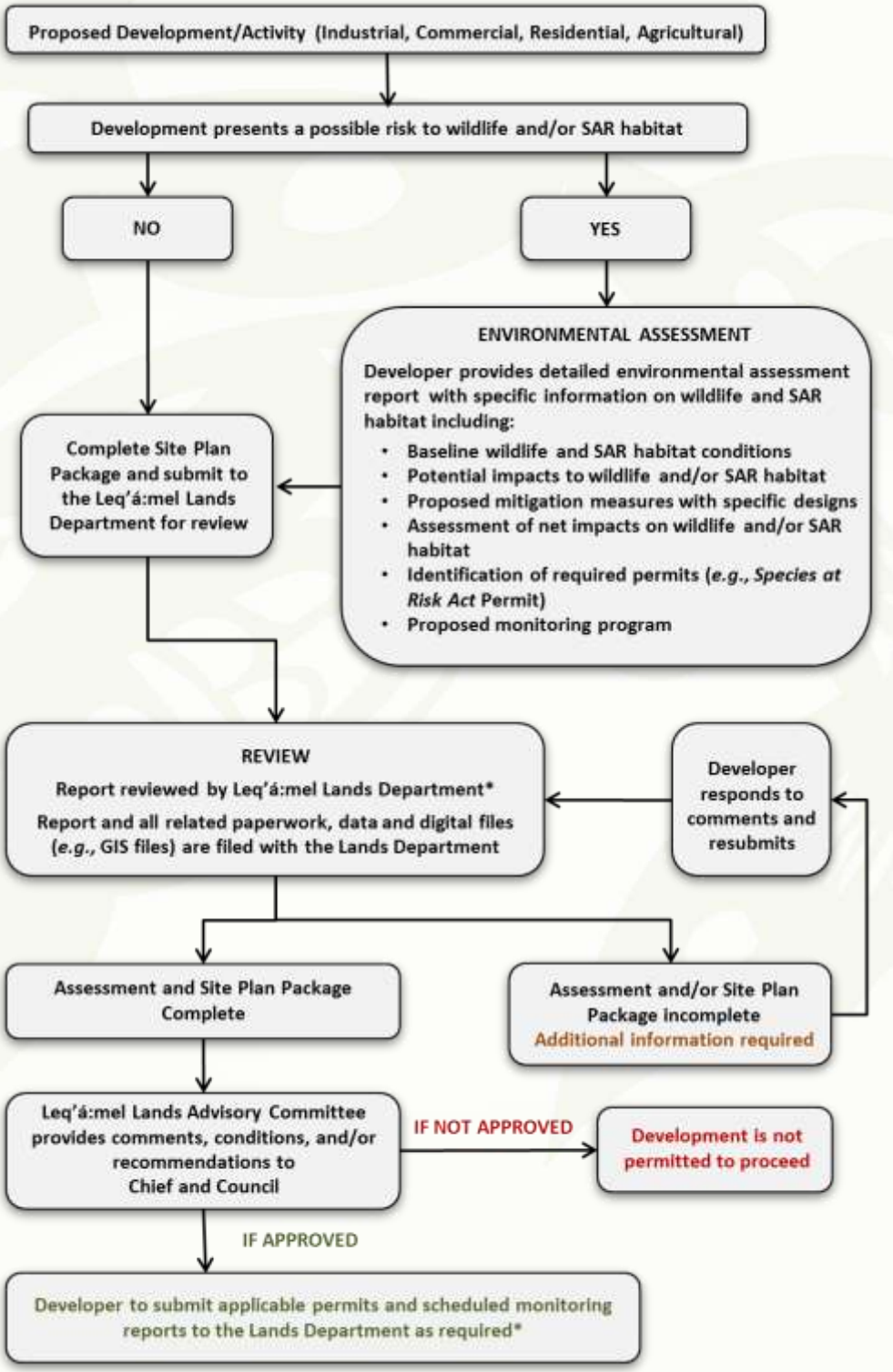
- BC Ministry of Environment (BC MOE): Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia
- BC MOE: Guidelines for Amphibians and Reptile Conservation During Urban and Rural Land Development in British Columbia (2014)
- BC MOE: Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia (2013)
- BC MOE: Develop with Care Species Factsheets
- BC MOE: South Coast Region Information Package

RELEVENT

DOCUMENTATION (Cont'd)

- EOP-2: Fisheries Resources Protection Measures
- EOP-4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP-7: Soil & Fill Management Measures
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 3: Wildlife & Species at Risk Protection Procedures for Proposed Developments/Activities



** Qualified professional services may be required.*

EOP-4 SURFACE WATER PROTECTION MEASURES

PURPOSE

This document provides information to all community members and developers on required measures to protect surface water on and adjacent to Leq'á:mel lands. The protection and management of surface waters is important to the long-term health of aquatic and terrestrial environments on and adjacent to Leq'á:mel lands, and for the health of the community.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage activities that have the potential to impact surface water resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to the protection of surface water resources;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact surface water resources on or adjacent to Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Surface water features on and/or adjacent to Leq'á:mel lands include:

- Nicomen Slough
- Deroche Creek
- Quaamich Slough
- Wilson Slough
- Zaitscullachan Slough
- Siddle Creek
- Fraser River
- Vedder River
- Sumas River

Wetlands include:

- Aylechootlook
- Lackaway

DEFINITIONS

Surface water: Refers to water found in rivers, creeks, streams, ponds and ditches on and adjacent to Leq'á:mel lands.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 4: Surface Water Protection Procedures **MUST** be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

Best management practices for the **protection of surface water** on Leq'á:mel lands include, but are not limited to:

- Wash cars on a lawn instead of a driveway to minimize run off.
- Check and repair any fluid leaks from vehicles.
- Pave as little of your property as possible – use gravel, interlocking stone or brick instead of concrete or asphalt.
- Sweep driveways and sidewalks instead of hosing them off.
- Avoid the use of harsh chemicals, including fertilizers and pesticides, whenever possible.
- Choose environmentally friendly pest or weed control options.
- Do not pour any chemicals down the drain, including down storm drains.
- Properly handle, store and dispose of hazardous substances and fuels – refer to EOP 10: Hazardous Waste & Fuel Management Measures.
- All soil and fill brought onto Leq'á:mel lands must be free of contamination – refer to EOP 7: Soil & Fill Management Measures.
- Land development must be conducted in such a way as to not have adverse impacts on groundwater sources – refer to EOP 9: Land Development Management Measures.

Best management practices for the protection of surface water that must be employed during **all land development activities** on Leq'á:mel lands include, but are not limited to:

- **Planning and site selection:**
  - Conduct an inventory of surface waters and natural drainage patterns at the site prior to development to inform development plans and associated protection and mitigation measures.
  - Design and plan activities so that disturbance to and impacts on surface water is avoided, or at least minimized.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

- Design projects to minimize loss or disturbance to riparian vegetation.
- Build away from flood plains.
- Avoid building structures on areas that are inherently unstable (*e.g.*, floodplains, alluvial fans) and may result in erosion and scouring of stream beds.
- Avoid or reduce the number of stream crossings in the design.

- **During land development:**
  - Up-to-date erosion and sediment control practices (*e.g.*, Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia).
  - Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
  - Minimize duration of in-water work, where required.
  - Effective stormwater management.
  - Limit the amount of impervious surfaces (*e.g.*, pavement, cement) to reduce run-off.
  - Maintain riparian vegetation cover for bank stabilization and reduce erosion.
  - Minimize impacts from roads.
  - Minimize the size of clearance areas.
  - Conduct environmental monitoring during construction activities.
  - Using natural landscape techniques and species.
- **Contaminant and spill management:**
  - Do not allow chemicals or other materials to enter watercourses.
  - Develop a response plan in the case of chemical or sediment releases.
  - Building materials in watercourses should not release or leach substances.

Best management practices for **erosion and sediment control** that must be employed during all land development activities on Leq'á:mel lands include, but are not limited to:

- Identify sensitive habitat areas and natural waterbodies that may be impacted.
- Develop an Erosion and Sediment Control Plan for all construction activities.
- Do not stockpile/store soils near surface waters.
- Retain existing vegetation/ground cover where possible to limit the exposure of soils and use effective erosion prevention measures where this is not possible.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

- Manage sediment using silt fencing, fabric bags, geotextile, etc.
- Re-vegetate exposed soils as quickly as possible using native plant species.
- Monitor and assess for signs of erosion or sedimentation.

Guidelines (most up-to-date versions) that must be used during any **surface water quality assessment and monitoring** on Leq'á:mel lands include, but are not limited to:

- Canadian Water Quality Guidelines for the Protection of Aquatic Life
- Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses
- BC Guidelines for Aquatic Life, Wildlife & Agriculture

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Safe Drinking Water for First Nations Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Management Act*
  - Contaminated Sites Regulation
  - Hazardous Waste Regulation
  - Agricultural Waste Control Regulation
  - Spill Reporting Regulation
  - Waste Discharge Regulation
- *Water Sustainability Act*
- *Water Protection Act*

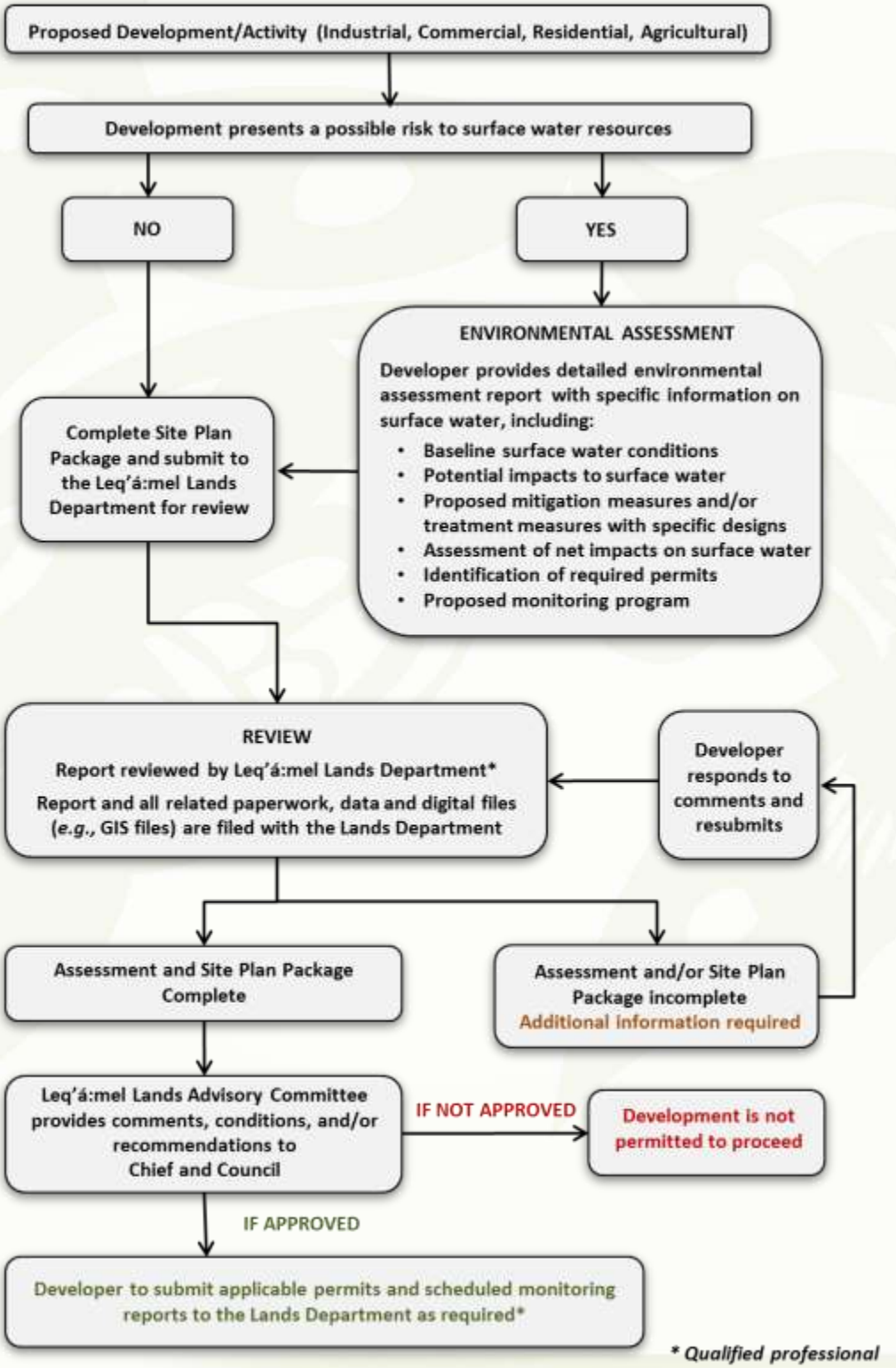
RELEVENT DOCUMENTATION

- BC Ministry of Environment: Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures

RELEVENT DOCUMENTATION (Cont'd)

- EOP-5: Solid Waste Management Measures
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 4: Surface Water Protection Procedures for Proposed Developments/Activities



** Qualified professional services may be required.*

EOP-5 SOLID WASTE MANAGEMENT MEASURES

PURPOSE

This document provides information to all community members and developers on required solid waste management procedures to be employed during any land development activities and operations on Leq'á:mel lands. Effective solid waste management is important to minimize the potential for negative impacts to human and environmental health.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage solid waste on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to solid waste management;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents involving solid waste (*e.g.,* illegal dumping, open burning) to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Leq'á:mel Transfer Station on the northeastern portion Skweahm.

DEFINITIONS

Solid waste: Refers to non-hazardous trash or garbage (including compostable and recyclable materials) that is produced by residential, commercial, institutional, demolition, land clearing, or construction sources.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 5: Solid Waste Sorting and Management Procedures outlines how solid waste is to be managed on Leq'á:mel lands.

Best management practices for **solid waste management** on Leq'á:mel lands include, but are not limited to:

- **Reduction of waste:**
  - Understand what waste your household generates and how much is disposed of weekly. This will help you to develop the most efficient waste reduction strategy (*e.g.*, identify and avoid materials with un-necessary packaging).
  - Re-use items that would otherwise become waste for another purpose.
  - Donate items that are in good condition for others to use instead of throwing out.
  - Encourage everyone in your household to participate.
- **Diversion of waste:**
  - Contact the Leq'á:mel Lands Department for an up to date listing of what is accepted and recycled at the Leq'á:mel Transfer Station.
  - It is best to sort household waste on a daily basis into different bins or containers depending upon the category of waste (*e.g.,* recyclable, non-recyclable, hazardous).
  - All recyclables should be clean and dry and separated into appropriate categories.
  - Check out the online Waste Wizard and/or Recyclepedia, if you are not sure how to properly dispose of something.
- Do not bury, burn, litter, or illegally dump materials anywhere on Leq'á:mel lands.
- Do not store waste materials on your property – donate items in good condition you are not using and properly dispose of items that cannot be re-used.

All land developers must have an appropriate and **approved solid waste management plan** in place during construction (and operation for non-residential developments) that includes details on how construction and demolition waste will be disposed of.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Indian Act*
  - Indian Reserve Waste Disposal Regulation
- *Canadian Environmental Assessment Act*

RELEVANT LEGISLATION (Cont'd)

- *Canadian Environmental Protection Act*
- *Migratory Birds Convention Act*

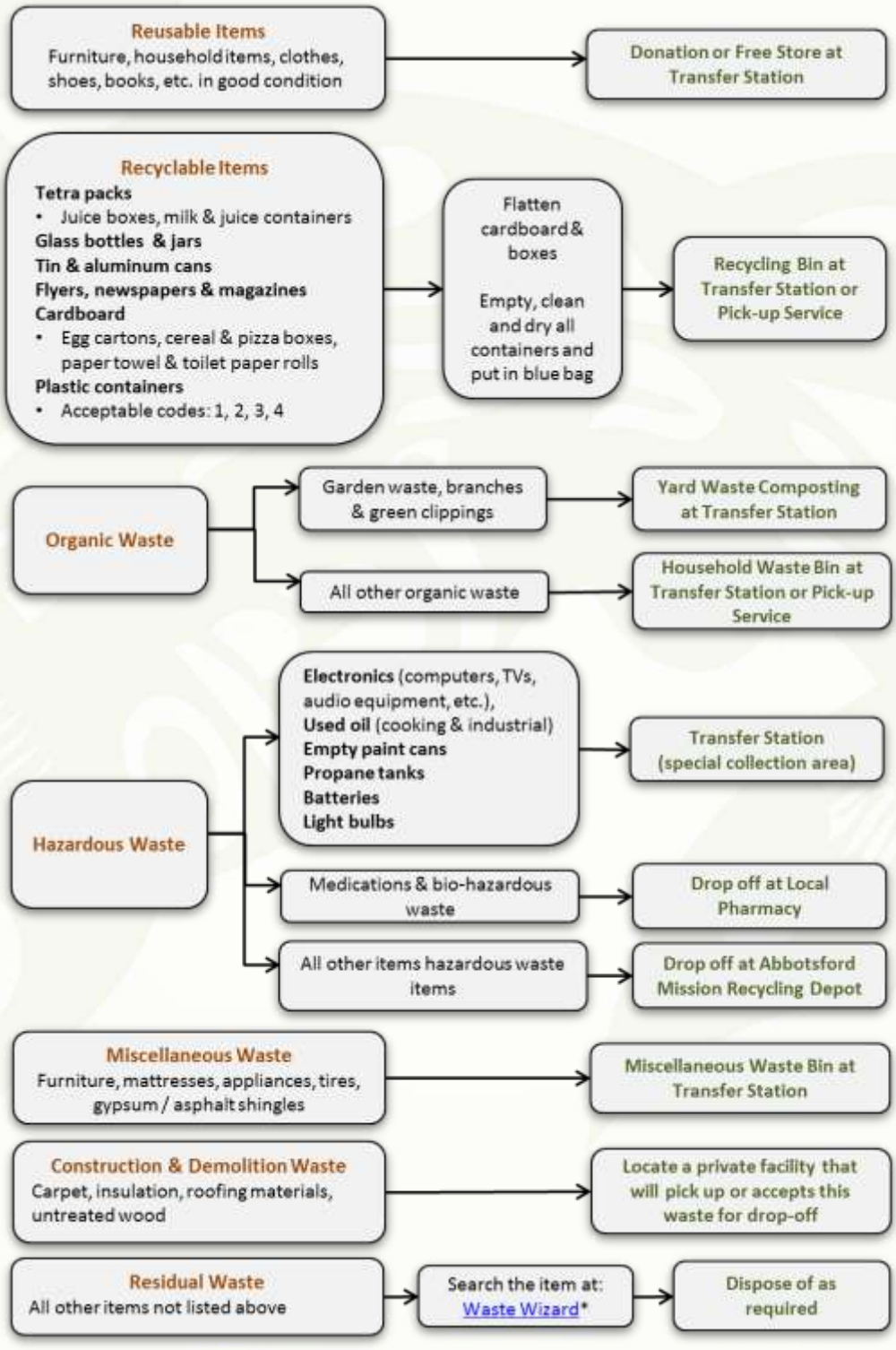
Provincial – including but not limited to:

- *Environmental Management Act*
  - Open Burning Smoke Control Regulation
  - Waste Discharge Regulation
  - Recycling Regulation
- *Public Health Act*
  - Health Hazards Regulation

RELEVENT DOCUMENTATION

- Mission Recycling Depot Drop-off Guide
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 5: Solid Waste Sorting and Management Procedures



* http://www.abbotsford.ca/city_services/garbage_recycling_and_composting/waste_wizard.htm

EOP-6 CULTURAL RESOURCES PROTECTION MEASURES

PURPOSE

This document provides information to all community members and developers on required measures to protect cultural and heritage resources on and adjacent to Leq'á:mel lands. There is generally high potential for heritage resources and significant archaeological sites to be present on Leq'á:mel lands given the rich cultural history of the area. Ensuring cultural awareness among youth and the larger community and maintaining culture for future generations is an important part of building community belonging and pride.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage activities that have the potential to negatively impact cultural resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to cultural resource protection;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact cultural and/or heritage resources on Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976

Stó:lō Research and Resource Management Centre
Building 10, 7201 Vedder Road,
Chilliwack, BC V2R 4G5
(604) 824-2420 / 1-800-565-6004
www.srrmcentre.com

FEATURES

Key cultural heritage resources on or adjacent to Leq'á:mel lands include:

- Provincially listed heritage site DhRm-2 on Skweahm
- Provincially listed heritage site DhRm-3 northeast of Skweahm
- Provincially listed heritage site DhRm-4 on Lakahahmen
- Sacred grounds on Lakahahmen and Skweahm
- Lakway and Sumas Cemeteries

DEFINITIONS

Ancestral human remains: the skeletal or otherwise physical remains of a deceased person or persons in all likelihood of Stó:lō ancestry.

Artefacts: objects that can be readily removed from the site of which they are a part; moveable objects (e.g., chipped stone flakes, knives, spears and arrowheads; tin cans; glass bottles and jars; basketry; personal gear; groundstone hand-mauls; bone pins; antler wedges; glass beads; looms; instruments; etc.).

Cultural resources: Refer to learned, collective human behaviours and practices (*e.g.,* language, social structure, beliefs, perceptions, values, knowledge, music, and arts) that connects, and may even define, a community. Includes heritage resources, which refer to objects, sites, or locations of traditional Leq'á:mel practices that are of historical, cultural, or archaeological significance to the community.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 6: Cultural Heritage Resource Protection Procedures MUST be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

EOP Process 7: Cultural or Heritage Resources Emergency Impact Guidelines must be followed in the even that such resources are encountered during any land development activities.

All **land development activities** on Leq'á:mel lands must abide by the best management practices and guidelines for the **protection of cultural and heritage resources** as outlined in the most up-to-date version of the Stó:lō Heritage Policy, which is administered by Stó:lō Research and Resource Management Centre. These include, but are not limited to:

- Archaeological Overview Assessments (AOA) must be conducted prior to any land disturbance activities that have the potential to disturb archaeological sites.
- If the AOA indicates that a site may be present, an Archaeological Impact Assessment should be conducted.

Certain developments may require **monitoring** by an archaeologist during construction activities that have the potential to disturb or damage cultural heritage resources on Leq'á:mel lands. **If required, members of Leq'á:mel will act as cultural monitors during site development where possible.**

RELEVANT

Federal – including but not limited to:

LEGISLATION

- *Canadian Environmental Assessment Act*
- *Cultural Property Export and Import Act*

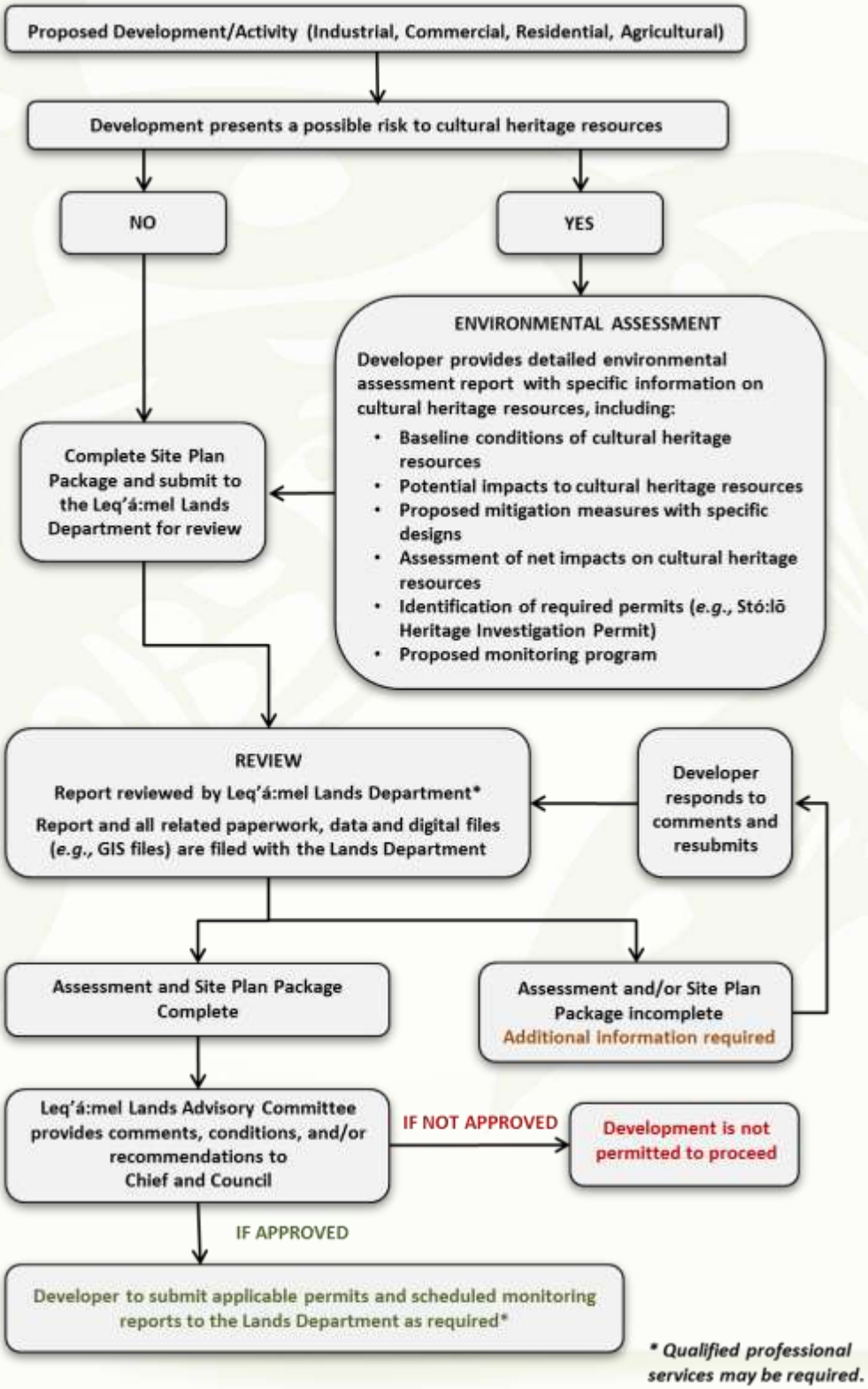
Provincial – including but not limited to:

- *Environmental Assessment Act*
- *Heritage Conservation Act*

RELEVENT DOCUMENTATION

- Stó:lō Heritage Policy
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures

EOP Process 6: Cultural Heritage Resources Protection Procedures for Proposed Developments/Activities



EOP Process 7: Cultural Heritage Resources Emergency Impact Guidelines

In the event that archaeological, cultural, or heritage resources are encountered during site operations, the contractor shall immediately stop construction, notify the Leq'á:mel Lands Department and comply with the policies and procedures identified in the Stó:lō Heritage Policy.

In the event that any item of particular archaeological, heritage, historical, cultural or scientific interest is found on the site, as between the contractor or the party who discovered the item(s) and Leq'á:mel, such item(s) shall be and remain the property of Leq'á:mel and/or the Stó:lō Nation.

The Leq'á:mel Lands Department will coordinate and work with the Stó:lō Research and Resource Management Centre (SRRMC) on behalf of the Stó:lō Nation.

Below are a set of management strategies (related to construction activities) that have been adapted from the Stó:lō Heritage Policy and the BC Ministry of Forest Lands and Natural Resources Operations' (MFLNRO) Archaeology Branch Policy regarding "Found Human Remains".

Management options will be reviewed and agreed upon between Leq'á:mel and the SRRMC. Management options will take into account the Stó:lō Heritage Policy, particularly related to:

- **Section 5.3.5** – Material Culture Sites / Objects
- **Section 5.3.6** – Stó:lō Ancestral Human Remains
- **Section 5.3.6.1** – Incidental Discovery of Stó:lō Ancestral Human Remains
- **Section 8.0** – Collection of Stó:lō Heritage Artefacts
- **Section 8.1** – Incidental Finding and Collection

Cultural Sites Chance Find Management Strategy

The following emergency impact management guidelines apply to cultural, heritage and archaeological sites. Emergency management procedures for suspected human burial sites are presented separately below. The contractor shall be familiar with the Stó:lō Heritage Policy and MFLNRO's Archaeology Branch Policy regarding "Found Human Remains", recognizing that the appropriate course of action may differ depending on whether or not the remains are found in an undisputed archaeological context (*i.e.*, with artefacts).

Initial Response by the Contractor

Step 1: The contractor shall immediately stop construction in the immediate vicinity of the cultural or archaeological site.

Step 2: The contractor shall contact the Leq'á:mel Lands Department for further guidance. SSRMC will be contacted by the Leq'á:mel Lands Department.

Step 3: The Leq'á:mel Lands Department and/or SRRMC will advise the contractor on further action.

Please refer to Table 1 in the Stó:lō Heritage Policy for further details.

Initial Action

Depending on the nature of the situation, one of the following responses is likely:

- Based on a telephone description of the incident, it may be decided that there are no further concerns, allowing construction to continue as planned; or
- A field visit by a SRRMC archaeologist may be required. In this case, the Leq'á:mel Lands Department will notify the SRRMC. It is anticipated that suitable protocols for such situations will be established in consultation with all interested parties and as per the Stó:lō Heritage Policy.

Management Options

For all management options, the SRRMC will be consulted for input into developing appropriate procedure(s) and protocols at the earliest time possible. Potential options related to land development activities could include but are not limited to:

Option 1: Avoidance through partial or complete project redesign or relocation. This ensures minimal impact to the archaeological site or heritage/cultural site and is the preferred option from a cultural resource management perspective. It can also be the least expensive option from a construction perspective.

Option 2: Salvage or emergency excavation, if necessary. This "data recovery" option is site destructive and it can delay construction. Consequently, salvage or emergency excavation is generally not a preferred option.

Option 3: Apply site protection measures, including both temporary strategies and long-term solutions. Temporary strategies could include erecting fencing or barricades to protect the archaeological or heritage site, while longer-term solutions could include capping the archaeology site with fill. Appropriate protection measures shall be identified on a site-specific basis.

Chance Find Impact Management for Human Remains

Initial Response by the Contractor

If definite or possible human remains are encountered:

Step 1: The contractor shall immediately stop construction in the vicinity of the remains.

Step 2: The contractor shall immediately contact the Leq'á:mel Lands Department for further guidance.

Step 3: The Leq'á:mel Lands Department will advise the contractor on further action.

Initial Action

- The Leq'á:mel Lands Department will contact the SRRMC and the RCMP;
- The Leq'á:mel Lands Department or the RCMP will contact the Office of the Coroner;
- Leq'á:mel representatives and a professional archaeologist or physical anthropologist from the SRRMC will visit the site as soon as possible; and

- If it is determined that the remains are Stó:lō and/or Aboriginal ancestry, the Stó:lō Heritage Policy will be followed.

Management Options

The Stó:lō Heritage Policy outlines the appropriate protocol for handling Stó:lō Ancestral and/or Aboriginal human remains and shall be followed. A human remains protocol shall be established prior to recommencement of any proposed construction. Two possible strategies are presented below, but others may, or could, be considered.

Option 1: Avoidance through partial or complete project redesign or relocation. This would ensure that the remains are protected from further disturbance.

Option 2: Salvage or emergency excavation to respectfully remove the remains for reburial as per the Stó:lō Heritage Policy.

The contractor shall be aware that removal of human remains and subsequent reburial might involve certain ceremonies or procedures that could delay construction. If the contractor has any concerns about possible archaeological, historic, or burial locations, the Leq'á:mel Lands Department shall be contacted for direction.

EOP-7 SOIL & FILL MANAGEMENT MEASURES

PURPOSE

This document provides information to all community members and developers on required soil and fill management procedures to be employed during any land development activities and operations on Leq'á:mel lands. It is important to properly manage soil and fill brought to and/or removed from Leq'á:mel lands to ensure deposited material is not contaminated, and to minimize the potential for human and environmental health risks.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage soil and fill on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to soil and fill management;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents involving soil and fill (*e.g.*, evidence or suspicion of contaminated fill or soil, importing soil or fill without a permit) to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

DEFINITIONS

Fill: Refers to soil that has been removed from one area and deposited in another area, typically to fill depressions and holes to make an area suitable for development.

Deposit: Means the act of moving soil and other material and placing it upon a parcel or contiguous parcels of land on which such soil and other material did not exist or stand.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

Soil: The mixture of organic matter, rock matter, minerals, as well as various organisms, in the upper layer of earth. Includes sand, clay, silt, sand, gravel, cobbles, boulder and peat.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 8: Incoming Soil & Fill Management Procedures **MUST** be followed **BEFORE** any soil or fill is brought onto on Leq'á:mel lands.

EOP Process 9: Outgoing Soil & Fill Management Procedures **MUST** be followed **BEFORE** any soil or fill is removed from Leq'á:mel lands.

The following best management practices must be followed **before soil is received** from a site:

- Find out the exact address where the soil comes from.
- Use Google maps or an equivalent to check that the location and use of the source site is consistent with the information provided.
- Many soil importers will provide documents that they believe can be used to assess environmental soil quality, such as geotechnical reports, which do not – when in doubt, have an environmental consultant review the material.
- Advise soil importers that random inspections and soil testing will be completed to assess soil quality and unsuitable material will need to be removed at their cost.
- Get a contract or agreement with the soil importer.
- Make the company delivering the soil sign off that the soil is not contaminated.
- Clearly identify that the contractor depositing the soil at the fill site will be responsible for the removal of any soil subsequently found to be contaminated or in violation of the above contract clause.

During any **excavation work**, contractors must notify the Lands Department if the following is observed:

- Unusual odour that may indicate the presence of contaminants (*e.g.*, gas or oil).
- Stained soils which are darker and may have a "wet" appearance typically indicate the presence of a spill area. Contaminated soils may also have a distinct oily feel. Typically, staining (contamination) is accompanied by an odour.
- If staining, odour, buried debris, or hydrocarbon sheen is observed associated with infiltrating groundwater, the contractor must immediately stop work and advise of the suspected contamination.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Transportation of Dangerous Goods Act*

RELEVANT

LEGISLATION (Cont'd)

- *Fisheries Act*
- *Migratory Birds Convention Act*

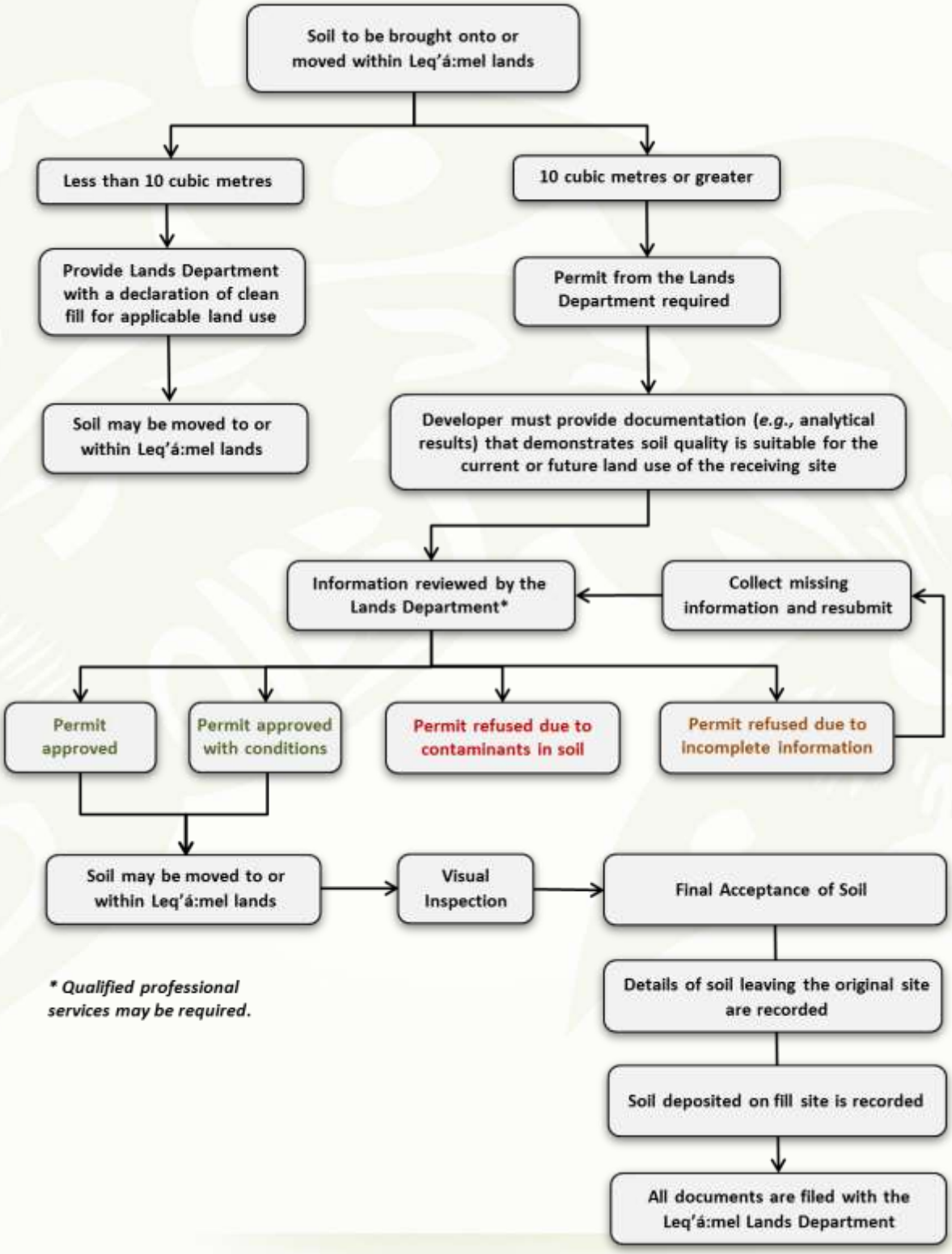
Provincial – including but not limited to:

- *Environmental Management Act*
  - Contaminated Sites Regulation
- *Transportation of Dangerous Goods Act*

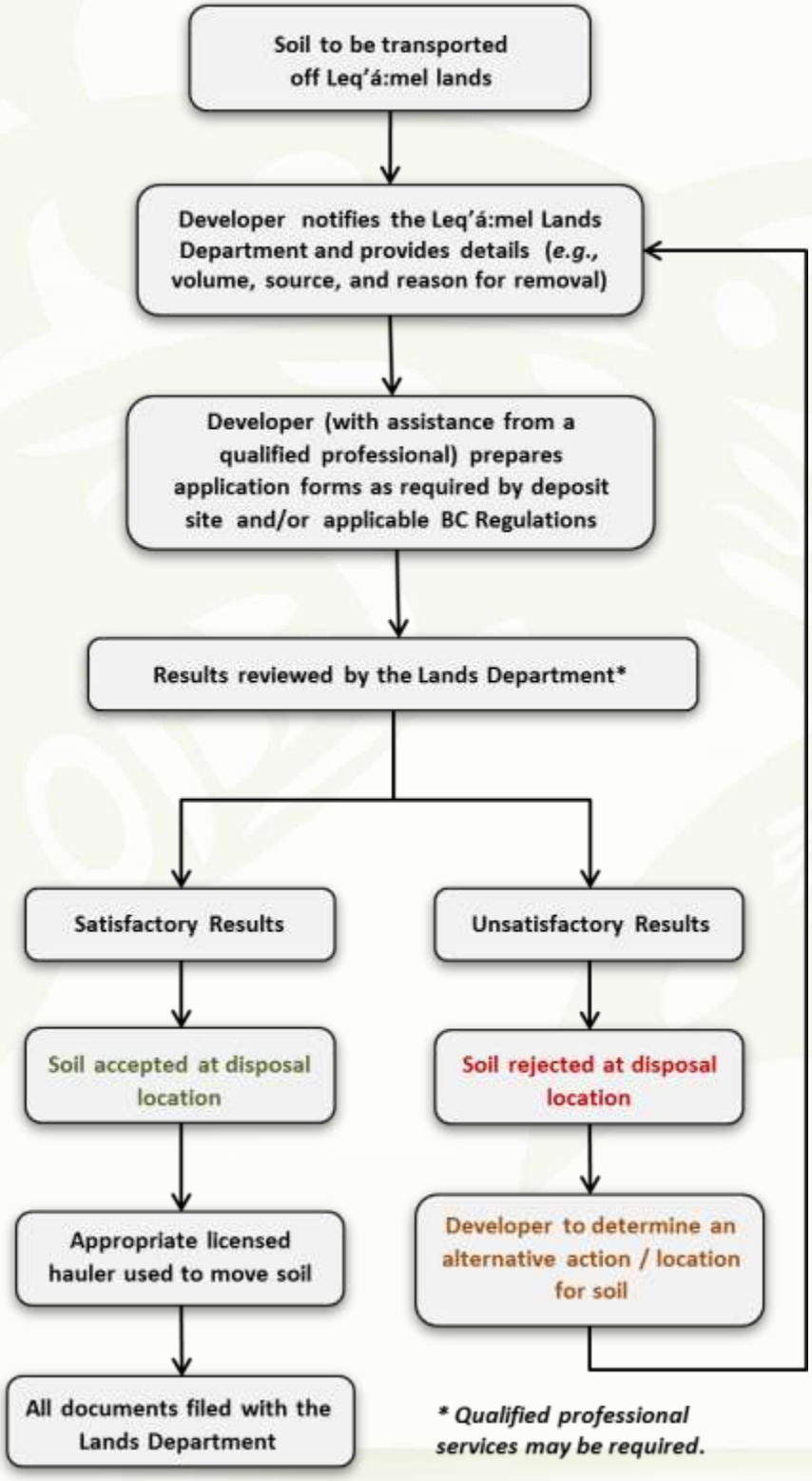
RELEVENT DOCUMENTATION

- EOP-1: Groundwater Protection Measures
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 8: Incoming Soil & Fill Management Procedures



EOP Process 9: Outgoing Soil & Fill Management Procedures



EOP-8 NATURAL RESOURCES DEVELOPMENT PROTECTION MEASURES

PURPOSE

This document provides information to all community members and developers on required procedures to be employed during any natural resource development and operations on Leq'á:mel lands. It is important to properly manage natural resource development to avoid, or at least minimize, impacts on the natural environment and human health.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage development of natural resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to natural resource development;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents involving natural resource development to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Agricultural activities are currently undertaken on the following parcels:

- Zaitscullachan (entire parcel)
- Lakahahmen (central and southern portion)
- Holachten (easternmost portion, east of the rail line)
- Skweahm (several portions)
- Papekwatchin (northern portion)

DEFINITIONS

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

DEFINITIONS (Cont'd)

Natural resources: Resources that exist in the natural environment, including water, land and minerals, vegetation and wildlife.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

Best management practices to employed during **agricultural activities** on Leq'á:mel lands include, but are not limited to:

- **Proper storage of potentially hazardous products:**
  - Storage locations should be designated, clearly marked and secure.
  - Materials (*e.g.,* fertilizers and pesticides) should be stored above the flood plain and at least 30 m from any well or watercourse.
  - An Emergency Plan that outlines steps in the event of spill should be posted near where chemicals are stored.
- **Responsible pesticide use:**
  - Pesticides are only one method of pest control and should be used in conjunction with other pest management techniques.
  - Only pesticides approved for use by Health Canada under the *Pest Control Products Act* can be used.
  - All pesticides must be used according to safety guidelines specified on each pesticide label.
  - Farmers must strive to ensure pesticides are contained within the boundaries of the properties they are farming.
  - Pesticides can be applied to and along ditches, provided they are registered for that use and all legal requirements are met.
- **Responsible fertilizer/soil conditioner use:**
  - Fertilizers and soil conditioners must be spread evenly over the soil and are most effective when incorporated into the crop root zone.
  - Fertilizers must be applied at a rate which takes into account the nutrient value of the fertilizer, the nutrient absorption capacity of the land, and the nutrient use by the crop grown on the land.
  - Use natural fertilizers instead of synthetic ones.
  - Excessive application should be avoided to prevent nutrients from entering nearby watercourses or groundwater sources.

Refer to EOP 9: Land Development Management Measures for best management practices that must be employed for other proposed natural resource development activities.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Pest Control Products Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Management Act*
  - Agricultural Waste Control Regulation
  - Spill Reporting Regulation
  - Hazardous Waste Regulation
- *Forest and Range Practices Act*
- *Wildlife Act*
- *Water Sustainability Act*
- *Water Protection Act*
- *Drinking Water Protection Act*

Leq'á:mel Laws – including but not limited to:

- Zoning Law

RELEVENT DOCUMENTATION

- Government of BC: Guidelines for good agricultural practices
- Leq'á:mel Development Procedures (2016)
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP 4: Surface Water Protection Measures
- EOP-7: Soil & Fill Management Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste Management Measures

EOP-9 LAND DEVELOPMENT MANAGEMENT MEASURES

PURPOSE

This document provides information to all community members and developers on required land development and management procedures to be employed during any land development activities and operations on Leq'á:mel lands. A clear land development process that considers environmental and cultural context and community needs, and incorporates environmental regulations and policies, is needed to protect environmental and human health on Leq'á:mel lands.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to avoid and/or mitigate the potential for negative environmental impacts as a result of land development. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to land development;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents and unregistered land development activities that have the potential to negatively impact the environment to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

DEFINITIONS

Land development: Refers to the alteration of land and includes the building of new infrastructure and modifications or renovations to existing infrastructure.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

All proposed land development activities on Leq'á:mel lands must follow **EOP Process 10: General Land Development Procedures** and the application and approvals process and the land development guidelines set out in the **Leq'á:mel Development Procedures Manual**.

Control measures that must be adhered to during any **land development** on Leq'á:mel lands include, but are not limited to:

- Developers are required to demonstrate through the submission of an Environmental Assessment Report that the proposed development or land and resource use will not pose a threat of irreparable environmental or cultural resource damage or pose a serious risk to human health.
- All proposed land development activities must adhere to the following:
    - Leq'á:mel Zoning Law
    - Stó:lō Heritage Policy
    - BC Building Code 2012
    - BC Fire Code 2012
    - BC Plumbing Code 2012
    - Any other applicable laws, bylaws or regulations regarding the protection of the environment
- Development activities cannot be undertaken until approval by Leq'á:mel leadership has been received.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *First Nations Land Management Act*
- *Indian Act*
- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

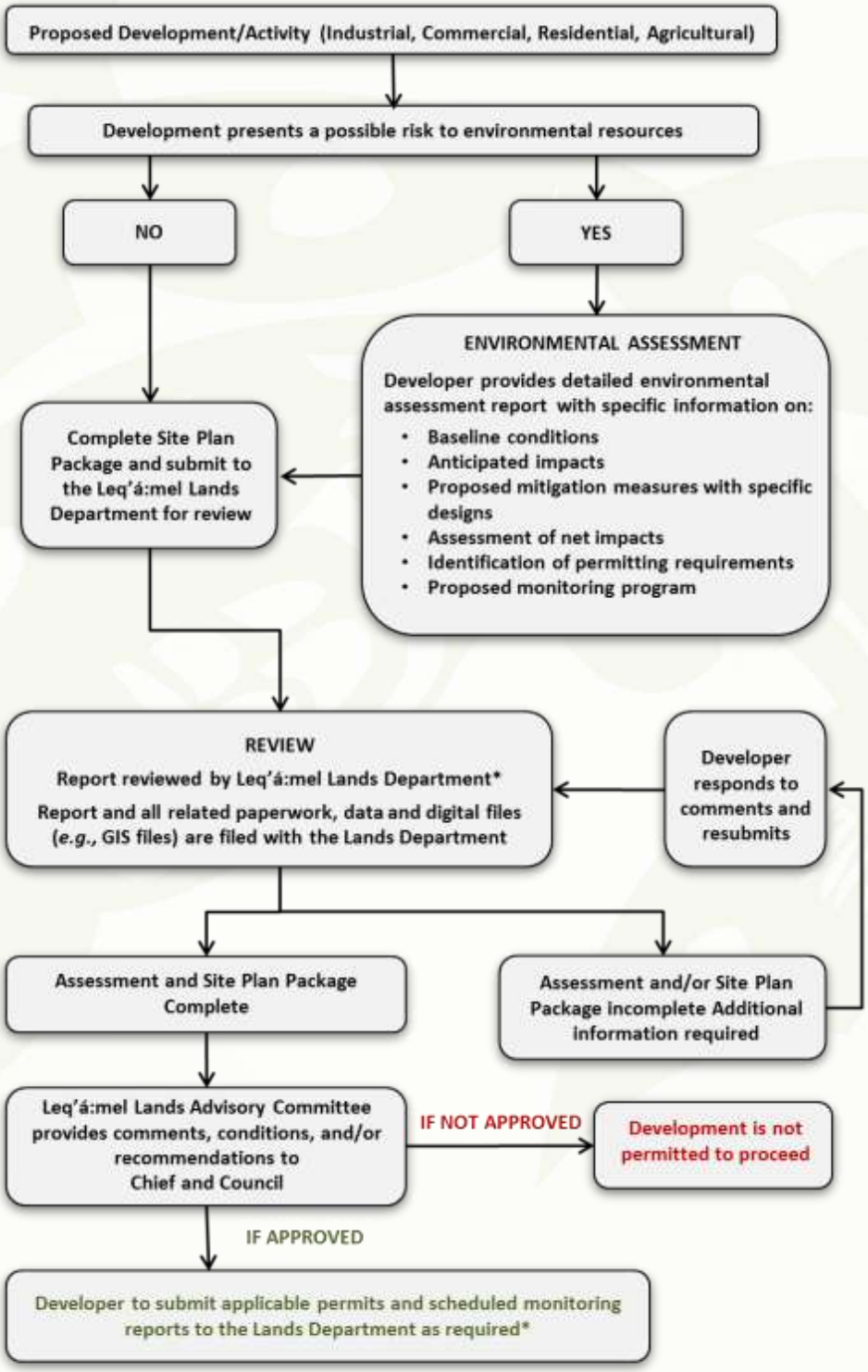
Provincial – including but not limited to:

- *Environmental Assessment Act*
- *Water Sustainability Act*
- *Wildlife Act*
- *Fisheries Protection Act*
- *Heritage Conservation Act*

RELEVENT DOCUMENTATION

- Leq'á:mel Development Procedures (2016)
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP 4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP 6: Cultural Resources Protection Measures
- EOP-7: Soil & Fill Management Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste Management Measures

EOP Process 10: General land Development Procedures



** Qualified professional services may be required.*

EOP-10 HAZARDOUS WASTE & FUEL MANAGEMENT MEASURES

PURPOSE

This document provides information to all community members and developers on required hazardous waste and fuel management procedures to be employed during any land development activities and operations on Leq'á:mel lands. Proper handling, storage and disposal procedures for hazardous wastes and fuels, including spill response and mitigation measures, are required to prevent the release of contaminants into the environment, and the associated impacts on human and environmental health.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage hazardous waste and fuel management on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to hazardous waste and fuel management;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents involving hazardous waste and fuel management (*e.g.*, illegal dumping) to the Leq'á:mel Lands Department (and the Provincial Emergency Program for spills in amounts requiring external notification) immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976

Provincial Emergency Program
1-800-663-3456

FEATURES

Some household hazardous waste items are accepted at the Leq'á:mel transfer station.

Fuel storage on Leq'á:mel lands includes:

- Above-ground propane storage tanks (used for heating of buildings)
- Above-ground diesel storage tank at the Public Works maintenance yard
- Gas station on Skweahm

DEFINITIONS

Bio-hazardous waste: Refers to any waste containing infectious materials or potentially infectious substances such as blood. Of special concern are sharp wastes such as needles, blades, glass pipettes, and other wastes that can cause injury during handling.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

Hazardous waste: Refers to refers to wastes that are potentially hazardous to human and/or environmental health, and includes wastes that are explosive, gaseous, flammable, toxic, radioactive, corrosive, combustible or leachable.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

Common household products that are hazardous include:

Cleaning products:

- oven cleaners
- drain cleaners
- wood and metal cleaners and polishes
- toilet cleaners
- tub, tile, shower cleaners
- bleach
- chemicals to treat pools

Automotive products:

- motor oil and fuel additives
- air conditioning refrigerants
- starter fluids
- automotive batteries
- transmission and brake fluid
- antifreeze

Personal care products:

- medications
- nail polish and remover
- hair sprays and related products
- medical needs and syringes

Indoor/outdoor pesticides:

- ant sprays
- cockroach sprays and baits
- flea repellents
- bug sprays
- insecticides
- pesticides
- fungicides/wood preservatives
- rodent poisons and bait

Workshop/painting supplies:

- adhesives and glues
- oil or enamel based paint
- stains and finishes
- photographic chemicals
- fixatives and other solvents

Miscellaneous:

- batteries
- mercury thermostats or thermometers
- fluorescent light bulbs
- aerosol cans

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

Best management practices to deal with the **handling, storage, and disposal of common household hazardous products**, include but are not limited to:

- Avoid buying hazardous materials and products if non-hazardous option is available.
- Use up any hazardous products you have.
- Give the product to someone else who will use it if you no longer need it.
- Confirm with available resources whether waste items are considered hazardous waste prior to disposal:
    - Check out the online Waste Wizard and/or Recyclepedia, if you are not sure how to properly dispose of something.
    - Take it to a nearby hazardous waste collection depot.
- Treat unknown (unlabeled) wastes as hazardous waste.
- **Do not:**
    - Throw hazardous materials in the garbage.
    - Pour hazardous materials down the drain or flush them down the toilet.
    - Burn hazardous materials.
    - Bury or dump hazardous materials.

Best practices associated with managing **household bio-hazardous wastes** include:

- Waste produced that may be classified as bio-hazardous must be disposed of appropriately.
- Drop boxes or sharps containers should be installed in public washrooms to encourage safe disposal.
- Bio-hazardous materials unsuitable for disposal in the sharps containers should be taken to an approved disposal location.

All underground storage tank systems and aboveground storage tank systems on Leq'á:mel lands that have a **capacity of more than 230 litres** and that are designed to be installed in a fixed location on must abide by the **Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.**

Owners of all **new and/or upgraded tank systems** must provide supporting documentation to the Lands Department to show compliance with **Environment Canada Storage Tanks Regulations** and the **Canadian Standards Association Standard B139, "Installation Code**

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

for Oil-Burning Equipment".

EOP Process 11: Fuel Tank Inspection Procedures **MUST** be followed by all residents and operators on Leq'á:mel lands.

In the event of a fuel spill, **EOP Process 12: General Fuel Spill Response Procedures** **MUST** be followed by all residents and operators on Leq'á:mel lands. Spill reporting **MUST** follow the procedures set out in **EOP Process 13: General Spill Reporting Procedures**.

General BMPS that must be employed during **fuel handling and storage** on Leq'á:mel lands include, but are not limited to:

- Containers shall be filled and capped in manner that prevents leakage.
- Containers shall be appropriate for the product being contained.
- Product/Workplace Hazardous Materials Information System labels are required on containers identifying contents and hazards.
- Current Material Safety Data Sheets must be maintained in a location available to all people involved in fuel handling, storage and disposal.
- Tanks must be maintained and in good condition (free of rust, dents, and leaks).
- Storage locations must be vented and have appropriate fire extinguishers that are annually inspected with proper tags.
- Operators must conduct regular inspections of fuel tanks to ensure proper requirements are met.
- Post no smoking signs at all dispensing and fuel transfer sites.
- Fuel tanks should be located away from groundwater wells or surface waters.
- Store containers at least 3 m away from any building or in a building properly designed for storage.
- Store drums and containers in an upright position.
- Dispense fuel from upright drums and containers using an approved pump.
- All small containers (less than 230 litres of 50 gallons, including jerry cans, pails, canisters, and drums) that are stored at or near homes should be kept away from roadways and pedestrians, out of direct sunlight, and protected from potential impact.
- Do not fill containers beyond their safe filling level (~90% full).
- Use the proper dispensing pump designed for the product being handled.
- Hoses and nozzles must be maintained in good repair and do not leak.
- Operators must stay with the nozzle at all times while dispensing fuel.
- Recover spills as appropriate.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

- Contact the Provincial Emergency Program (PEP) in the event of a fuel spill (**1-800-663-3456**).

General BMPS that must be employed during **fuel transport** on Leq'á:mel lands include, but are not limited to:

- All vehicles transporting fuel must have an appropriate spill kit and the driver must be trained and knowledgeable in its use.
- Vehicles transporting fuels must meet requirements of the *Transport of Dangerous Goods Act* and BC Ministry of Transportation.
- If a combined fuel load is greater than 2,000 L (440 gallons) a shipping document must be filled out for the cargo, the driver must have proof of "Transport of Dangerous Goods (TDG)" certified training and the load must a TDG placard appropriate for the fuels being transported.
- All loads must be secured to prevent tipping or fuel loss. Fuel drums being transported by truck must be stacked end on end and transported by vehicles with sides or side boards.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Transportation of Dangerous Goods Act*
  - Transportation of Dangerous Goods Regulations
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Provincial – including but not limited to:

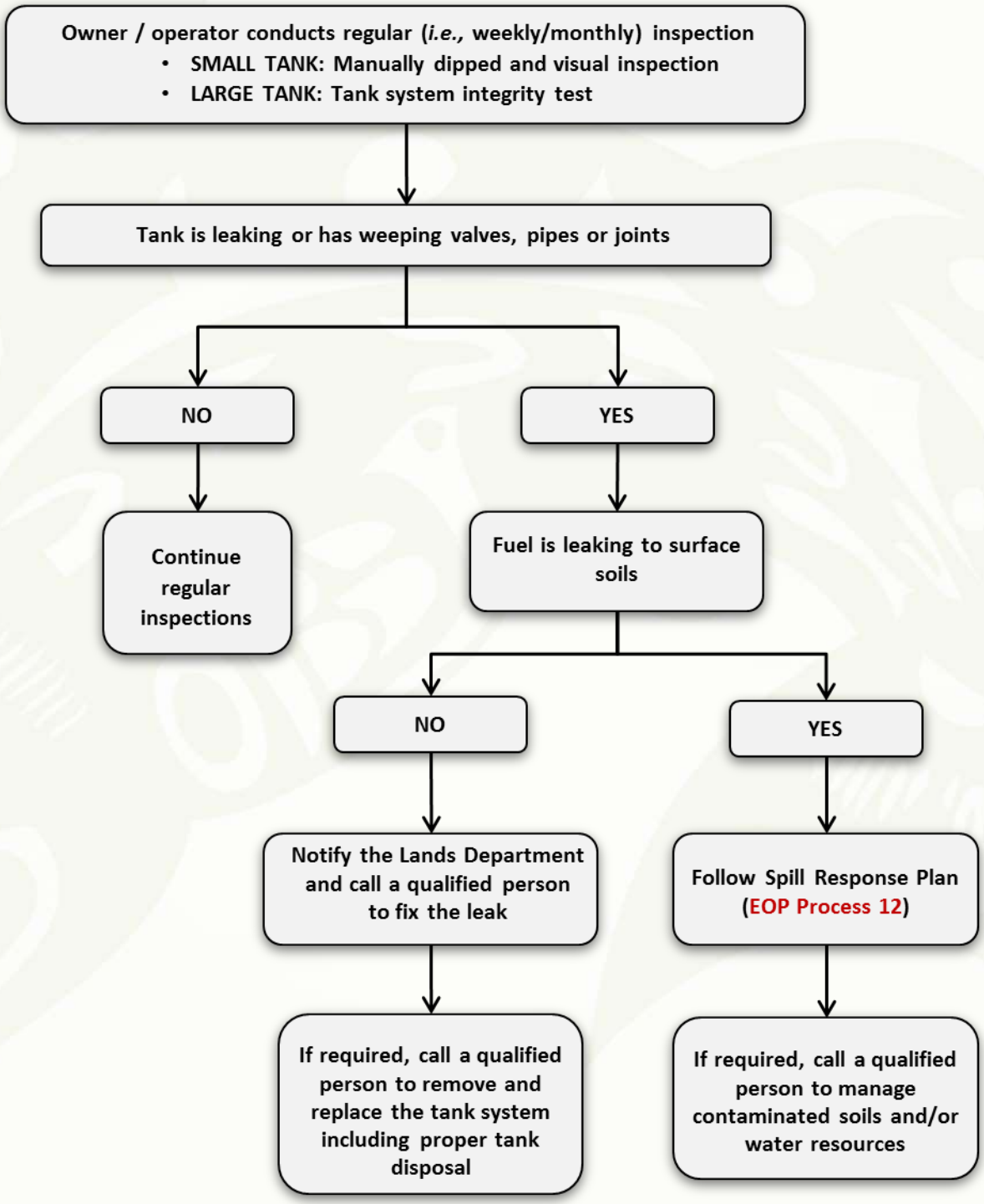
- *Environmental Management Act*
  - Spill Reporting Regulation
  - Contaminated Sites Regulation
- *Transportation of Dangerous Goods Act*
  - Transportation of Dangerous Goods Regulations
- *Drinking Water Protection Act*
- *Wildlife Act*
- *Fish Protection Act*

RELEVENT DOCUMENTATION

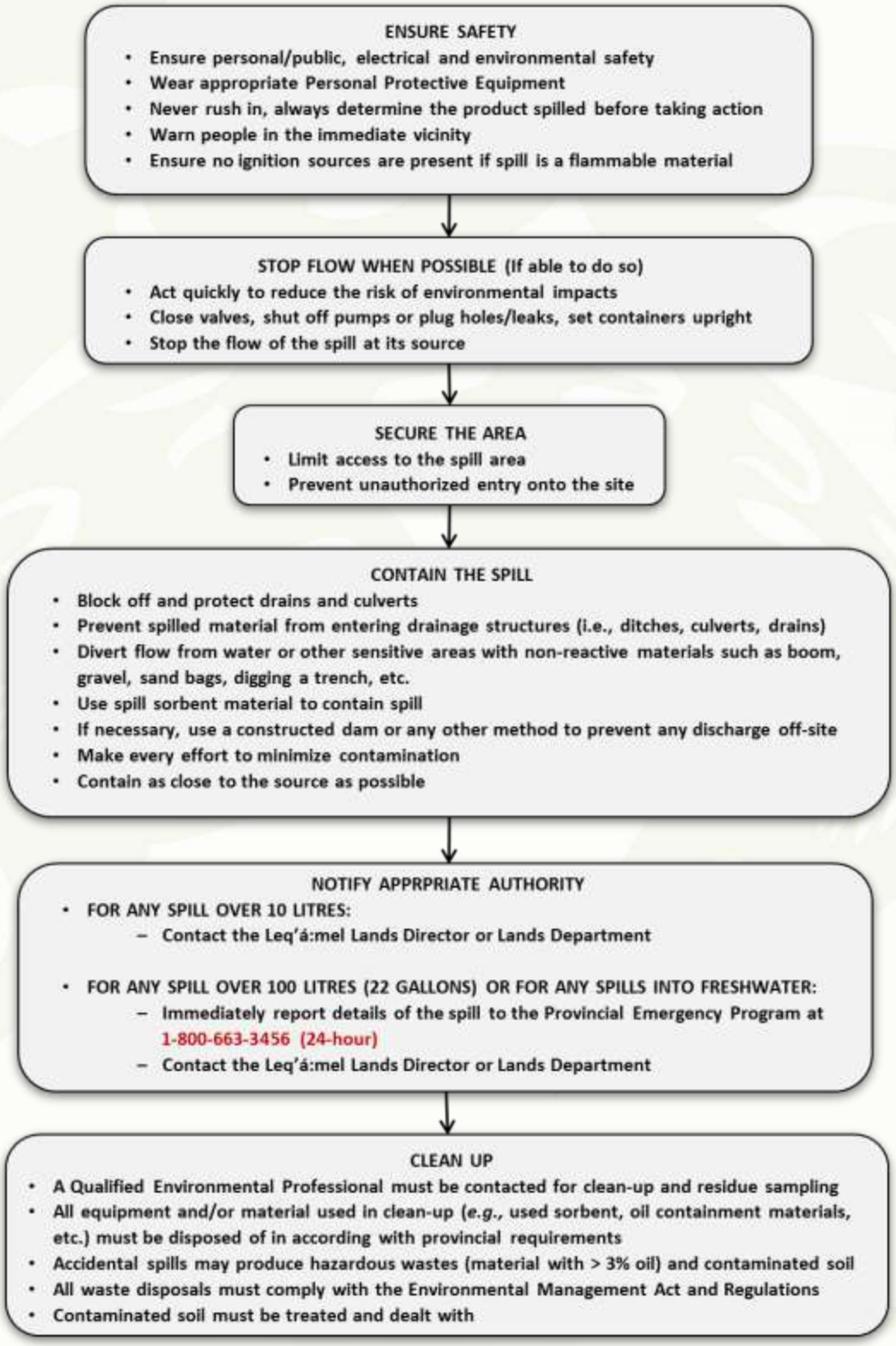
RELEVENT DOCUMENTATION (Cont'd)

- Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products
- Environment Canada Storage Tanks Regulations
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP 4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP-7: Soil & Fill Management Measures
- EOP-9: Land Development Management Measures

EOP Process 11: Fuel Tank Inspection Procedures



EOP Process 12: General Fuel Spill Response Procedures



EOP Process 13: General Spill Reporting Procedures

An Environmental Incident Report (EIR) should be prepared as soon as possible following an incident. The developer or contractor will be responsible for completing the EIR. The target for reporting is within one working day following the time of the incident.

An Environmental Incident is characterized as causing, or has the potential for causing one or more of the following:

- Adverse effect on fish, wildlife or other environmental resources;
- Adverse publicity with respect to environment; and
- Legal action with respect to violation of statutes or environmental damage.

Examples of Environmental Incidents include, but are not limited to:

- Spills of oil, fuel, or chemicals;
- Discharge of hazardous substances into fish-bearing water;
- High or low flows that affect fish or fish habitat, wildlife or recreation; and
- Violation of environmental regulations, permits or approvals.

What Incidents are Reportable?

Any environmental incidents will be immediately reported to the Leq'á:mel Lands Department and the appropriate government agencies.

Please note that all spills to water must be reported immediately!

If in doubt as to whether or not to report a spill, err on the side of caution and report the spill.

How Do You Report a Spill?

Make sure you have the following information ready to report to the appropriate government agencies:

- Name and phone number of person reporting the spill;
- Name and phone number of person involved with the spill;
- Location and time of the spill;
- Type and quantity of material spilled;
- Cause and effect of spill;
- Details of action taken or proposed to contain the spill and minimize its effect; and
- Names of other persons or agencies that advised regarding the spill.

When Should a Spill Be Reported Externally?

Spills of the following substances must be report externally to the **Provincial Emergency Program** (**PEP**) at **1-800-663-3456** (24-hour) if the estimated amount discharged meets or exceeds the quantities list below. All spills that meet the below criteria must be reported within one day of the incident. The Leq'á:mel Lands Department should always be notified immediately if a spill of any magnitude occurs on site.

Substance	Spill Quantity	Agency to Contact
Class 2.1 – **flammable gas (*e.g.*, propane)**	≥10 kg or 10 min.	**PEP**
Class 2.2 – **non-flammable gas (*e.g.*, SF6, CO2)**	≥10 kg or 10 min.	**PEP**
Class 3 – **flammable liquids**	≥100 litres	**PEP**
Class 8 – **corrosive liquid acids and caustics (*e.g.*, battery acid)**	5 kg or litres	**PEP**
Class 9 – **environmentally hazardous (*e.g.*, PCBs, used ethylene glycol)**	1 kg or litre	**PEP**
Oil and waste oil	≥100 litres	**PEP**
Other substances (*e.g.*, new antifreeze, power-wash water)	200 kg or litres	**PEP**
Pesticides and herbicides	1 kg or litre	**PEP**
Any quantity of a hazardous substance released into a waterbody	**All**	**PEP**

LEQ'Á:MEL FIRST NATION

ENVIRONMENTAL MANAGEMENT PLAN

PART 3: Environmental Operating Procedures

April 2017

Submitted to:

Submitted by:

DILLON CONSULTING

TABLE OF CONTENTS

TABLE OF PROCESSES

EOP-1 GROUNDWATER PROTECTION MEASURES

PURPOSE

This document provides information on required measures to protect groundwater on and adjacent to Leq'á:mel lands. Drinking water in the area is obtained from the Chilliwack-Rosedale, Nicomen Slough, and Lake Errock/Deroche Creek Aquifers, which can be easily contaminated given their shallow depths. Proper protection and management of groundwater on Leq'á:mel lands is important to both environmental and human health.

RESPONSIBILITY

It is the responsibility of all residents and land developers on Leq'á:mel lands to responsibly manage activities that have the potential to impact groundwater on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to groundwater;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact groundwater on or adjacent to Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

- Shallow aquifers with increased risk of contamination
- Community wells on Lakahahmen, Holachten and Skweahm
- Individual sandpoint wells on Lakahahmen (4), Holachten (2), Skweahm (8)
- Individual deep wells on Skweahm (1), Lakahahmen (1), and Zaitscullachan (1)

DEFINITIONS

Aquifer: An underground layer of rock, sediment, or soil that holds water and provides groundwater.

Groundwater: Water held underground in the soil or in pores and crevices in rock.

DEFINITIONS (Cont'd)

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 1: Groundwater Protection Procedures MUST be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

Best management practices for the **protection of groundwater sources** on Leq'á:mel lands include, but are not limited to:

- Wash cars on a lawn instead of a driveway to minimize run off.
- Check and repair any fluid leaks from vehicles.
- Proper maintenance and handling of septic sewer systems (see below).
- Avoid the use of harsh chemicals whenever possible.
- Choose environmentally friendly pest or weed control options.
- All soil and fill brought onto Leq'á:mel lands must be free of contamination – refer to EOP 7: Soil & Fill Management Measures.
- Properly handle, store and dispose of hazardous substances and fuels – refer to EOP 10: Hazardous Waste & Fuel Management Measures.
- Land development must be conducted in such a way as to not have adverse impacts on groundwater sources – refer to EOP 9: Land Development Management Measures.

Best management practices for the **maintenance of septic systems** on Leq'á:mel lands include, but are not limited to:

- Empty septic tanks as required and properly recover area with soil.
- Do not put any harmful chemicals down the drain or in the toilet.
- Do not flush anything down to the toilet or put anything down the drain that might cause a failure or clog in the septic system, including:
  - Diapers
  - Cooking oil and/or grease
  - Feminine hygiene products
  - Paper towels
  - Plastics
  - Condoms
  - Cotton swabs
  - Kitchen wastes
  - Kitty litter

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

Best management practices that must be employed during the **development and maintenance of drinking water wells** include, but are not limited to:

- Wells are constructed to meet relevant quality standards (*e.g.*, BC Ground Water Protection Regulation).
- A qualified contractor must drill the well and install the well pump.
- Well is constructed with surface seal (to prevent contaminants from the surface or shallow sub-surface entering the well.
- Well is constructed with secure well cap to prevent direct and unintended entry into the well of any water or undesirable substances at the surface of the ground, including floodwater, ponded water, and contaminants.
- Well is constructed with well casing stick-up to help flood-proof the well.
- Well head is graded to surface water away from the wellhead.
- A Well Identification Plate is installed.
- Controlled or stopped artesian flow mechanism is installed (to prevent wasting water).
- Pump is installed using qualified installer.
- Any potentially harmful or hazardous materials (*e.g.,* fertilizers, fuels, garbage, construction materials) are kept at a minimum of 3 metres from the wellhead.
- The well and pump are regularly inspected and maintained.
- A drinking water sampling and monitoring program is established and maintained to ensure the well water is potable.
- The well is deactivated or closed when no longer in use.

The most up-to-date versions of the following guidelines must be used during any **groundwater quality assessment and monitoring** on Leq'á:mel lands:

- Guidelines for Canadian Drinking Water Quality
- Federal Interim Groundwater Quality Guidelines
- Canadian Water Quality Guidelines for the Protection of Aquatic Life
- BC Guidelines for Drinking Water
- BC Guidelines for Aquatic Life, Wildlife & Agriculture

RELEVANT LEGISLATION

Federal legislation includes, but is not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Safe Drinking Water for First Nations Act*

RELEVANT LEGISLATION (Cont'd)

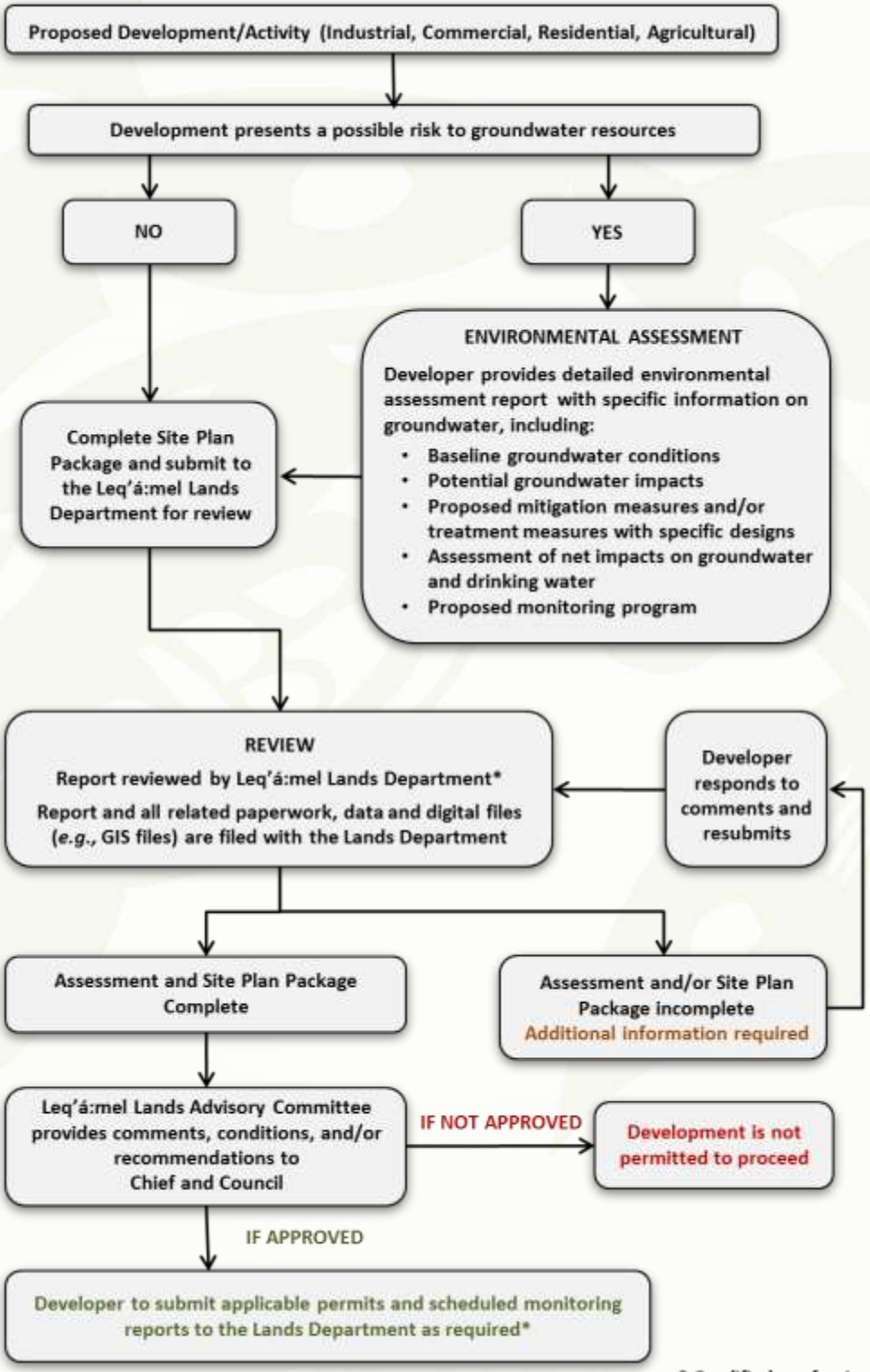
Provincial legislation includes, but is not limited to:

- *Environmental Assessment Act*
- *Environmental Management Act*
  - Contaminated Sites Regulation
  - Hazardous Waste Regulation
  - Municipal Wastewater Regulation
  - Spill Reporting Regulation
  - Waste Discharge Regulation
- *Water Sustainability Act*
  - Groundwater Protection Regulation
- *Water Protection Act*
- *Drinking Water Protection Act*
  - Drinking Water Protection Regulation
- *Public Health Act*
  - Health Hazards Regulation
  - Sewerage System Regulation

RELEVENT DOCUMENTATION

- BC Ministry of Environment: Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia
- BC Groundwater Protection Regulation
- EOP-4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP-7: Soil & Fill Management Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 1: Groundwater Protection Procedures for Proposed Developments/Activities



** Qualified professional services may be required.*

EOP-2 FISHERIES RESOURCES PROTECTION MEASURES

PURPOSE

This document provides information on required measures to protect fisheries resources on and adjacent to Leq'á:mel lands. The conservation and protection of fisheries resources is of significant importance to Leq'á:mel people for food, cultural, and ceremonial purposes.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage activities that have the potential to impacts fisheries resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to fisheries resource protection;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact fisheries resources on or adjacent to Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Fish bearing or supporting water features include:

- Fraser River
- Nicomen Slough
- Quaamich Slough
- Deroche Creek
- Zaitscullachan Slough
- Vedder and Sumas Rivers
- Wetland areas on Aylechootlook and Lackaway

Wetlands include:

- Aylechootlook
- Lackaway

DEFINITIONS

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

Fisheries resources: Refer to the fish and the aquatic species they depend on.

Habitat in terms of aquatic species: Spawning grounds and nursery, rearing, food supply, migration and any other area on which aquatic species depend directly or indirectly in order to carry out their life processes, or areas where aquatic formerly occurred and have the potential to be reintroduced.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 2: Fisheries Protection Procedures **MUST** be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

General best management practices for the **protection of fisheries resources** on Leq'á:mel lands include, but are not limited to:

- Carry out recreational activities in an environmentally responsible manner:
  - Leave no trace: take out whatever you bring into a natural area (*e.g.*, garbage, food).
  - Do not drive vehicles through sensitive habitat or fish-bearing streams.
- Properly handle, store and dispose of hazardous substances and fuels – refer to EOP 10: Hazardous Waste & Fuel Management Measures.

Best management practices for the protection of fisheries resources that must be employed during **all land development activities** on Leq'á:mel lands include, but are not limited to:

- **Planning and site selection:**
  - Conduct a bio-inventory of fisheries resources at the site prior to development to inform development plans and associated protection and mitigation measures.
  - Design and plan activities so that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided.
  - Design projects to minimize loss or disturbance to riparian vegetation.
  - Build away from flood plains.
  - Avoid building structures on areas that are inherently unstable (*e.g.*, floodplains, alluvial fans) and may result in erosion and scouring of stream bed.
  - Avoid or reduce the number of stream crossings in the design, and ensure fish passage is maintained where avoidance is not possible.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

  - Time land disturbance activities with respect for regional reduced-risk fisheries timing windows, as determined by the BC Ministry of Environment.

- **During land development:**
  - Up-to-date erosion and sediment control practices (*e.g.*, Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia).
  - Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
  - Minimize duration of in-water work, where required.
  - Effective stormwater management – refer to EOP 4: Surface Water Protection Measures.
  - Limit the amount of impervious surfaces (*e.g.*, pavement, cement) to reduce run-off.
  - Maintain riparian vegetation cover for bank stabilization and reduce erosion.
  - Minimize impacts from roads.
  - Minimize the size of clearance areas.
  - Conduct environmental monitoring during construction activities.
  - Using natural landscape techniques and species.
- **Contaminant and spill management:**
  - Do not allow chemicals or other materials to enter watercourses.
  - Develop a response plan in the case of chemical or sediment releases.
  - Building materials in watercourses should not release or leach substances.

Best management practices for **erosion and sediment control** that must be employed during all land development activities on Leq'á:mel lands include, but are not limited to:

- Identify sensitive habitat areas and natural waterbodies that may be impacted.
- Develop an Erosion and Sediment Control Plan for all construction activities.
- Do not stockpile/store soils near surface waters.
- Retain existing vegetation/ground cover where possible to limit the exposure of soils and use effective erosion prevention measures where this is not possible.
- Manage sediment using silt fencing, fabric bags, geotextile, etc.
- Re-vegetate exposed soils as quickly as possible using indigenous plant species.
- Monitor and assess for signs of erosion or sedimentation.

RELEVANT LEGISLATION

Federal legislation includes, but is not limited to:

- *Canadian Environmental Assessment Act*
- *Fisheries Act*
- *Species at Risk Act*

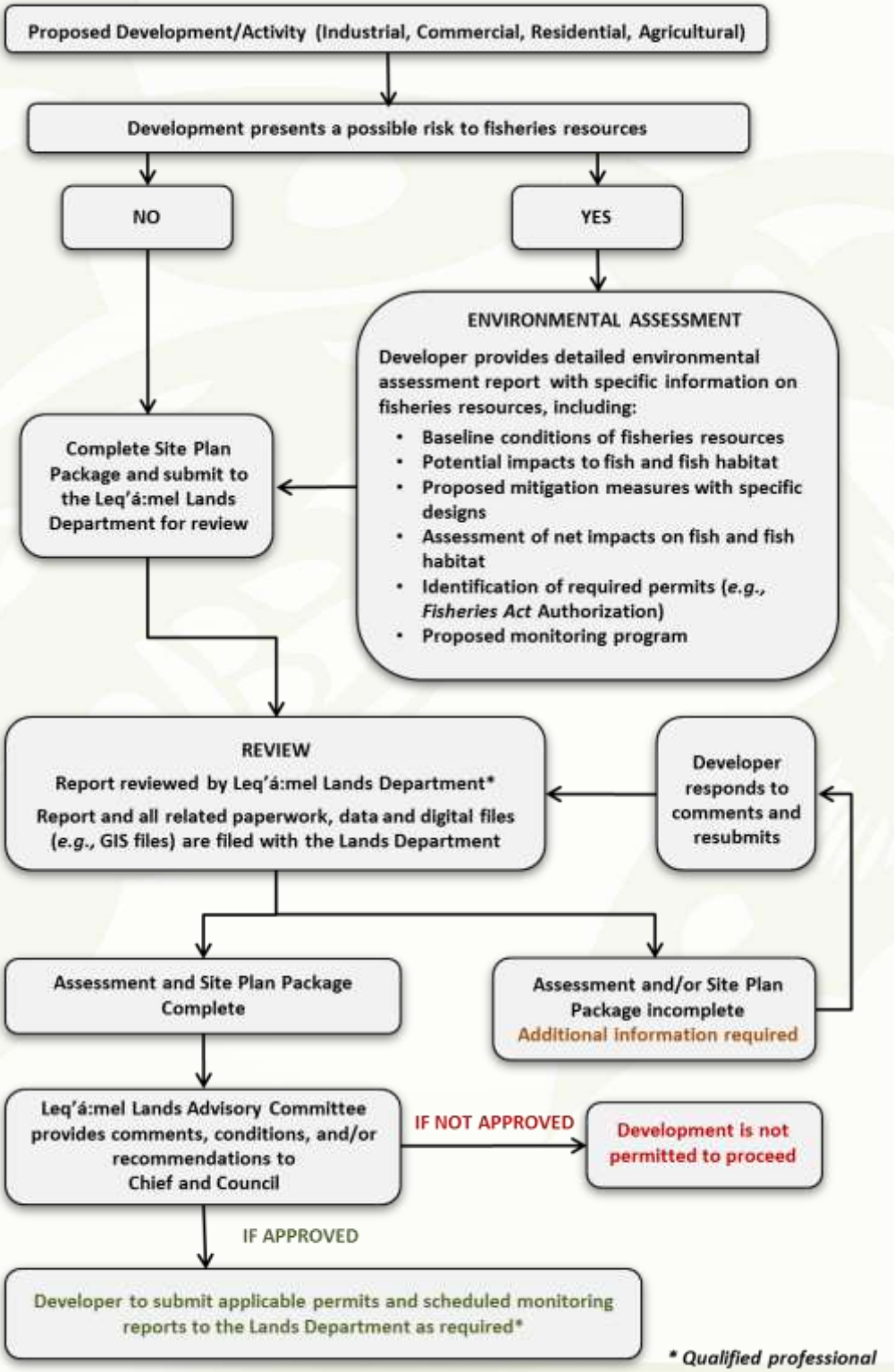
Provincial legislation includes, but is not limited to:

- *Environmental Management Act*
- *Water Sustainability Act*
- *Riparian Areas Protection Act*
- *Wildlife Act*
- *Water Protection Act*
- *Fish Protection Act*
    - British Columbia Riparian Areas Regulation

RELEVENT DOCUMENTATION

- BC Ministry of Environment (BC MOE): Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia
- BC MOE: Develop with Care Species Factsheets
- BC MOE: South Coast Region Information Package
- Fisheries and Oceans Canada: Measures to Avoid Causing Harm to Fish and Fish Habitat
- BC Ministry of the Environment: regional reduced-risk timing windows
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP-4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 2: Fisheries Protection Procedures for Proposed Developments/Activities



EOP-3 WILDLIFE, VEGETATION, & SPECIES AT RISK PROTECTION MEASURES

PURPOSE

This document provides information on required measures to protect wildlife, vegetation, & species at risk (SAR) on and adjacent to Leq'á:mel lands. The preservation and protection of habitat is of significant importance to maintain the ecological integrity of our lands, for future generations. By protecting habitat, the fish, wildlife, and plants that use this land are also protected.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage activities that have the potential to impact wildlife, vegetation, and/or SAR resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to the protection of wildlife, vegetation, and/or SAR resources;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact wildlife, vegetation, and/or SAR resources on or adjacent to Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Forested or heavily vegetated areas include:

- Holachten
- Lackaway
- Lakahahmen
- Lakway Cemetery
- Aylechootlook

Wetlands include:

- Aylechootlook
- Lackaway

FEATURES (Cont'd)

Species at risk with the potential to be present on or adjacent to Leq'á:mel lands include:

- Fish (White sturgeon, Mountain sucker, Cutthroat trout, Bull trout, Dolly Varden, Salish sucker, Brassy minnow)
- Western screech owl
- Northern rubber boa
- Western painted turtle
- Western toad
- Red-legged frog
- Oregon forestsnail
- Great blue heron

Environmentally sensitive areas in and around Leq'á:mel lands include:

- Sumas Mountain
- Bert Brink Wildlife Management Area
- Fraser River Ecological Reserve

DEFINITIONS

Critical Habitat: Habitat that is necessary for the survival or recovery of a SAR species.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders

Endangered Species: A wildlife species that is facing imminent extirpation or extinction.

Extirpated Species: A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the world.

Habitat (a) in respect of aquatic species: Spawning grounds and nursery, rearing, food supply, migration and any other area on which aquatic species depend directly or indirectly in order to carry out their life processes, or areas where aquatic formerly occurred and have the potential to be reintroduced; and **(b) in respect of other wildlife species**: The area or type of site where a wildlife species naturally occurs or depends on directly or indirectly in order to carry out its life processes or formerly occurred and has the potential to be reintroduced.

Migratory Bird: A migratory bird referred to in the *Migratory Birds Convention Act* and includes the sperm, eggs, embryos, tissue cultures and parts of the bird.

Species at Risk: An extirpated, endangered, or threatened species or a species of special concern.

Species of Special Concern: A wildlife species that may become threatened or an endangered species because of a combination of biological characteristics and identified threats.

DEFINITIONS (Cont'd)

Threatened Species: A wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 3: Wildlife & SAR Protection Procedures **MUST** be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

General best management practices for the **protection of wildlife, vegetation and SAR habitat** on Leq'á:mel lands include, but are not limited to:

- Carry out recreational activities in an environmentally responsible manner:
  - Leave no trace: take out whatever you bring into a natural area (*e.g.*, garbage, food).
  - Do not drive vehicles through habitat areas, environmentally sensitive areas or fish-bearing streams.
- Properly handle, store and dispose of hazardous substances and fuels – refer to EOP 10: Hazardous Waste & Fuel Management Measures.
- Report any sightings of known SAR and invasive species (*e.g.*, Japanese knotweed, Himalayan blackberry, Morning glory, English ivy, Scotch broom) to the Lands Department.

Best management practices for the protection of wildlife, vegetation and SAR habitat that must be employed during **all land development activities** on Leq'á:mel lands include, but are not limited to:

- **Planning and site selection:**
  - Conduct a bio-inventory of wildlife, vegetation and SAR resources at the site prior to development to inform development plans and associated protection and mitigation measures.
  - Where there is potential for SAR to occur, a Qualified Environmental Professional and/or provincial and federal regulators should be consulted prior to works being initiated.
  - Design and plan activities so that loss or disturbance to habitat is minimized and sensitive habitats are avoided.
  - Connect habitat areas with wildlife corridors.
  - Design projects to minimize loss or disturbance to riparian vegetation.
  - Build away from flood plains.
  - Avoid building structures on areas that are inherently unstable (*e.g.*, floodplains, alluvial fans) and may result in erosion and scouring of stream bed.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

  - Time land disturbance activities in line with regional reduced-risk timing windows for birds, as determined by the BC Ministry of Environment.

- **During land development:**
  - Employ up-to-date erosion and sediment control practices – see EOP 2: Fisheries Resource Protection Measures for more details.
  - Minimize impacts from roads.
  - Use temporary fencing around trees during construction.
  - Minimize the size of clearance areas.
  - Conduct environmental monitoring during construction activities.
  - Use indigenous plant species during **re-vegetation** following land disturbance activities.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Assessment Act*
- *Migratory Bird Convention Act*
- *Fisheries Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Management Act*
- *Water Sustainability Act*
- *Riparian Areas Protection Act*
- *Wildlife Act*
- *Water Protection Act*
- *Fish Protection Act*
  - British Columbia Riparian Areas Regulation

RELEVENT DOCUMENTATION

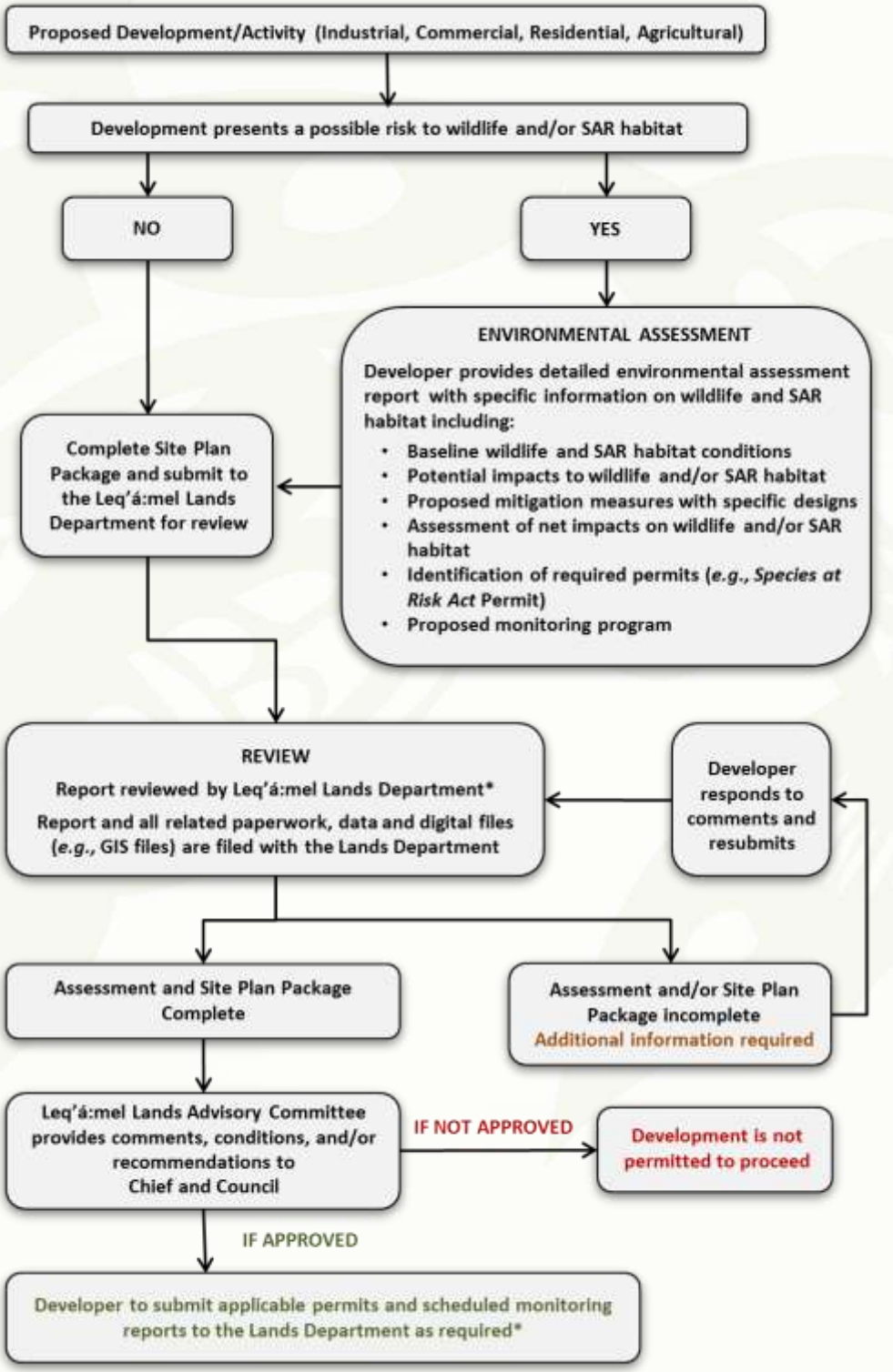
- BC Ministry of Environment (BC MOE): Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia
- BC MOE: Guidelines for Amphibians and Reptile Conservation During Urban and Rural Land Development in British Columbia (2014)
- BC MOE: Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia (2013)
- BC MOE: Develop with Care Species Factsheets
- BC MOE: South Coast Region Information Package

RELEVENT

DOCUMENTATION (Cont'd)

- EOP-2: Fisheries Resources Protection Measures
- EOP-4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP-7: Soil & Fill Management Measures
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 3: Wildlife & Species at Risk Protection Procedures for Proposed Developments/Activities



** Qualified professional services may be required.*

EOP-4 SURFACE WATER PROTECTION MEASURES

PURPOSE

This document provides information to all community members and developers on required measures to protect surface water on and adjacent to Leq'á:mel lands. The protection and management of surface waters is important to the long-term health of aquatic and terrestrial environments on and adjacent to Leq'á:mel lands, and for the health of the community.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage activities that have the potential to impact surface water resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to the protection of surface water resources;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact surface water resources on or adjacent to Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Surface water features on and/or adjacent to Leq'á:mel lands include:

- Nicomen Slough
- Deroche Creek
- Quaamich Slough
- Wilson Slough
- Zaitscullachan Slough
- Siddle Creek
- Fraser River
- Vedder River
- Sumas River

Wetlands include:

- Aylechootlook
- Lackaway

DEFINITIONS

Surface water: Refers to water found in rivers, creeks, streams, ponds and ditches on and adjacent to Leq'á:mel lands.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 4: Surface Water Protection Procedures **MUST** be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

Best management practices for the **protection of surface water** on Leq'á:mel lands include, but are not limited to:

- Wash cars on a lawn instead of a driveway to minimize run off.
- Check and repair any fluid leaks from vehicles.
- Pave as little of your property as possible – use gravel, interlocking stone or brick instead of concrete or asphalt.
- Sweep driveways and sidewalks instead of hosing them off.
- Avoid the use of harsh chemicals, including fertilizers and pesticides, whenever possible.
- Choose environmentally friendly pest or weed control options.
- Do not pour any chemicals down the drain, including down storm drains.
- Properly handle, store and dispose of hazardous substances and fuels – refer to EOP 10: Hazardous Waste & Fuel Management Measures.
- All soil and fill brought onto Leq'á:mel lands must be free of contamination – refer to EOP 7: Soil & Fill Management Measures.
- Land development must be conducted in such a way as to not have adverse impacts on groundwater sources – refer to EOP 9: Land Development Management Measures.

Best management practices for the protection of surface water that must be employed during **all land development activities** on Leq'á:mel lands include, but are not limited to:

- **Planning and site selection:**
  - Conduct an inventory of surface waters and natural drainage patterns at the site prior to development to inform development plans and associated protection and mitigation measures.
  - Design and plan activities so that disturbance to and impacts on surface water is avoided, or at least minimized.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

- Design projects to minimize loss or disturbance to riparian vegetation.
- Build away from flood plains.
- Avoid building structures on areas that are inherently unstable (*e.g.*, floodplains, alluvial fans) and may result in erosion and scouring of stream beds.
- Avoid or reduce the number of stream crossings in the design.

- **During land development:**
  - Up-to-date erosion and sediment control practices (*e.g.*, Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia).
  - Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
  - Minimize duration of in-water work, where required.
  - Effective stormwater management.
  - Limit the amount of impervious surfaces (*e.g.*, pavement, cement) to reduce run-off.
  - Maintain riparian vegetation cover for bank stabilization and reduce erosion.
  - Minimize impacts from roads.
  - Minimize the size of clearance areas.
  - Conduct environmental monitoring during construction activities.
  - Using natural landscape techniques and species.
- **Contaminant and spill management:**
  - Do not allow chemicals or other materials to enter watercourses.
  - Develop a response plan in the case of chemical or sediment releases.
  - Building materials in watercourses should not release or leach substances.

Best management practices for **erosion and sediment control** that must be employed during all land development activities on Leq'á:mel lands include, but are not limited to:

- Identify sensitive habitat areas and natural waterbodies that may be impacted.
- Develop an Erosion and Sediment Control Plan for all construction activities.
- Do not stockpile/store soils near surface waters.
- Retain existing vegetation/ground cover where possible to limit the exposure of soils and use effective erosion prevention measures where this is not possible.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

- Manage sediment using silt fencing, fabric bags, geotextile, etc.
- Re-vegetate exposed soils as quickly as possible using native plant species.
- Monitor and assess for signs of erosion or sedimentation.

Guidelines (most up-to-date versions) that must be used during any **surface water quality assessment and monitoring** on Leq'á:mel lands include, but are not limited to:

- Canadian Water Quality Guidelines for the Protection of Aquatic Life
- Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses
- BC Guidelines for Aquatic Life, Wildlife & Agriculture

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Safe Drinking Water for First Nations Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Management Act*
  - Contaminated Sites Regulation
  - Hazardous Waste Regulation
  - Agricultural Waste Control Regulation
  - Spill Reporting Regulation
  - Waste Discharge Regulation
- *Water Sustainability Act*
- *Water Protection Act*

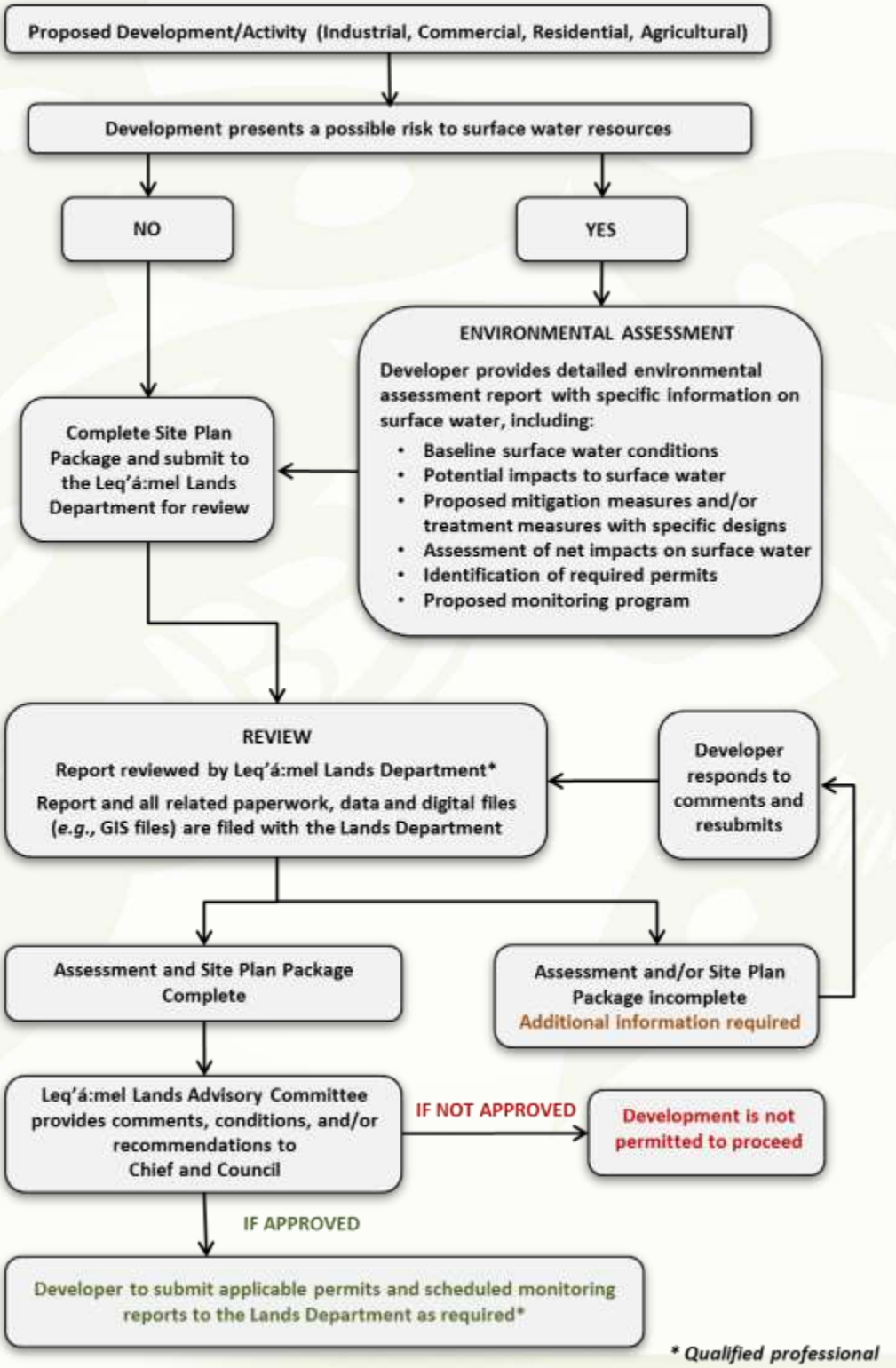
RELEVENT DOCUMENTATION

- BC Ministry of Environment: Develop with Care 2014: Environmental Guidelines for Urban and Rural Development in British Columbia
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures

RELEVENT DOCUMENTATION (Cont'd)

- EOP-5: Solid Waste Management Measures
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 4: Surface Water Protection Procedures for Proposed Developments/Activities



** Qualified professional services may be required.*

EOP-5 SOLID WASTE MANAGEMENT MEASURES

PURPOSE

This document provides information to all community members and developers on required solid waste management procedures to be employed during any land development activities and operations on Leq'á:mel lands. Effective solid waste management is important to minimize the potential for negative impacts to human and environmental health.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage solid waste on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to solid waste management;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents involving solid waste (*e.g.,* illegal dumping, open burning) to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Leq'á:mel Transfer Station on the northeastern portion Skweahm.

DEFINITIONS

Solid waste: Refers to non-hazardous trash or garbage (including compostable and recyclable materials) that is produced by residential, commercial, institutional, demolition, land clearing, or construction sources.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 5: Solid Waste Sorting and Management Procedures outlines how solid waste is to be managed on Leq'á:mel lands.

Best management practices for **solid waste management** on Leq'á:mel lands include, but are not limited to:

- **Reduction of waste:**
  - Understand what waste your household generates and how much is disposed of weekly. This will help you to develop the most efficient waste reduction strategy (*e.g.*, identify and avoid materials with un-necessary packaging).
  - Re-use items that would otherwise become waste for another purpose.
  - Donate items that are in good condition for others to use instead of throwing out.
  - Encourage everyone in your household to participate.
- **Diversion of waste:**
  - Contact the Leq'á:mel Lands Department for an up to date listing of what is accepted and recycled at the Leq'á:mel Transfer Station.
  - It is best to sort household waste on a daily basis into different bins or containers depending upon the category of waste (*e.g.,* recyclable, non-recyclable, hazardous).
  - All recyclables should be clean and dry and separated into appropriate categories.
  - Check out the online Waste Wizard and/or Recyclepedia, if you are not sure how to properly dispose of something.
- Do not bury, burn, litter, or illegally dump materials anywhere on Leq'á:mel lands.
- Do not store waste materials on your property – donate items in good condition you are not using and properly dispose of items that cannot be re-used.

All land developers must have an appropriate and **approved solid waste management plan** in place during construction (and operation for non-residential developments) that includes details on how construction and demolition waste will be disposed of.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Indian Act*
  - Indian Reserve Waste Disposal Regulation
- *Canadian Environmental Assessment Act*

RELEVANT LEGISLATION (Cont'd)

- *Canadian Environmental Protection Act*
- *Migratory Birds Convention Act*

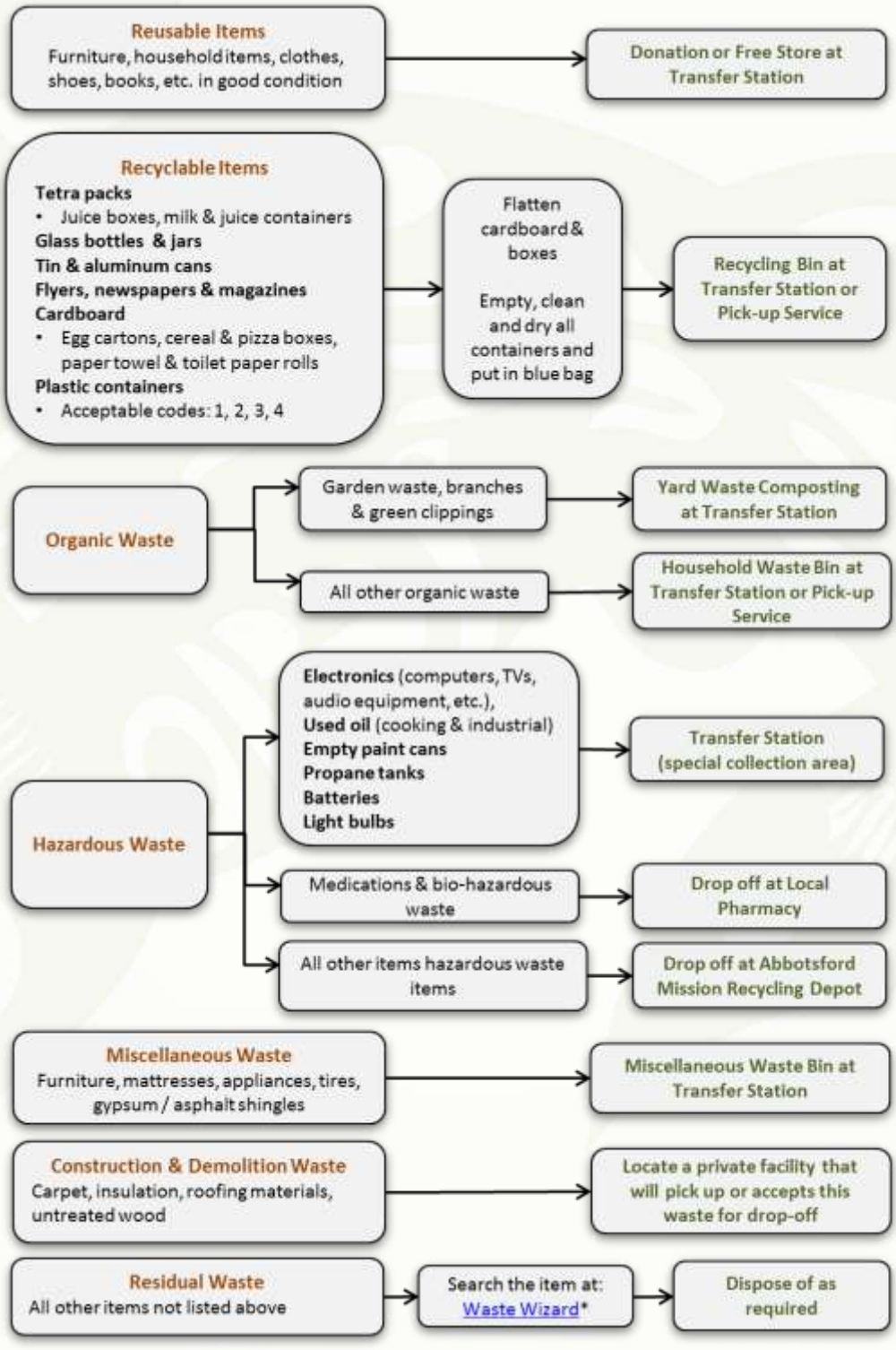
Provincial – including but not limited to:

- *Environmental Management Act*
  - Open Burning Smoke Control Regulation
  - Waste Discharge Regulation
  - Recycling Regulation
- *Public Health Act*
  - Health Hazards Regulation

RELEVENT DOCUMENTATION

- Mission Recycling Depot Drop-off Guide
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 5: Solid Waste Sorting and Management Procedures



* http://www.abbotsford.ca/city_services/garbage_recycling_and_composting/waste_wizard.htm

EOP-6 CULTURAL RESOURCES PROTECTION MEASURES

PURPOSE

This document provides information to all community members and developers on required measures to protect cultural and heritage resources on and adjacent to Leq'á:mel lands. There is generally high potential for heritage resources and significant archaeological sites to be present on Leq'á:mel lands given the rich cultural history of the area. Ensuring cultural awareness among youth and the larger community and maintaining culture for future generations is an important part of building community belonging and pride.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage activities that have the potential to negatively impact cultural resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to cultural resource protection;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents that have the potential to negatively impact cultural and/or heritage resources on Leq'á:mel lands to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976

Stó:lō Research and Resource Management Centre
Building 10, 7201 Vedder Road,
Chilliwack, BC V2R 4G5
(604) 824-2420 / 1-800-565-6004
www.srrmcentre.com

FEATURES

Key cultural heritage resources on or adjacent to Leq'á:mel lands include:

- Provincially listed heritage site DhRm-2 on Skweahm
- Provincially listed heritage site DhRm-3 northeast of Skweahm
- Provincially listed heritage site DhRm-4 on Lakahahmen
- Sacred grounds on Lakahahmen and Skweahm
- Lakway and Sumas Cemeteries

DEFINITIONS

Ancestral human remains: the skeletal or otherwise physical remains of a deceased person or persons in all likelihood of Stó:lō ancestry.

Artefacts: objects that can be readily removed from the site of which they are a part; moveable objects (e.g., chipped stone flakes, knives, spears and arrowheads; tin cans; glass bottles and jars; basketry; personal gear; groundstone hand-mauls; bone pins; antler wedges; glass beads; looms; instruments; etc.).

Cultural resources: Refer to learned, collective human behaviours and practices (*e.g.,* language, social structure, beliefs, perceptions, values, knowledge, music, and arts) that connects, and may even define, a community. Includes heritage resources, which refer to objects, sites, or locations of traditional Leq'á:mel practices that are of historical, cultural, or archaeological significance to the community.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 6: Cultural Heritage Resource Protection Procedures MUST be followed **BEFORE** any land development activities are undertaken on Leq'á:mel lands.

EOP Process 7: Cultural or Heritage Resources Emergency Impact Guidelines must be followed in the even that such resources are encountered during any land development activities.

All **land development activities** on Leq'á:mel lands must abide by the best management practices and guidelines for the **protection of cultural and heritage resources** as outlined in the most up-to-date version of the Stó:lō Heritage Policy, which is administered by Stó:lō Research and Resource Management Centre. These include, but are not limited to:

- Archaeological Overview Assessments (AOA) must be conducted prior to any land disturbance activities that have the potential to disturb archaeological sites.
- If the AOA indicates that a site may be present, an Archaeological Impact Assessment should be conducted.

Certain developments may require **monitoring** by an archaeologist during construction activities that have the potential to disturb or damage cultural heritage resources on Leq'á:mel lands. **If required, members of Leq'á:mel will act as cultural monitors during site development where possible.**

RELEVANT

Federal – including but not limited to:

LEGISLATION

- *Canadian Environmental Assessment Act*
- *Cultural Property Export and Import Act*

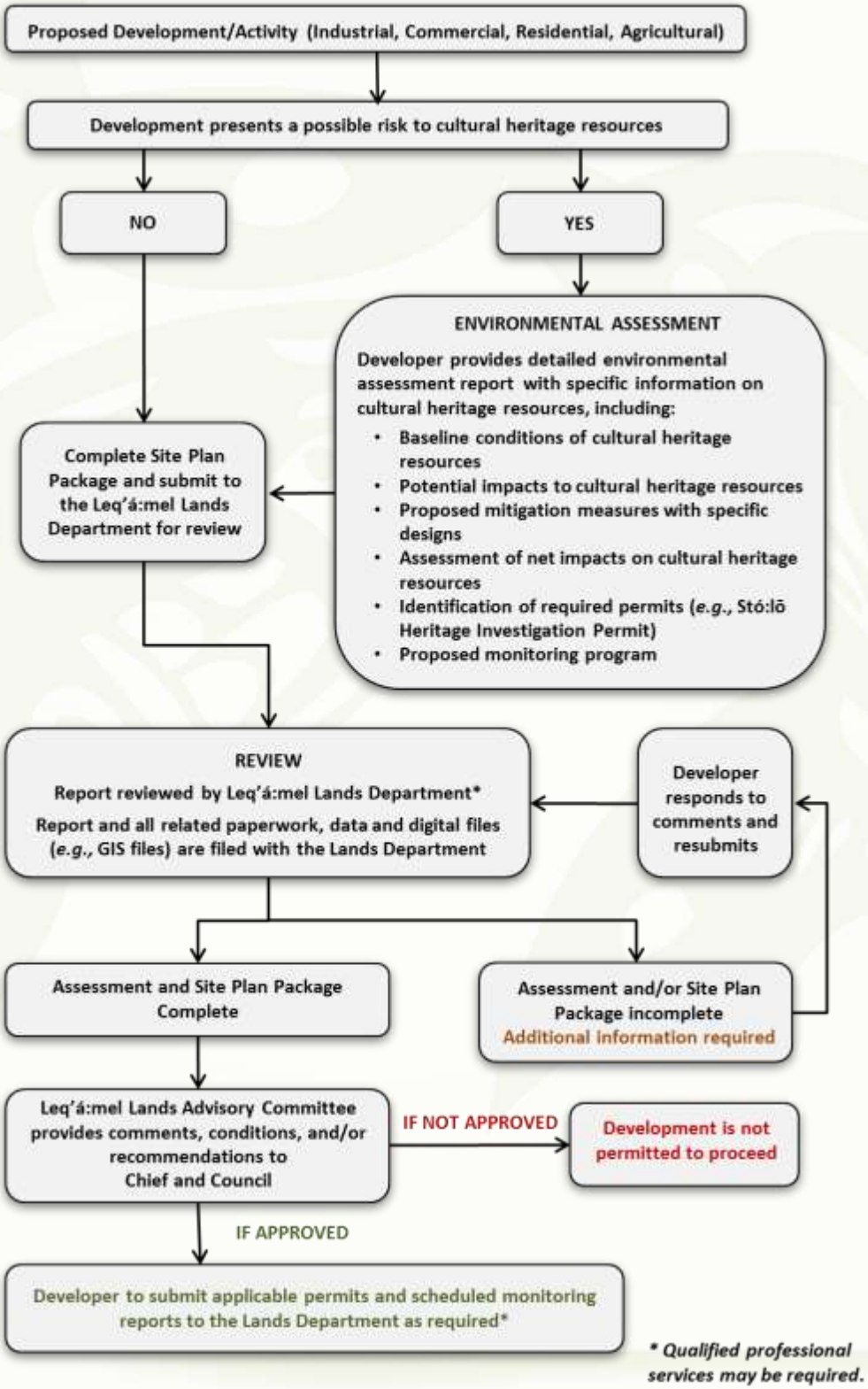
Provincial – including but not limited to:

- *Environmental Assessment Act*
- *Heritage Conservation Act*

RELEVENT DOCUMENTATION

- Stó:lō Heritage Policy
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures

EOP Process 6: Cultural Heritage Resources Protection Procedures for Proposed Developments/Activities



EOP Process 7: Cultural Heritage Resources Emergency Impact Guidelines

In the event that archaeological, cultural, or heritage resources are encountered during site operations, the contractor shall immediately stop construction, notify the Leq'á:mel Lands Department and comply with the policies and procedures identified in the Stó:lō Heritage Policy.

In the event that any item of particular archaeological, heritage, historical, cultural or scientific interest is found on the site, as between the contractor or the party who discovered the item(s) and Leq'á:mel, such item(s) shall be and remain the property of Leq'á:mel and/or the Stó:lō Nation.

The Leq'á:mel Lands Department will coordinate and work with the Stó:lō Research and Resource Management Centre (SRRMC) on behalf of the Stó:lō Nation.

Below are a set of management strategies (related to construction activities) that have been adapted from the Stó:lō Heritage Policy and the BC Ministry of Forest Lands and Natural Resources Operations' (MFLNRO) Archaeology Branch Policy regarding "Found Human Remains".

Management options will be reviewed and agreed upon between Leq'á:mel and the SRRMC. Management options will take into account the Stó:lō Heritage Policy, particularly related to:

- **Section 5.3.5** – Material Culture Sites / Objects
- **Section 5.3.6** – Stó:lō Ancestral Human Remains
- **Section 5.3.6.1** – Incidental Discovery of Stó:lō Ancestral Human Remains
- **Section 8.0** – Collection of Stó:lō Heritage Artefacts
- **Section 8.1** – Incidental Finding and Collection

Cultural Sites Chance Find Management Strategy

The following emergency impact management guidelines apply to cultural, heritage and archaeological sites. Emergency management procedures for suspected human burial sites are presented separately below. The contractor shall be familiar with the Stó:lō Heritage Policy and MFLNRO's Archaeology Branch Policy regarding "Found Human Remains", recognizing that the appropriate course of action may differ depending on whether or not the remains are found in an undisputed archaeological context (*i.e.*, with artefacts).

Initial Response by the Contractor

Step 1: The contractor shall immediately stop construction in the immediate vicinity of the cultural or archaeological site.

Step 2: The contractor shall contact the Leq'á:mel Lands Department for further guidance. SSRMC will be contacted by the Leq'á:mel Lands Department.

Step 3: The Leq'á:mel Lands Department and/or SRRMC will advise the contractor on further action.

Please refer to Table 1 in the Stó:lō Heritage Policy for further details.

Initial Action

Depending on the nature of the situation, one of the following responses is likely:

- Based on a telephone description of the incident, it may be decided that there are no further concerns, allowing construction to continue as planned; or
- A field visit by a SRRMC archaeologist may be required. In this case, the Leq'á:mel Lands Department will notify the SRRMC. It is anticipated that suitable protocols for such situations will be established in consultation with all interested parties and as per the Stó:lō Heritage Policy.

Management Options

For all management options, the SRRMC will be consulted for input into developing appropriate procedure(s) and protocols at the earliest time possible. Potential options related to land development activities could include but are not limited to:

Option 1: Avoidance through partial or complete project redesign or relocation. This ensures minimal impact to the archaeological site or heritage/cultural site and is the preferred option from a cultural resource management perspective. It can also be the least expensive option from a construction perspective.

Option 2: Salvage or emergency excavation, if necessary. This "data recovery" option is site destructive and it can delay construction. Consequently, salvage or emergency excavation is generally not a preferred option.

Option 3: Apply site protection measures, including both temporary strategies and long-term solutions. Temporary strategies could include erecting fencing or barricades to protect the archaeological or heritage site, while longer-term solutions could include capping the archaeology site with fill. Appropriate protection measures shall be identified on a site-specific basis.

Chance Find Impact Management for Human Remains

Initial Response by the Contractor

If definite or possible human remains are encountered:

Step 1: The contractor shall immediately stop construction in the vicinity of the remains.

Step 2: The contractor shall immediately contact the Leq'á:mel Lands Department for further guidance.

Step 3: The Leq'á:mel Lands Department will advise the contractor on further action.

Initial Action

- The Leq'á:mel Lands Department will contact the SRRMC and the RCMP;
- The Leq'á:mel Lands Department or the RCMP will contact the Office of the Coroner;
- Leq'á:mel representatives and a professional archaeologist or physical anthropologist from the SRRMC will visit the site as soon as possible; and

- If it is determined that the remains are Stó:lō and/or Aboriginal ancestry, the Stó:lō Heritage Policy will be followed.

Management Options

The Stó:lō Heritage Policy outlines the appropriate protocol for handling Stó:lō Ancestral and/or Aboriginal human remains and shall be followed. A human remains protocol shall be established prior to recommencement of any proposed construction. Two possible strategies are presented below, but others may, or could, be considered.

Option 1: Avoidance through partial or complete project redesign or relocation. This would ensure that the remains are protected from further disturbance.

Option 2: Salvage or emergency excavation to respectfully remove the remains for reburial as per the Stó:lō Heritage Policy.

The contractor shall be aware that removal of human remains and subsequent reburial might involve certain ceremonies or procedures that could delay construction. If the contractor has any concerns about possible archaeological, historic, or burial locations, the Leq'á:mel Lands Department shall be contacted for direction.

EOP-7 SOIL & FILL MANAGEMENT MEASURES

PURPOSE

This document provides information to all community members and developers on required soil and fill management procedures to be employed during any land development activities and operations on Leq'á:mel lands. It is important to properly manage soil and fill brought to and/or removed from Leq'á:mel lands to ensure deposited material is not contaminated, and to minimize the potential for human and environmental health risks.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage soil and fill on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to soil and fill management;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents involving soil and fill (*e.g.*, evidence or suspicion of contaminated fill or soil, importing soil or fill without a permit) to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

DEFINITIONS

Fill: Refers to soil that has been removed from one area and deposited in another area, typically to fill depressions and holes to make an area suitable for development.

Deposit: Means the act of moving soil and other material and placing it upon a parcel or contiguous parcels of land on which such soil and other material did not exist or stand.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

Soil: The mixture of organic matter, rock matter, minerals, as well as various organisms, in the upper layer of earth. Includes sand, clay, silt, sand, gravel, cobbles, boulder and peat.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

EOP Process 8: Incoming Soil & Fill Management Procedures **MUST** be followed **BEFORE** any soil or fill is brought onto on Leq'á:mel lands.

EOP Process 9: Outgoing Soil & Fill Management Procedures **MUST** be followed **BEFORE** any soil or fill is removed from Leq'á:mel lands.

The following best management practices must be followed **before soil is received** from a site:

- Find out the exact address where the soil comes from.
- Use Google maps or an equivalent to check that the location and use of the source site is consistent with the information provided.
- Many soil importers will provide documents that they believe can be used to assess environmental soil quality, such as geotechnical reports, which do not – when in doubt, have an environmental consultant review the material.
- Advise soil importers that random inspections and soil testing will be completed to assess soil quality and unsuitable material will need to be removed at their cost.
- Get a contract or agreement with the soil importer.
- Make the company delivering the soil sign off that the soil is not contaminated.
- Clearly identify that the contractor depositing the soil at the fill site will be responsible for the removal of any soil subsequently found to be contaminated or in violation of the above contract clause.

During any **excavation work**, contractors must notify the Lands Department if the following is observed:

- Unusual odour that may indicate the presence of contaminants (*e.g.*, gas or oil).
- Stained soils which are darker and may have a "wet" appearance typically indicate the presence of a spill area. Contaminated soils may also have a distinct oily feel. Typically, staining (contamination) is accompanied by an odour.
- If staining, odour, buried debris, or hydrocarbon sheen is observed associated with infiltrating groundwater, the contractor must immediately stop work and advise of the suspected contamination.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Transportation of Dangerous Goods Act*

RELEVANT

LEGISLATION (Cont'd)

- *Fisheries Act*
- *Migratory Birds Convention Act*

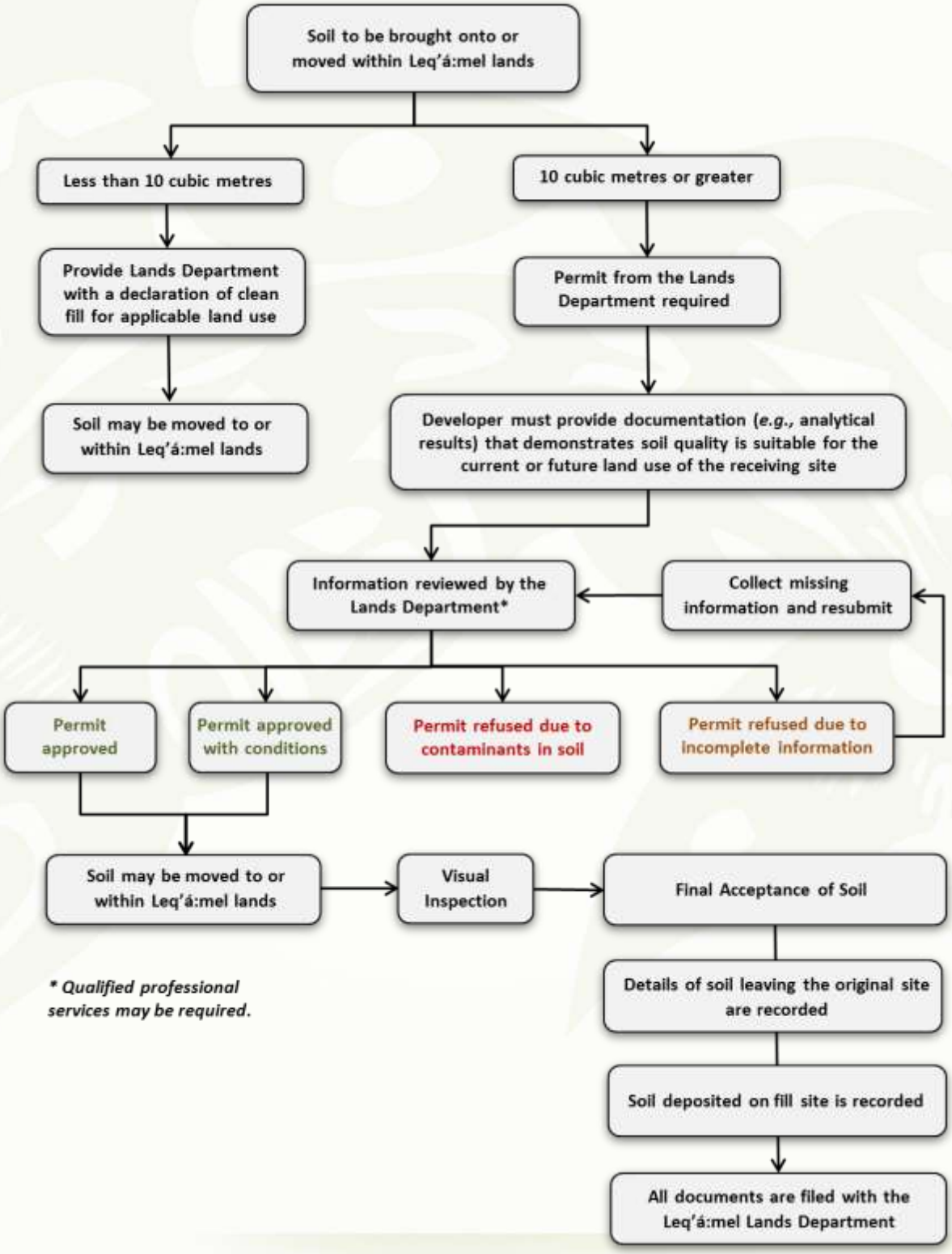
Provincial – including but not limited to:

- *Environmental Management Act*
  - Contaminated Sites Regulation
- *Transportation of Dangerous Goods Act*

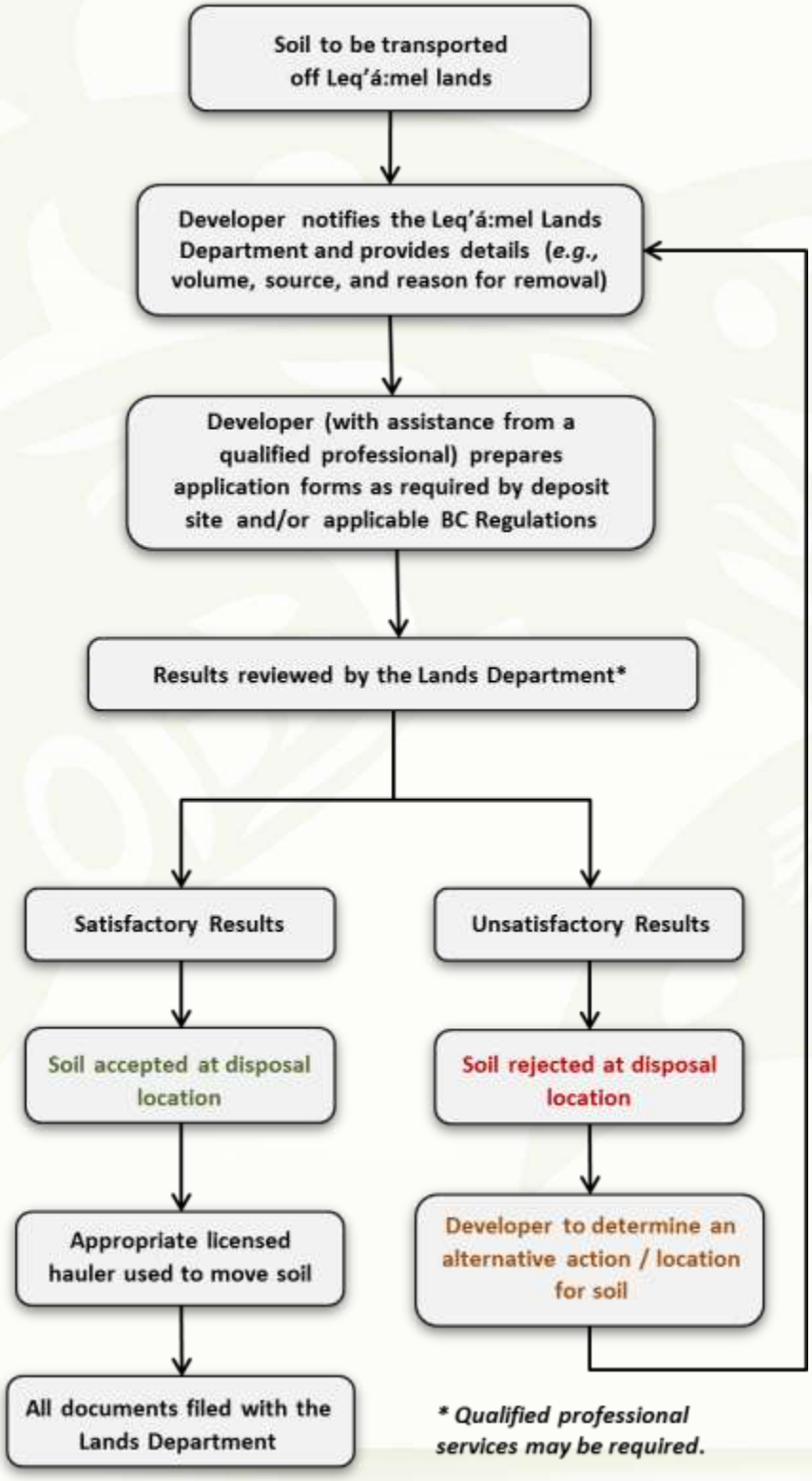
RELEVENT DOCUMENTATION

- EOP-1: Groundwater Protection Measures
- EOP-8: Natural Resources Development Protection Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste and Fuel Management Measures

EOP Process 8: Incoming Soil & Fill Management Procedures



EOP Process 9: Outgoing Soil & Fill Management Procedures



EOP-8 NATURAL RESOURCES DEVELOPMENT PROTECTION MEASURES

PURPOSE

This document provides information to all community members and developers on required procedures to be employed during any natural resource development and operations on Leq'á:mel lands. It is important to properly manage natural resource development to avoid, or at least minimize, impacts on the natural environment and human health.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage development of natural resources on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to natural resource development;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents involving natural resource development to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

FEATURES

Agricultural activities are currently undertaken on the following parcels:

- Zaitscullachan (entire parcel)
- Lakahahmen (central and southern portion)
- Holachten (easternmost portion, east of the rail line)
- Skweahm (several portions)
- Papekwatchin (northern portion)

DEFINITIONS

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

DEFINITIONS (Cont'd)

Natural resources: Resources that exist in the natural environment, including water, land and minerals, vegetation and wildlife.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

Best management practices to employed during **agricultural activities** on Leq'á:mel lands include, but are not limited to:

- **Proper storage of potentially hazardous products:**
  - Storage locations should be designated, clearly marked and secure.
  - Materials (*e.g.,* fertilizers and pesticides) should be stored above the flood plain and at least 30 m from any well or watercourse.
  - An Emergency Plan that outlines steps in the event of spill should be posted near where chemicals are stored.
- **Responsible pesticide use:**
  - Pesticides are only one method of pest control and should be used in conjunction with other pest management techniques.
  - Only pesticides approved for use by Health Canada under the *Pest Control Products Act* can be used.
  - All pesticides must be used according to safety guidelines specified on each pesticide label.
  - Farmers must strive to ensure pesticides are contained within the boundaries of the properties they are farming.
  - Pesticides can be applied to and along ditches, provided they are registered for that use and all legal requirements are met.
- **Responsible fertilizer/soil conditioner use:**
  - Fertilizers and soil conditioners must be spread evenly over the soil and are most effective when incorporated into the crop root zone.
  - Fertilizers must be applied at a rate which takes into account the nutrient value of the fertilizer, the nutrient absorption capacity of the land, and the nutrient use by the crop grown on the land.
  - Use natural fertilizers instead of synthetic ones.
  - Excessive application should be avoided to prevent nutrients from entering nearby watercourses or groundwater sources.

Refer to EOP 9: Land Development Management Measures for best management practices that must be employed for other proposed natural resource development activities.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Pest Control Products Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Provincial – including but not limited to:

- *Environmental Management Act*
  - Agricultural Waste Control Regulation
  - Spill Reporting Regulation
  - Hazardous Waste Regulation
- *Forest and Range Practices Act*
- *Wildlife Act*
- *Water Sustainability Act*
- *Water Protection Act*
- *Drinking Water Protection Act*

Leq'á:mel Laws – including but not limited to:

- Zoning Law

RELEVENT DOCUMENTATION

- Government of BC: Guidelines for good agricultural practices
- Leq'á:mel Development Procedures (2016)
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP 4: Surface Water Protection Measures
- EOP-7: Soil & Fill Management Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste Management Measures

EOP-9 LAND DEVELOPMENT MANAGEMENT MEASURES

PURPOSE

This document provides information to all community members and developers on required land development and management procedures to be employed during any land development activities and operations on Leq'á:mel lands. A clear land development process that considers environmental and cultural context and community needs, and incorporates environmental regulations and policies, is needed to protect environmental and human health on Leq'á:mel lands.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to avoid and/or mitigate the potential for negative environmental impacts as a result of land development. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to land development;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents and unregistered land development activities that have the potential to negatively impact the environment to the Leq'á:mel Lands Department immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976 (8:30 am to 4:30 pm, Mon-Fri)

DEFINITIONS

Land development: Refers to the alteration of land and includes the building of new infrastructure and modifications or renovations to existing infrastructure.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

All proposed land development activities on Leq'á:mel lands must follow **EOP Process 10: General Land Development Procedures** and the application and approvals process and the land development guidelines set out in the **Leq'á:mel Development Procedures Manual**.

Control measures that must be adhered to during any **land development** on Leq'á:mel lands include, but are not limited to:

- Developers are required to demonstrate through the submission of an Environmental Assessment Report that the proposed development or land and resource use will not pose a threat of irreparable environmental or cultural resource damage or pose a serious risk to human health.
- All proposed land development activities must adhere to the following:
    - Leq'á:mel Zoning Law
    - Stó:lō Heritage Policy
    - BC Building Code 2012
    - BC Fire Code 2012
    - BC Plumbing Code 2012
    - Any other applicable laws, bylaws or regulations regarding the protection of the environment
- Development activities cannot be undertaken until approval by Leq'á:mel leadership has been received.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *First Nations Land Management Act*
- *Indian Act*
- *Canadian Environmental Protection Act*
- *Canadian Environmental Assessment Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

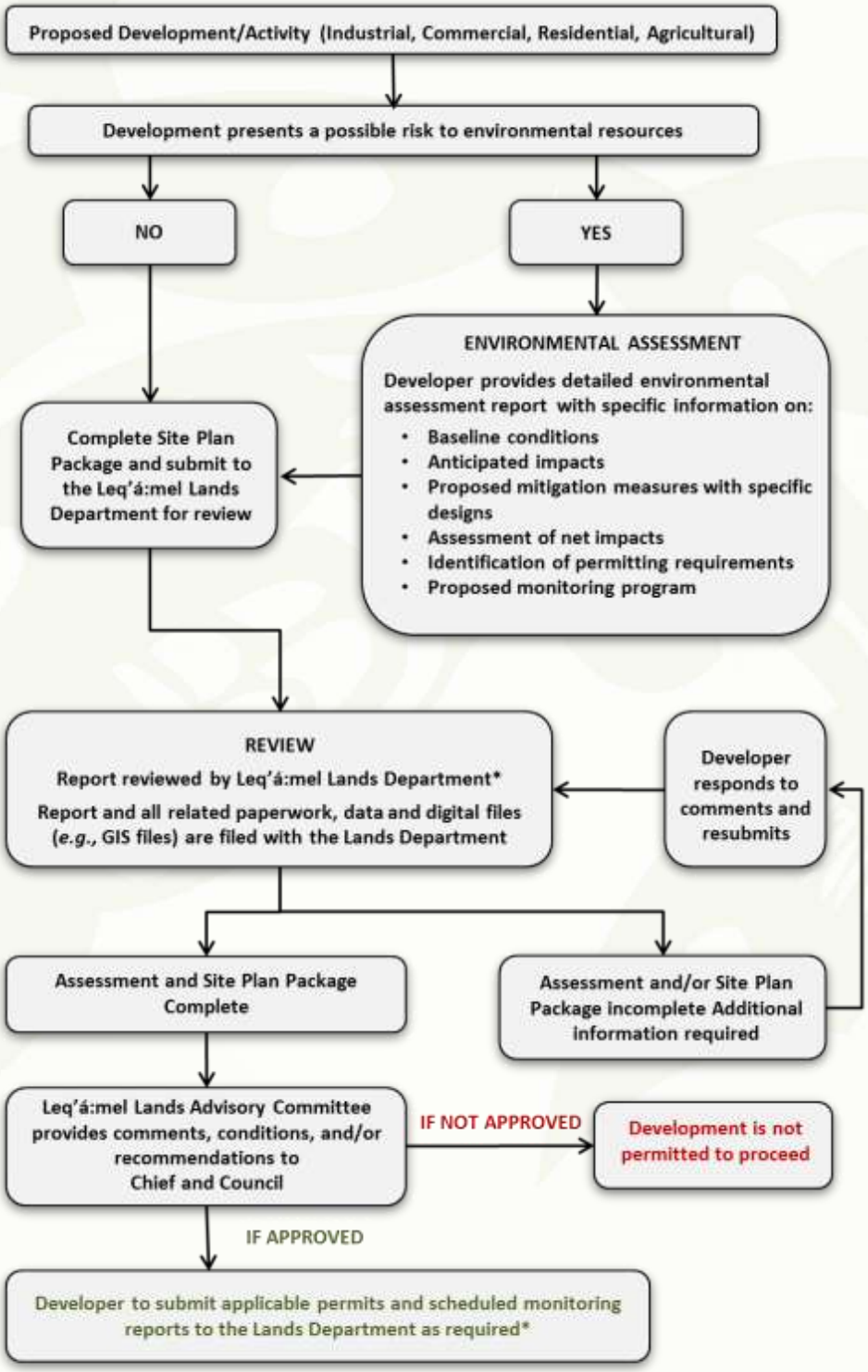
Provincial – including but not limited to:

- *Environmental Assessment Act*
- *Water Sustainability Act*
- *Wildlife Act*
- *Fisheries Protection Act*
- *Heritage Conservation Act*

RELEVENT DOCUMENTATION

- Leq'á:mel Development Procedures (2016)
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP 4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP 6: Cultural Resources Protection Measures
- EOP-7: Soil & Fill Management Measures
- EOP-9: Land Development Management Measures
- EOP-10: Hazardous Waste Management Measures

EOP Process 10: General land Development Procedures



** Qualified professional services may be required.*

EOP-10 HAZARDOUS WASTE & FUEL MANAGEMENT MEASURES

PURPOSE

This document provides information to all community members and developers on required hazardous waste and fuel management procedures to be employed during any land development activities and operations on Leq'á:mel lands. Proper handling, storage and disposal procedures for hazardous wastes and fuels, including spill response and mitigation measures, are required to prevent the release of contaminants into the environment, and the associated impacts on human and environmental health.

RESPONSIBILITY

It is the responsibility of all residents and land developers (whether they are member or non-members) on Leq'á:mel lands to responsibly manage hazardous waste and fuel management on Leq'á:mel lands. Specifically, it is the responsibility of all residents and developers to:

- Comply with relevant and up-to-date federal, provincial and Leq'á:mel laws, regulations and policies related to hazardous waste and fuel management;
- Follow the guidelines and implement the best management practices set forth in this document; and
- Report any incidents involving hazardous waste and fuel management (*e.g.*, illegal dumping) to the Leq'á:mel Lands Department (and the Provincial Emergency Program for spills in amounts requiring external notification) immediately.

KEY CONTACT

Leq'á:mel Lands Department
43101 Leq'á:mel Way
Deroche, BC V0M 1G0
(604) 826-7976

Provincial Emergency Program
1-800-663-3456

FEATURES

Some household hazardous waste items are accepted at the Leq'á:mel transfer station.

Fuel storage on Leq'á:mel lands includes:

- Above-ground propane storage tanks (used for heating of buildings)
- Above-ground diesel storage tank at the Public Works maintenance yard
- Gas station on Skweahm

DEFINITIONS

Bio-hazardous waste: Refers to any waste containing infectious materials or potentially infectious substances such as blood. Of special concern are sharp wastes such as needles, blades, glass pipettes, and other wastes that can cause injury during handling.

Developer: Any individual, organization or agency that builds or modifies existing infrastructure on Leq'á:mel lands, including Leq'á:mel staff, members, residents and Certificate of Possession holders.

Hazardous waste: Refers to refers to wastes that are potentially hazardous to human and/or environmental health, and includes wastes that are explosive, gaseous, flammable, toxic, radioactive, corrosive, combustible or leachable.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED

Common household products that are hazardous include:

Cleaning products:

- oven cleaners
- drain cleaners
- wood and metal cleaners and polishes
- toilet cleaners
- tub, tile, shower cleaners
- bleach
- chemicals to treat pools

Automotive products:

- motor oil and fuel additives
- air conditioning refrigerants
- starter fluids
- automotive batteries
- transmission and brake fluid
- antifreeze

Personal care products:

- medications
- nail polish and remover
- hair sprays and related products
- medical needs and syringes

Indoor/outdoor pesticides:

- ant sprays
- cockroach sprays and baits
- flea repellents
- bug sprays
- insecticides
- pesticides
- fungicides/wood preservatives
- rodent poisons and bait

Workshop/painting supplies:

- adhesives and glues
- oil or enamel based paint
- stains and finishes
- photographic chemicals
- fixatives and other solvents

Miscellaneous:

- batteries
- mercury thermostats or thermometers
- fluorescent light bulbs
- aerosol cans

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

Best management practices to deal with the **handling, storage, and disposal of common household hazardous products**, include but are not limited to:

- Avoid buying hazardous materials and products if non-hazardous option is available.
- Use up any hazardous products you have.
- Give the product to someone else who will use it if you no longer need it.
- Confirm with available resources whether waste items are considered hazardous waste prior to disposal:
    - Check out the online Waste Wizard and/or Recyclepedia, if you are not sure how to properly dispose of something.
    - Take it to a nearby hazardous waste collection depot.
- Treat unknown (unlabeled) wastes as hazardous waste.
- **Do not:**
    - Throw hazardous materials in the garbage.
    - Pour hazardous materials down the drain or flush them down the toilet.
    - Burn hazardous materials.
    - Bury or dump hazardous materials.

Best practices associated with managing **household bio-hazardous wastes** include:

- Waste produced that may be classified as bio-hazardous must be disposed of appropriately.
- Drop boxes or sharps containers should be installed in public washrooms to encourage safe disposal.
- Bio-hazardous materials unsuitable for disposal in the sharps containers should be taken to an approved disposal location.

All underground storage tank systems and aboveground storage tank systems on Leq'á:mel lands that have a **capacity of more than 230 litres** and that are designed to be installed in a fixed location on must abide by the **Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.**

Owners of all **new and/or upgraded tank systems** must provide supporting documentation to the Lands Department to show compliance with **Environment Canada Storage Tanks Regulations** and the **Canadian Standards Association Standard B139, "Installation Code**

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

for Oil-Burning Equipment".

EOP Process 11: Fuel Tank Inspection Procedures **MUST** be followed by all residents and operators on Leq'á:mel lands.

In the event of a fuel spill, **EOP Process 12: General Fuel Spill Response Procedures** **MUST** be followed by all residents and operators on Leq'á:mel lands. Spill reporting **MUST** follow the procedures set out in **EOP Process 13: General Spill Reporting Procedures**.

General BMPS that must be employed during **fuel handling and storage** on Leq'á:mel lands include, but are not limited to:

- Containers shall be filled and capped in manner that prevents leakage.
- Containers shall be appropriate for the product being contained.
- Product/Workplace Hazardous Materials Information System labels are required on containers identifying contents and hazards.
- Current Material Safety Data Sheets must be maintained in a location available to all people involved in fuel handling, storage and disposal.
- Tanks must be maintained and in good condition (free of rust, dents, and leaks).
- Storage locations must be vented and have appropriate fire extinguishers that are annually inspected with proper tags.
- Operators must conduct regular inspections of fuel tanks to ensure proper requirements are met.
- Post no smoking signs at all dispensing and fuel transfer sites.
- Fuel tanks should be located away from groundwater wells or surface waters.
- Store containers at least 3 m away from any building or in a building properly designed for storage.
- Store drums and containers in an upright position.
- Dispense fuel from upright drums and containers using an approved pump.
- All small containers (less than 230 litres of 50 gallons, including jerry cans, pails, canisters, and drums) that are stored at or near homes should be kept away from roadways and pedestrians, out of direct sunlight, and protected from potential impact.
- Do not fill containers beyond their safe filling level (~90% full).
- Use the proper dispensing pump designed for the product being handled.
- Hoses and nozzles must be maintained in good repair and do not leak.
- Operators must stay with the nozzle at all times while dispensing fuel.
- Recover spills as appropriate.

BEST MANAGEMENT PRACTICES & PROCESSES TO BE FOLLOWED (Cont'd)

- Contact the Provincial Emergency Program (PEP) in the event of a fuel spill (**1-800-663-3456**).

General BMPS that must be employed during **fuel transport** on Leq'á:mel lands include, but are not limited to:

- All vehicles transporting fuel must have an appropriate spill kit and the driver must be trained and knowledgeable in its use.
- Vehicles transporting fuels must meet requirements of the *Transport of Dangerous Goods Act* and BC Ministry of Transportation.
- If a combined fuel load is greater than 2,000 L (440 gallons) a shipping document must be filled out for the cargo, the driver must have proof of "Transport of Dangerous Goods (TDG)" certified training and the load must a TDG placard appropriate for the fuels being transported.
- All loads must be secured to prevent tipping or fuel loss. Fuel drums being transported by truck must be stacked end on end and transported by vehicles with sides or side boards.

RELEVANT LEGISLATION

Federal – including but not limited to:

- *Canadian Environmental Protection Act*
- *Transportation of Dangerous Goods Act*
  - Transportation of Dangerous Goods Regulations
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act*

Provincial – including but not limited to:

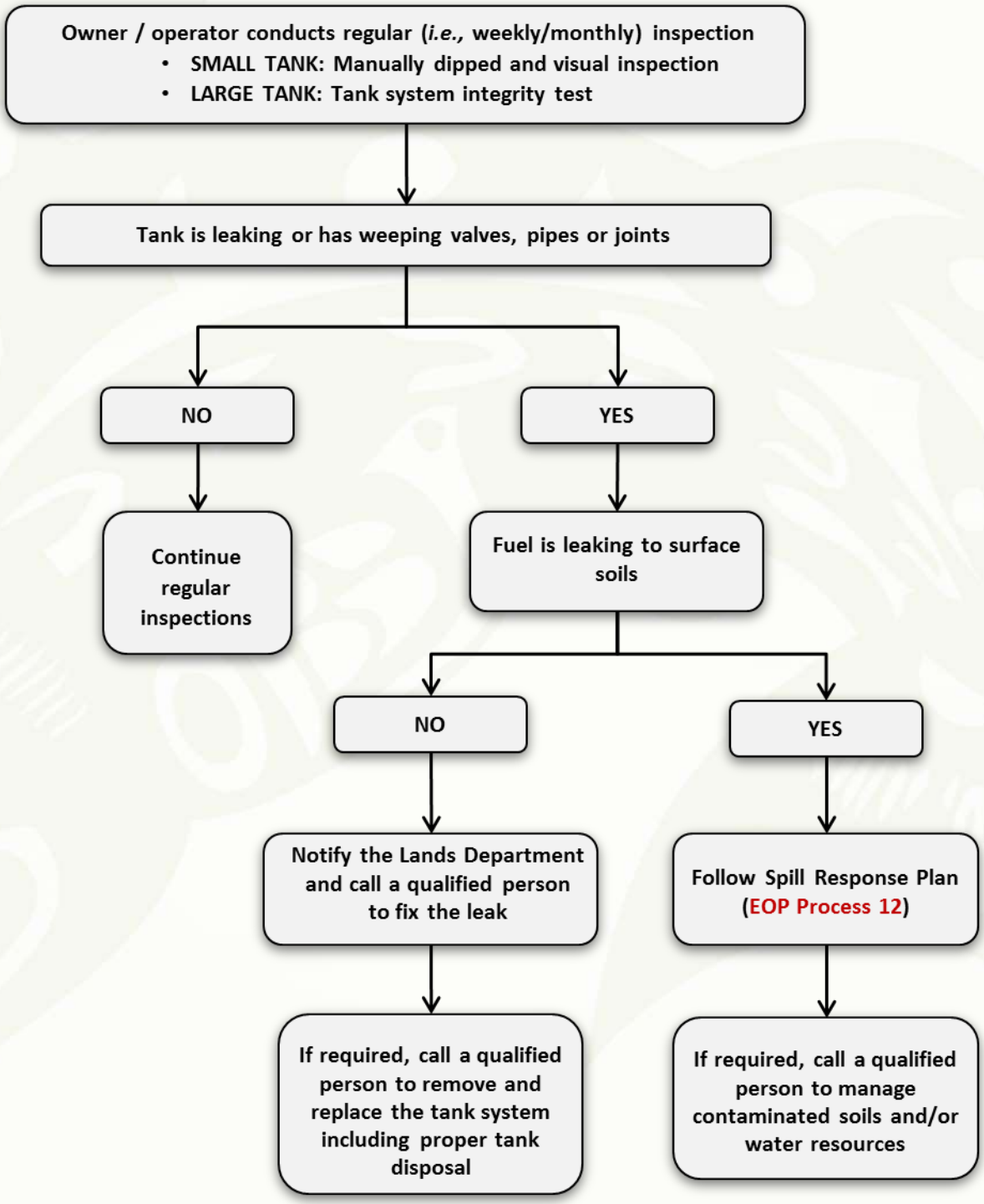
- *Environmental Management Act*
  - Spill Reporting Regulation
  - Contaminated Sites Regulation
- *Transportation of Dangerous Goods Act*
  - Transportation of Dangerous Goods Regulations
- *Drinking Water Protection Act*
- *Wildlife Act*
- *Fish Protection Act*

RELEVENT DOCUMENTATION

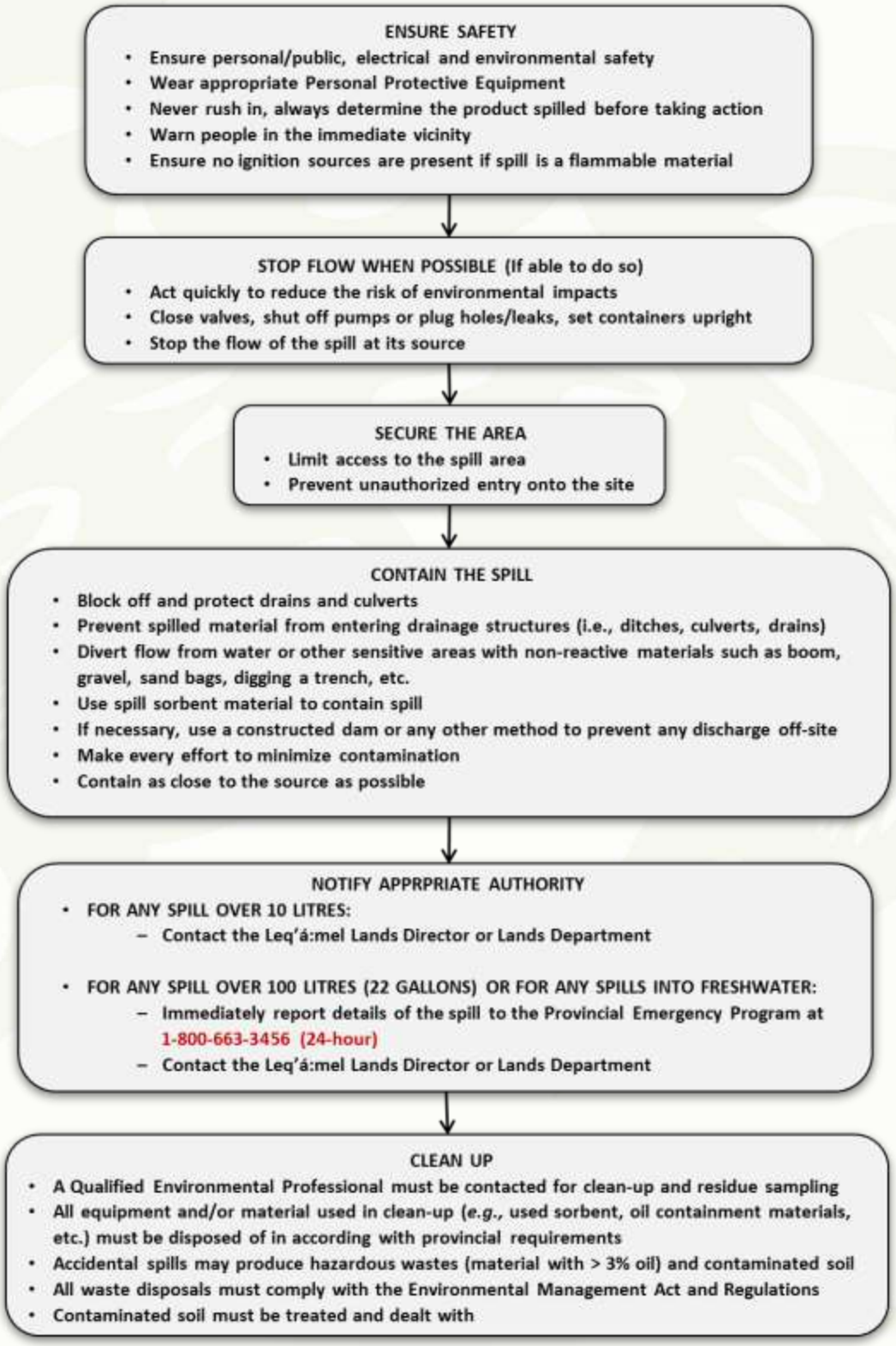
RELEVENT DOCUMENTATION (Cont'd)

- Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products
- Environment Canada Storage Tanks Regulations
- EOP-1: Groundwater Protection Measures
- EOP-2: Fisheries Resources Protection Measures
- EOP-3: Wildlife, Vegetation & Species at Risk Protection Measures
- EOP 4: Surface Water Protection Measures
- EOP-5: Solid Waste Management Measures
- EOP-7: Soil & Fill Management Measures
- EOP-9: Land Development Management Measures

EOP Process 11: Fuel Tank Inspection Procedures



EOP Process 12: General Fuel Spill Response Procedures



EOP Process 13: General Spill Reporting Procedures

An Environmental Incident Report (EIR) should be prepared as soon as possible following an incident. The developer or contractor will be responsible for completing the EIR. The target for reporting is within one working day following the time of the incident.

An Environmental Incident is characterized as causing, or has the potential for causing one or more of the following:

- Adverse effect on fish, wildlife or other environmental resources;
- Adverse publicity with respect to environment; and
- Legal action with respect to violation of statutes or environmental damage.

Examples of Environmental Incidents include, but are not limited to:

- Spills of oil, fuel, or chemicals;
- Discharge of hazardous substances into fish-bearing water;
- High or low flows that affect fish or fish habitat, wildlife or recreation; and
- Violation of environmental regulations, permits or approvals.

What Incidents are Reportable?

Any environmental incidents will be immediately reported to the Leq'á:mel Lands Department and the appropriate government agencies.

Please note that all spills to water must be reported immediately!

If in doubt as to whether or not to report a spill, err on the side of caution and report the spill.

How Do You Report a Spill?

Make sure you have the following information ready to report to the appropriate government agencies:

- Name and phone number of person reporting the spill;
- Name and phone number of person involved with the spill;
- Location and time of the spill;
- Type and quantity of material spilled;
- Cause and effect of spill;
- Details of action taken or proposed to contain the spill and minimize its effect; and
- Names of other persons or agencies that advised regarding the spill.

When Should a Spill Be Reported Externally?

Spills of the following substances must be report externally to the **Provincial Emergency Program** (**PEP**) at **1-800-663-3456** (24-hour) if the estimated amount discharged meets or exceeds the quantities list below. All spills that meet the below criteria must be reported within one day of the incident. The Leq'á:mel Lands Department should always be notified immediately if a spill of any magnitude occurs on site.

Substance	Spill Quantity	Agency to Contact
Class 2.1 – **flammable gas (*e.g.*, propane)**	≥10 kg or 10 min.	**PEP**
Class 2.2 – **non-flammable gas (*e.g.*, SF6, CO2)**	≥10 kg or 10 min.	**PEP**
Class 3 – **flammable liquids**	≥100 litres	**PEP**
Class 8 – **corrosive liquid acids and caustics (*e.g.*, battery acid)**	5 kg or litres	**PEP**
Class 9 – **environmentally hazardous (*e.g.*, PCBs, used ethylene glycol)**	1 kg or litre	**PEP**
Oil and waste oil	≥100 litres	**PEP**
Other substances (*e.g.*, new antifreeze, power-wash water)	200 kg or litres	**PEP**
Pesticides and herbicides	1 kg or litre	**PEP**
Any quantity of a hazardous substance released into a waterbody	**All**	**PEP**