



This prospectus contains a Concept Plan for the establishment of a watershed interpretive facility to be located on the grounds of Tolley Park near the Mabel Lake Community Hall which sit on the banks of the beautiful Middle Shuswap River.

Middle Shuswap Watershed Interpretive Centre



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The Goal:

During the winter of 2017 the Mabel Lake Community Club (MLCC) Board decided to make the club more environmentally relevant by including an Interpretive Centre within the park boundaries. The goal of this centre would be to inspire stewardship within the Middle Shuswap River Watershed and to directly engage the community in ensuring the sustainability of the ecosystem. The centre would feature the roles of the local fauna and flora as well as other aspects of the ecosystem worthy of environmental protection. This would concretize the work done by RDNO, concerned citizens, water stewards and biologists over the last years.

The Vision:

The centre is designed to provide activities for people of all ages and to engage rather than preach. It offers sensory experiences that capture attention and are meant to provoke action.

A 4-sided kiosk featuring watershed maps and information will usher visitors in. After following a short walkway through a cedar grove, visitors will arrive at the gazebo where they will explore interpretive panels about the ecology of the watershed and stewardship. The panels will include QR codes (Quick Response) that can be swiped with a hand held mobile device (tablet, phone, etc.) to link to web sites that offer further information. Using this technology will save efforts and money since much of the information planned is already publicly available.

As visitors exit the gazebo they will follow an interpretive trail along the edge of the pocket wetland, through the riparian forest and along the river. The trail then loops back past the Salmon Hatchery to reach the grove of trees back to the gazebo. Sign identifying plants and relating stories about the habitat will be strategically placed low to the ground along the trail to not interfere with the viewscape.

Additional features include rest areas, viewpoints and a “blind” in the riparian bird sanctuary where nature enthusiasts can observe and photograph birds in their element.



The Location:

This proposed Centre is to be located on the grounds of Jack Tolley Park which are also home to the Mabel Lake Community Hall. The park and hall both belong to the Regional District of the North Okanagan Area D (RDNO) and are currently managed by the Mabel Lake Community Club (MLCC).

The park is central to the Middle Shuswap Watershed and represents an important viewing area for returning salmon. It borders the Shuswap River and the Department of Fisheries and Oceans Salmon Hatchery and is adjacent to the BC Hydro Recreation Site at Shuswap Falls. The park, hall and the community club itself serve as important cultural functions within the community of Mabel Lake, which is an important segment of RDNO Area D.

The board recognized that much work had already been done by RDNO and biologists. Research and planning includes the RDNO Sustainability Plan as well as studies done by Helen Davis, and Harry van Oort supported by FWCP. To reach its goal of inspiring stewardship, the interpretive centre will engage rather than preach. It will feature signs and offer experiences that capture attention and provoke action.

The Audience:

RDNO Area D continues to grow in population, as does the Middle Shuswap area. The demographic is shifting as long time residents retire from farming and logging and a new generation of landowner begins to emerge. It can be anticipated that the population of this area will become much more demographically diversified going into the future. It becomes important that this next generation become engaged with stewardship activities as quickly as possible. It is also important that the torch passes from one generation to another so that existing stewardship efforts can be maintained within a “long view”.

Currently the park has mixed use and since the majority of uses are “local” it is likely that this would hold true for an interpretive centre. This Concept Plan considers the following sketch of use: 70% Area D - 20% Lumby/Vernon - 10% Okanagan and Other

It should be considered that a great number of Area D residents would return to the centre with family and friends which would result in an immediate tourism appeal for the centre. As well, since numerous relevant events are planned, the centre will undoubtedly attract more locals to the Community club.

Activities & Events:

It becomes important to scope the nature of stewardship activities that the Middle Shuswap Watershed requires so that adequate recruitment goals can be understood, reached and maintained. The centre will be central to such efforts as educational programming emerges in the future. In the concept and design of this centre it remains important to consider what the stewardship needs are presently, and will be in 10, 20 and 50 years.

Just as this centre could not exist without the work done by so many over the years, its goals will not be met unless further action follows in the years to come. This can happen through regular programming of activities offered by the Mabel Lake Community Club and partners. Only this way will the centre truly become an integral part of the life of all who share this watershed.

The list below is only an example of the myriad of events, lectures, activities that can be planned to encourage stewardship of the Watershed. Activities should be planned regularly during the 4 seasons and headed as much as possible by local experts in the fields, of which we luckily have many.

<i>Example of Programming Activities in each season</i>			
<i>Spring</i> <i>Outdoor Events</i>	<i>Summer</i> <i>Outdoor Events</i>	<i>Autumn</i> <i>Outdoor Tours</i>	<i>Winter</i> <i>Indoor Presentations</i>
Bat Night	Aquatic Habitat. Plants, plankton, fish and mollusks.	Forest and Field Habitats.	The Geology & beginning of the Shuswap
How to attract beneficial insects and birds	Living and gardening without chemicals	Types of trees and understory, forest soils, fungi and mushrooms.	Retreating glaciers, climate change and ghost ecosystems.
Composting for healthy soil	Messengers in the Forest – Stress and Climate Change	Photosynthesis.	The present topography - where our water begins and flows.
Weekend river skill building activities	Various Earth Adventure camps (for children, teens and families)	Environmental leadership weekend training camps	The winter sky

Support and Potential Partners

Letters of support will be requested from the following groups and potential partners:

Monashee Arts Council
Lumby Council
Allan Brooks Nature Centre
First Nations
BC Hydro Fish & Wildlife Compensation Program
Kingfisher Interpretive Centre
SENS
Pacific Salmon Foundation
The North Okanagan Naturalist Club (NONC)
Lumby Water Stewards
Cherryville Water Stewards
Lumby Chamber of Commerce
Lumby and District Fish & Wildlife
Bee SAFE Monashees
Transition Town Vernon
Wildcraft Forest School
Elements Adventures
Pro-River Coalition Upper Shuswap River
Pro-River Coalition Lower Shuswap River
Helen Davis, senior wildlife biologist
Harry van Oort, senior wildlife biologist
Enderby and District Chamber of Commerce (River Ambassadors)
Fish and Game Protective Society - Bernie Moubury
Lower Shuswap Stewardship Society
Middle Shuswap Wild Salmon Society - Randy Raulk
Shuswap Environmental Action Society
Shuswap River Watch
Okanagan College
and more as we go....

The Plan:

It should be noted that this is a “living” conceptual plan that can evolve with input. There are 3 main elements to the Interpretive centre:

1. The Entry with its Clock Tower
2. The Centre's Display Stations
3. The Trail, Blind and Bird sanctuary.

Interpretive panels or “display stations” will contain multi media features supported with web-based displays through the use of Quick Response Codes (QR Codes). Physical displays will feature a small graphic that can be swiped with a handheld mobile device, which will then open a URL on the device. The URL will supply further information about the item of interest including photos, reports, links and videos.



QR Codes provide a very cost effective and practical way of moving a physical display into a virtual one. The application can also offer simple tracking which would help to gauge interest from display to display.

1. The Entry with its Clock Tower:

The entry point to the site is situated among the cedar trees opposite the community hall and the parking lot. It will feature a four-sided Clock Tower showing maps and images of the watershed at different times, introducing visitors to the area and its changes over time.

Each side is a satellite image and map with other images that visualizes a specific year in the Shuswap, such as perhaps:

Side 1: 1492

Side 2: 1922

Side 3: 1962

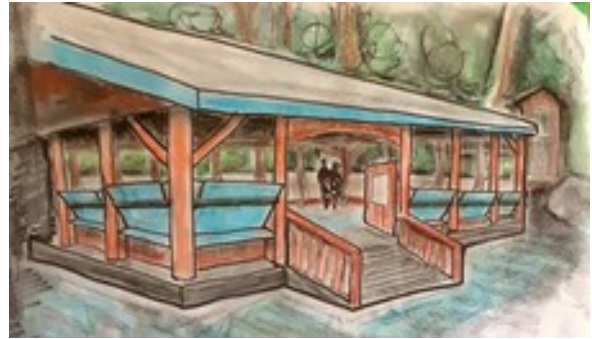
Side 4: 2018

The tower is surrounded by large boulders, which present the geology of the region. There is a sculptural feature within the top portion of the tower. From here a walkway moves toward the existing post and beam gazebo, which will contain the sixteen interpretive panels.



2. The Centre's Display Stations:

The Main centre building has a total of 16 interpretive panels or “display stations”. The building is divided into north and south wings. The north wing has six display stations dedicated towards stewardship. The south wing has ten display stations dedicated towards the ecology found within the watershed.



Each display station will host a QR link, which will open to a web page specific to the display topic. On this web page expanded information can be present and further links to research and news pertinent to the watershed including videos, etc.

The North Wing: Stewardship

The stewardship section aims at providing people with a tangible understanding of the strengths, weaknesses, opportunities and threats facing the Middle Shuswap Watershed. The information about biodiversity in the watershed is meant to provoke protective actions towards this fragile ecosystem.

It presents tangible actions that individuals, families and groups can carry out to restore and regenerate natural systems. The following gives examples of topics that can be illustrated in various ways under each theme:

1. **Water:** Aquatic plants provide food and cover for aquatic animals, and help maintain good water quality. There is a growing list of invasive species including aquatic species. The Upper Shuswap River is rich in native mussel beds. These play an important role by filtering the water (each mussel can filter and clean well over 50 litres of water/day) and they mix and oxygenate the river bottom sediments, increasing the productivity and diversity of life forms. Zebra mussels brought in by boats can kill native mussels.
2. **Landscape :** The landscape having a varied topography is featured. Healthy rivers have changing water depths, a range of bottom sediments, and diverse physical shapes from shallow riffles to quiet back channels and deep pools. This supports a wide variety of aquatic plants and animals, which in turn contributes to nutrient cycling, stabilizes sediments, provides food and shelter, and helps the ecosystem withstand pressures from pollution, climate change and other human impacts.

3. **Flora and Forest:** Forests protect rivers in many ways. With natural robust vegetation, healthy rivers have diverse algal and aquatic plant communities, and well-vegetated side banks. River bank vegetation provides shade for aquatic species in the summer, helps moderate changes in water temperature, which can be lethal to young fish fry, provides habitat for insects and birds that contribute to the food web, and protects against erosion during periods of high water. Cumulative impacts of motor vehicles, logging and other forms of human activity can destroy critical riparian habitat, cause bank erosion, introduce sediments, and impact water quality, all negatively impacting this fragile ecosystem.

4. **Fauna :** This section is designed to feature some of the special fauna of the watershed so that visitors can see how natural systems and species are presently being affected by human interventions. This display outlines a few examples regarding impacts and features fish and mollusks, amphibians, birds, reptiles and mammals of the watershed specifying their habitat needs.

5. **Human Footprints:** The human footprint is examined and how negative actions can damage a watershed. Much can damage biodiversity such as too much water extraction, too many farm animals on the range, use of chemicals and pesticides in agriculture, deforestation, increased motorboat and recreation traffic causing erosion and noise, dumping of poisonous substances and garbage from increased urbanization. Natural systems require a quiet and safe environment in order to thrive. Aquatic species and animals need quiet to sense danger, protect themselves, reproduce, raise their young, and feed. Loud noises disturb birds and other animals' communications and cause stress, making all species vulnerable to sickness. Motorboat wakes can also drown shorebirds' nests.

6. **Our changing environment and “10 things you can do”:** climate change along with the reduction of biodiversity are having dramatic effects on the environment including the foods we can grow. Here are 10 actions each of us can do to regenerate and revitalize the environment in which we live: TBD.

As well, there are two sub-stations featured in this section and they are laid out within the larger station panels. The first describes “Bioregionalism” and the difference between “management and stewardship” and “sustainable and regenerative”. The second describes “biodiversity” and “shadow biodiversity”.

The South Wing – Ecology of the Middle Shuswap Watershed

Within the Middle Shuswap Watershed there is a large constituency of people who consider the protection of the river's ecosystems critical to the survival of all species who depend on it. The World Wildlife Fund reports that in the past 40 years freshwater species have declined by 81%. Already the Shuswap River watershed has 62 species, that are considered to be of "special concern". The following represents the themes attached to the ten individual display stations within the South wing

1. The Geology of the Shuswap and how it began. Retreating glaciers, climate change and ghost ecosystems. The present topography and where our water begins and flows.
2. Aquatic Habitat. Plants, plankton, fish and mollusks.
3. Reptiles and Amphibians
4. Forest and Field Habitats. Photosynthesis. Types of trees and understory, forest soils, fungi and mushrooms.
5. Invertebrates and common bugs.
6. Pollens and Pollination. How natural regenerative systems work.
7. Songbirds, big birds and bats. Migration.
8. Mammal
9. Mammals
10. Messengers in the Forest – Stress and Climate Change

3. The Trail, Blind and Bird sanctuary

As visitors exit the Display Station Centre they will follow an interpretive trail along the edge of the pocket wetland, through the riparian forest and along the river. The trail then loops back past the Salmon Hatchery to reach the grove of trees back to the Display Station Centre. Plant and habitat identification signs will be strategically placed low to the ground to not interfere with the viewscape. Additional features include rest areas, viewpoints and a "blind" for observing bird habitat in the riparian area.



The blind consists of a low post and beam structure partially dug into the ground. It will serve as a bird-viewing site, which will be of special interest to photographers and students of wildlife biology.

The Budget:

This Concept Plan considers a phased development approach that can only be delivered if external funding is captured and strategic partnerships are secured for each individual phase of development. It would make sense to start by developing all the information that will reside on the display stations first, and then to get the panels printed and installed so that there would be a core to the Interpretive Centre but this decision will depend on what funds and contributions are secured.

MIDDLE SHUSWAP INTERPRETIVE CENTRE – DRAFT BUDGET

Tower at entry

Research & Design of information	\$5,000.00
Content & Maps & Images	\$5,000.00
Engineering	\$3,000.00
Building the structure	\$12,000.00
Sculpture	\$2,000.00
Landscaping around the tower	
Boulders & others around the tower	\$4,500.00
Lighting	\$500.00

Ideas to explore

Ask RDNO if required or available free?

Make this a community event?
Board to install?



Total Tower and Entry

\$32,000.00

Interpretive Centre & 16 Panels

Research & Design of information to display	\$8,000.00
Content, Maps & Images	\$8,000.00
Engineering of the structure	
Wheelchair access, gates, cosmetic mods, exterior sign on the gazebo	\$10,000.00
Building & installation of panels	
Eng. & Labour	\$4,000.00
plywood	\$2,400.00
glass (lexan?)	\$1,600.00

Contact FN to see what they consider important and might already have
Ask RDNO if this is required
Make this a community event & save labour?



Total Interpretive Centre

\$34,000.00

Paths, blind & songbird sanctuary

Bobcat work to even out app. 1.2 km of walkway
 Weed whacker & mower work
 Clean up debris, etc...
Total for paths \$8,000.00

Direction sign at entrance to pathway **\$1,000.00**

Blind, walkway & fencing around songbird sanctuary **\$7,500.00**

Songbird sanctuary info panel inside blind **\$500.00**

Interpretive flares & benches **\$8,000.00**

Pathway plant signs **\$4,000.00**

Total for paths, blind and songbird sanctuary: \$29,000.00

QR virtual links for tower, centre and blind panels \$5,000.00

Total costs of Tower, Interpretive Centre, Pathway and Songbird Sanctuary \$100,000.00

Verify if path near hatchery is OK
 Community event?
 Community event?

Blind should only be accessible on demand?
 Fenced sanctuary to be off limit to dogs

Blind & songbird sanctuary

