

# EIA REGISTRATION

*As per Environmental Impact Assessment Regulation – Clean Environment Act.*

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## **Village of Grand Manan Aquatic Centre and Wellness Facility**



### **Prepared For:**

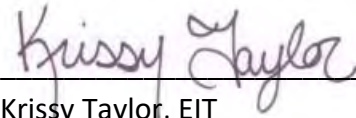
Village of Grand Manan  
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### **Prepared By:**

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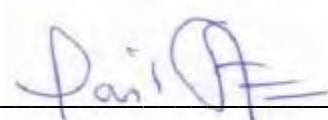
August 15, 2018

**Prepared by:**



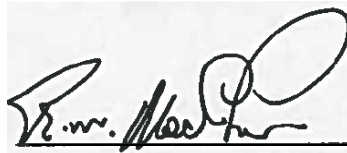
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# EIA Registration

Aquatic Centre and Wellness Facility  
Grand Manan, New Brunswick

SSL Project: 17-10-004

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August 15, 2018

Sheila Goucher, Project Manager  
Environmental Impact Assessment Branch  
Department of Environment and Local Government  
PO Box 6000  
Fredericton, NB E3B 5H1

**Subject: EIA Registration for Village of Grand Manan Aquatic Centre and Wellness Facility**

Dear Ms. Goucher:

Please find enclosed a completed EIA Registration for the Village of Grand Manan's proposed Aquatic Centre and Wellness Facility.

As per the Environmental Impact Assessment Regulation – Clean Environment Act the following items, specified in Schedule A of the regulation, were identified to be potential triggers pertaining to this project:

- (n) all sewage disposal or sewage treatment facilities, other than domestic, on-site facilities;
- (p) all major recreational or tourism developments, including developments which consist of changing the use of land so that it is used for recreational or tourism purposes;
- (s) all waterworks with a capacity greater than fifty cubic metres of water daily; and
- (v) all enterprises, activities, projects, structures, works or programs affecting two hectares or more of bog, marsh, swamp or other wetland.

There are no significant environmental impacts predicted from the construction, operation and maintenance of this undertaking; and we look forward to working with your staff in reviewing this application and securing the necessary approvals. If we can provide any additional information or if you have any questions, please do not hesitate to contact us.

Sincerely,

Krissy Taylor, EIT – Silk Stevens Limited

CC: Rob MacPherson, CAO – Village of Grand Manan  
Dave Stevens, P.Eng. – Silk Stevens Limited

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## **1.0 THE PROPONENT**

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### **1.1 NAME OF PROPONENT**

Village of Grand Manan

### **1.2 ADDRESS OF PROPONENT**

4 – 1021 Route 776  
Grand Manan, NB  
E5G 4E5

### **1.3 PRINCIPAL PROPONENT CONTACT**

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### **1.4 PRINCIPAL CONTACT PERSON FOR PURPOSE OF EIA**

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### **1.5 PROPERTY OWNERSHIP**

PID #15185465  
Village of Grand Manan

## 2.0 PROJECT DESCRIPTION

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### 2.1 PROJECT NAME

Village of Grand Manan Aquatic Centre and Wellness Facility.

### 2.2 PROJECT OVERVIEW

The Village of Grand Manan is requesting approval to build a year-round Aquatic Centre and Wellness Facility for the use and enjoyment of Island residents, businesses, institutions and visitors. The current proposal consists of a 25,000 square foot facility including a 5-lane lap pool, ancillary children's pool, water slide, spectator area, a walking track, and ancillary support and revenue spaces.

The Village of Grand Manan proposes to locate the Aquatic Centre and Wellness Facility adjacent to the existing Community Centre at 1021 Route 776 which opened in 2011. This location is ideal as it enables some of the current staff to oversee both the Community Centre and the Aquatic Centre and Wellness Facility, significantly reducing the operating costs of the facility.

No prior EIA registration had been done for the existing Community Centre. For the proposed Aquatic Centre and Wellness Facility, the following triggers specified in Schedule A of the *Environmental Impact Assessment Regulation – Clean Environment Act* have been identified to pertain to this project:

- (n) all sewage disposal or sewage treatment facilities, other than domestic, on-site facilities;
- (p) all major recreational or tourism developments, including developments which consist of changing the use of land so that it is used for recreational or tourism purposes;
- (s) all waterworks with a capacity greater than fifty cubic meters of water daily; and
- (v) all enterprises, activities, projects, structures, works or programs affecting two hectares or more of bog, marsh, swamp or other wetland.

### 2.3 PURPOSE / RATIONALE / NEED FOR THE UNDERTAKING

The Village of Grand Manan has proposed to construct an Aquatic Centre and Wellness Facility in proximity to the existing Community Centre. The project intends to replace the existing Grand Manan outdoor pool, which is more than 50 years old, at the end of its service life and is very expensive to operate and maintain. The existing Grand Manan outdoor pool operates approximately 10 weeks per year and is highly utilized. A new indoor aquatic facility would serve



Island residents year-round, be significantly more efficient to operate; and provide additional services to Island families and businesses for sports, leisure and training purposes.

In collaboration with the Village of Grand Manan, the Village of Grand Manan Recreation and Parks Committee and key stakeholders, the proposed facility was determined to be important municipal infrastructure to serve the Island community. The Province of New Brunswick and the Government of Canada have recognized the role of wellness as a key foundation block for reduction in the rising rate of healthcare costs and both governments have expressed a willingness to support this project for the Village of Grand Manan.

Positively contributing to the physical and mental health of the residents and visitors, this facility will fulfill the need for a year-round aquatic program that does not currently exist on the Islands of Grand Manan. This facility will also support effective management of chronic health problems and allow residents that require physiotherapy the option to receive these services without travelling off the Island. In addition to the health and wellness services offered, this facility will also be able to house Marine Emergency Duty (MED) certification training which is required for most fishery and aquaculture jobs. The facility will also support dive training for recreation or employment.

It is anticipated that the facility would require approximately 3 full time operations staff and 2 full time lifeguards therefore creating a minimum of 5 full time jobs and the opportunity for many volunteer positions to engage with the community.

## **2.4 PROJECT LOCATION**

The proposed location for the Aquatic Centre and Wellness Facility will be:

- Located on PID #15185465
- 4 – 1021 Route 776  
Grand Manan, NB  
E5G 4E5
- See attached C-01 Location Plan in Appendix B.

## **2.5 SITING CONSIDERATIONS**

### **2.5.1 Site Location Determination**

Grand Manan Island is located in southwestern New Brunswick in the Bay of Fundy. It is approximately 32 kilometres from mainland New Brunswick and 12.5 kilometres from the southern tip of Campobello Island just east of West Quoddy Head. The island is approximately 11 kilometres wide and 24 kilometres long with its axis running northeast. It includes five communities amalgamated into the Municipality of Grand Manan.

The proposed location for the Facility discussed herein is adjacent to Route 776 and across from the existing Community Centre. This site has many cost advantages as the municipality already owns the land, existing services and other infrastructure are already present, and management, operation and maintenance resources can be shared between the existing Community Centre and proposed Aquatic Centre and Wellness Facility. For the project to be economically viable it is important that the facilities be in close proximity to each other. By constructing the facility where proposed, there will also be good visibility of the facility from one of the most travelled roads on Grand Manan in addition to being as far as practicable from the existing wetland, as can be seen on drawing C-05 in Appendix C.

The transmission lines on Route 776 will provide 3-phase power to the facility. Due to the proximity of the facility to the existing transmission lines, minimal infrastructure will be needed to connect to 3-phase power. To maximize the energy efficiency of the facility, a closed loop horizontal geothermal field is being considered.

Water for the facility will be used for several purposes which can be generally described under two categories: domestic purposes and process/service water. It is anticipated that one (or more) new drilled wells will be required to serve this facility. Section 2.8.2 further discusses Water Supply and Usage.

## **2.6 PHYSICAL COMPONENTS AND DIMENSIONS OF THE PROJECT**

The existing conditions and proposed project site plans are provided in Appendix B and C. The site is approximately 17.03 acres in size with approximately 4 acres currently in use by the existing Community Centre. The current proposal consists of a single level 25,000 square foot facility including a 5-lane lap pool, ancillary children's pool, water slide, spectator area, a walking track, and ancillary support and revenue spaces. A preliminary floor plan is attached in Appendix C.

According to current GeoNB mapping, there is a wetland of size 2.93 hectares (7.24 acres) near and on the site, this map is illustrated on drawing C-03 in Appendix B. Silk Stevens Limited had retained a Wetland Delineator to assess the site as there were some discrepancies between what is mapped and the actual conditions. The wetland delineation report confirmed the wetland is much smaller than mapped and the new boundary is shown on drawing C-04 in Appendix B and the full report can be found in Appendix I. The new wetland delineation has been accepted by the Department of Environment and Local Government as of July 17, 2018. The proposed Aquatic Centre and Wellness will be required to be constructed within the wetland and/or its setbacks.

As per the Rural Plan By-Law for the Municipality of Grand Manan the following set-backs apply:

- *3.4 (1) No main building or structure may be placed, erected or altered so that any part of it:*

- (a) is less than 7.5 metres from the boundary of a street, private access, lane, right-of-way or highway other than an arterial or collector highway;
  - (b) is less than 3 metres with respect to side lot lines and rear lot lines.
- 3.4 (2) Without being closer than 4.5 metres from the boundary line of a highway, private access, lane, street or right-of-way, a building or structure may be placed, erected or altered so that it is as near a boundary of a highway, private access, lane, street or right-of-way used as an access for vehicles as existing buildings or structures provided that;
- (a) the existing buildings or structures are on each side of and immediately adjacent to such building or structure; and
  - (b) the nearest side of each existing building or structure immediately adjacent thereto will be within 30 metres of the nearest side of the building or structure to be placed, erected or altered.

Additionally, a 5.5-m setback from the existing geothermal field is recommended to ensure the existing geothermal pipes are not impacted during construction of the new facility

### 2.6.1 Project Components

The size of the main components of the Aquatic Centre and Wellness Facility development are summarized in the following two tables, Table 2-1 and Table 2-2.

Table 2-1: Aquatic Centre and Wellness Facility Components

Component	Footprint
5-lane Lap pool	4,100 ft <sup>2</sup> (390 m <sup>2</sup> )
Multi-Use Leisure pool	2,050 ft <sup>2</sup> (190 m <sup>2</sup> )
Spectator area	230 ft <sup>2</sup> (20 m <sup>2</sup> )
Locker/Shower/Change rooms	2,000 ft <sup>2</sup> (190 m <sup>2</sup> )
Lobby	190 ft <sup>2</sup> (18 m <sup>2</sup> )
Administration Office / Information Centre	380 ft <sup>2</sup> (40 m <sup>2</sup> )
Aerobics/Fitness Space	1,320 ft <sup>2</sup> (120 m <sup>2</sup> )
Electrical/Mechanical Room	270 ft <sup>2</sup> (25 m <sup>2</sup> )
Pool Office	260 ft <sup>2</sup> (25 m <sup>2</sup> )
Pool Storage	130 ft <sup>2</sup> (12 m <sup>2</sup> )
Pool Equipment and Mechanical Space	1,070 ft <sup>2</sup> (100 m <sup>2</sup> )
Walking Track	5,900 ft <sup>2</sup> (550 m <sup>2</sup> )
<b>TOTAL NEW POOL FACILITY BUILDING</b>	<b>~25,000 ft<sup>2</sup> (2,300 m<sup>2</sup>)</b>

Table 2-2: Infrastructure

Component	Footprint
Parking lot addition	83,700 ft <sup>2</sup> (7,780 m <sup>2</sup> )
Access roads	5,000 ft <sup>2</sup> (470 m <sup>2</sup> )
Water supply	N/A
New septic tank and field	3,000 ft <sup>2</sup> (280 m <sup>2</sup> )
Geothermal fields	81,700 ft <sup>2</sup> (7,580 m <sup>2</sup> )
Electrical and telecommunications transmission lines	N/A
External lighting	N/A
Cistern pumphouse	2,700 ft <sup>2</sup> (250 m <sup>2</sup> )
<b>TOTAL IMPERVIOUS SURFACES (excludes septic field, and geothermal fields)</b>	<b>91,400 ft<sup>2</sup> (8,530 m<sup>2</sup>)</b>

This facility will require its own on-site wastewater treatment facility which will be designed to suit the needs of the facility. Section 2.8.3 discusses the Waste Management During Operation. There is an existing septic field on the site that serves the existing Community Centre, which will remain separate from the new facility.

External lighting will be implemented in the design of the facility in the following locations: parking lot, cistern pumphouse and for landscaping purposes. The exact specifications of the external lighting will be determined during the detailed design phase.

## 2.7 CONSTRUCTION DETAILS

### 2.7.1 Construction Timeline

Once funding is confirmed, it is estimated the project will take 9-12 months to complete, including the design and approval process (excluding the EIA determination). The estimated hours of construction are 8-12 hours per day, Monday to Saturday. The construction is proposed to commence in Spring 2019 with the facility open to the public in the Fall or Winter 2019. The following table, Table 2-3, is an approximate outline of the construction activities and durations. Landscaping is not included in this timeline as it will be ongoing. Many of the activities will occur concurrently which is not accurately depicted by the presented construction timeline.

Table 2-3: Approximate Construction Timeline

Duration	Task
2-6 Months	<b>Design Consultation and Detailed Design</b> <ul style="list-style-type: none"> <li>- Preparation of tender documents</li> <li>- Tendering</li> </ul> <b>Building Permit Application and Project Permitting</b> <ul style="list-style-type: none"> <li>- Watercourse and Wetland Alteration Permit (10 days – 4 weeks) depending on risk to environment</li> <li>- Development and Building Permit</li> </ul>
2-3 Weeks	<b>Site Preparation</b> <ul style="list-style-type: none"> <li>- Grading</li> <li>- Removal and stockpiling of topsoil for landscaping</li> <li>- Excavation for foundations</li> <li>- Drainage/ Ditches</li> </ul>
4-8 Weeks	<b>Foundations/Subfloor</b> <ul style="list-style-type: none"> <li>- Layout footings</li> <li>- Install reinforcements</li> <li>- Pour concrete</li> </ul>
2-4 Weeks	<b>Initial Plumbing/ Electrical</b>
6-12 Weeks	<b>Framing/Roof/ Siding</b>
2-4 Weeks	<b>Rough-in Plumbing/ Electrical</b>
2-6 Weeks	<b>Heating/Cooling Systems</b>
2-4 Weeks	<b>Drywall/ Insulation/ Windows</b>
4-8 Weeks	<b>Finishes</b> <ul style="list-style-type: none"> <li>- Paint</li> <li>- Flooring</li> <li>- Doors/trim</li> <li>- Finish Plumbing/ Electrical</li> </ul>
2 Weeks	<b>Commissioning/ Inspection</b>

### 2.7.2 Construction Equipment and Materials

The concrete required for the construction of the facility will be supplied from a concrete batch supplier on the Island of Grand Manan. Any additional fill materials required for the construction of the facility will be sourced from available pits and quarries on Grand Manan.

All equipment necessary for the construction of this facility is available on the Island of Grand Manan and it is not anticipated that a transportation plan will be necessary for the construction of this facility.

There is no merchantable timber on the proposed footprint of the facility. Any reclaimable topsoil excavated from the land will be used onsite for landscaping.

There will be a laydown area on the construction site for all construction materials.

### **2.7.3 Waste Management and Pollutants During Construction**

Construction debris generated by the construction of the facility will be disposed of at the existing Island Construction and Demolition Debris (C&D) disposal site located in the Village of Grand Manan, PID # 01287135. All debris will be disposed of in accordance with the Grand Manan Commercial C&D Policy. Any waste oils or lubricants generated by contractors will be collected and disposed of using approved hazardous materials collectors. All other waste, organics and recyclables will be disposed of at the Village of Grand Manan Transfer Station.

All construction activities will be restricted to normal daylight working hours, 8-12 hours per day therefore, avoiding noise disturbances and light pollution at night in the area.

### **2.7.4 Construction Near Environmentally Sensitive Areas**

As shown on C-05 Proposed Project Site Plan with Delineated Wetland Setbacks in Appendix C, the proposed location of parking and septic system will be within the wetland and its setbacks. Excavation near the wetland would be necessary to accommodate the septic system. For the parking, the wetland in the area would need to be filled in with appropriate materials.

## **2.8 OPERATION AND MAINTENANCE DETAILS**

### **2.8.1 Facility Operation and Maintenance**

The pool will be designed by Aquapro Aquatic Design Inc. Pending funding and approval of this facility, Aquapro will provide the following details pertaining to the operation of the pool in addition to the typical maintenance operator duties and scheduled tasks below (Lipski, 2017):

- Provide design data for the pool systems including surface area, capacity, turnover rate, filter type, filtration rate, filtration area, backwash and drain down flow rates.
- Provide filtration, sanitizing and heating systems options and recommendations for client and consultant review.
- Provide swimming pool requirements to mechanical and electrical consultants e.g. heaters, backwash / drain down flow rates, electrical requirements of equipment 110V and greater etc.

#### **Typical Maintenance Operator Duties:**

1. Perform routine maintenance and cleaning of swimming pools; brush and scrub pool tiles, side and bottom; vacuum pool using proper equipment and procedures.
2. Sweep, scrub or hose pool decks; empty trash, clean drains and gutters.
3. Operate hand and power tools, testing and calibration equipment, pool vacuums, and chemical testing kits.
4. Perform chemical level tests and maintains records of results required by health regulation standards; adds chemicals as needed to maintain water quality.

5. Operate, adjust and repair automated swimming pool controllers and chemical injection systems; maintain records according to health regulation standards.
6. Operates, backwashes, and cleans media of pool filtration systems.
7. Perform preventive maintenance and repairs to pool machinery and equipment, including, but not limited to, pumps, filtration equipment, and heaters.
8. Inspect diving boards, ladders, lights and safety equipment.
9. Assists in ordering supplies and equipment and maintains inventory and water use records.
10. Assists in the coordination of pool maintenance / shutdown with management.
11. Interact effectively with site staff, coaches, and representatives of community organizations; assist as needed with set-up of pool equipment for classes, competitions or events.
12. Performs custodial activities to clean facilities, such as pool deck, locker room, restrooms and lobby.
13. Coordinates and oversees maintenance crews temporarily assigned to clean or repair facility.

**Typical Scheduled Tasks:**

1. Daily manual water chemical testing as required by health department guidelines, record values, adjust automatic chemical controller set points, add chemicals required to manually balance water chemistry as required.
2. Daily monitoring of pool mechanical equipment e.g. chemical feed equipment, pumps, filters, heaters, etc.
3. Daily waterslide inspection as per manufactures checklist.
4. Weekly backwash / cleaning of pool filtration systems. (Depends on type of filtration system used and facility pool use.)
5. Weekly inspection of pool deck and equipment e.g. diving boards, lifeguard chairs, rails, etc.
6. Cleaning of pool tanks, pool decks and equipment. Daily, bi-weekly, weekly to be adjusted with use of facility.
7. Schedule preventive maintenance of pool pumps, heaters, etc. per manufacturers recommendations.
8. Maintain stock of required pool chemicals and spare parts.

All chemicals required for the operation of the chlorinated pool will be stored in the pool Chemical Storage Room. Appropriate storage and safety information pertaining to the chemicals will be provided.

## 2.8.2 Water Supply and Usage

The facility's water consumption will be for domestic uses as well as process/service water for the pool. The water supply from the facility will be from drilled wells on-site.

A preliminary estimate of the daily water usage of the facility was calculated. If the daily water usage would not exceed 50 m<sup>3</sup>, a Water Supply Source Assessment (WSSA), an EIA trigger, would not be required. The daily water usage was determined by combining the following:

- 115% of the estimated daily sewage flow.
- Estimated daily pool make-up water/cleaning water.

The estimated maximum daily water usage (with a 1.5 safety factor on the estimated daily sewage flow) was found to be 43.8 m<sup>3</sup>. Refer to Appendix G for details and assumptions.

## 2.8.3 Waste Management During Operation

### Pool Wastewater Treatment:

For the operation of the pool, there will be a dechlorination system for the weekly/monthly backwash water that will be designed and installed according to applicable codes. Additionally, a backwash pit and the sanitary lines will be designed to accommodate filter backwash cycles and pool draining. It is anticipated that the pool will be drained once a year. The initial filling of the pool will likely be done by fire trucks. Specific details pertaining to the waste water treatment for this facility will be determined in the detailed design phase when the project receives funding and approval.

### Domestic Waste Management:

All domestic solid wastes, organics and recyclables will be transferred to the Village of Grand Manan Transfer Station.

There will be an on-site sewage disposal system to serve the Aquatic Centre and Wellness Facility. This system will be similar to the existing system that serves the Community Centre. It will be necessary to obtain the appropriate permits from the Department of Environment and Local Government before commencing the work. The estimated maximum daily sewage flow was found to be 34,755 Litres per day. Refer to Appendix G for assumptions.

The existing septic system consists of:

- 1000 IMP. GAL. 2 Compartment Precast Concrete Septic Tank c/w Effluent Filter
- 1000 IMP. Gal. Precast Concrete Tank Dosing Siphon Chamber
- Distribution box to 9 rows of Leach Field Chamber System Infiltrator x 12 units



Preceding the design of a suitable septic system and disposal field, an assessment of the suitability of the soil for the installation of such a system will be done. The new infiltrator field will be excavated and filled with appropriate amounts of sand, clear stone, crushed rock or similar approved local materials in accordance with the NB Technical Guidelines for On-site Sewage Disposal Systems.

#### 2.8.4 Required Employees

It is expected that 3 full time operations staff and 2 full-time lifeguards will be required to operate the proposed Aquatic Centre and Wellness Facility. The certified Pool Operator will also be the full time Building Caretaker splitting their time between the swimming pool and other normal building maintenance duties. There would also be a full-time cleaning position for the entire building including the pool areas, changing rooms and the wellness facilities. We have assumed that any part time staff required thereafter would be volunteers or existing Recreation and Community Centre staff as suggested in discussions with the Village and current Recreation Director.

The Aquatic Centre lifeguard staffing requirements are based on guidelines from the Canadian Lifesaving Society. For recreational swim area water surfaces of 400 square meters or less, the following table shows the minimum recommended lifeguard requirements:

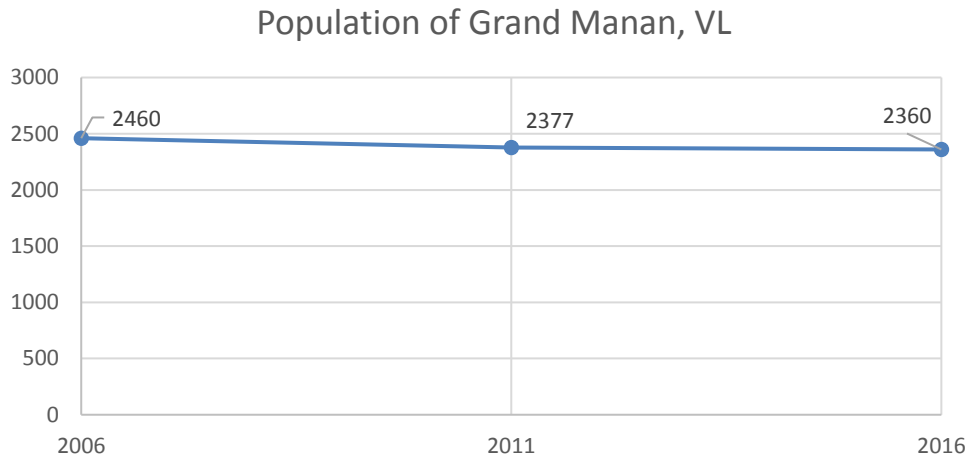
*Table 2-4: Minimum Recommended Lifeguard Requirements.*

<b>Number of bathers on the deck and in the pool</b>	<b>Minimum number of Lifeguards on deck, on duty</b>
0-40	<b>1</b>
41-80	<b>2</b>
81-140	<b>3</b>
141-200	<b>4</b>
200 and beyond	<b>1 additional lifeguard for each additional 100 bathers or fraction thereafter</b>

Our estimate of the lifeguard staffing requirements is based on the facility being open 12 hours per day with the minimum number of bathers (0-40) in each of the pools at any one time; which will require a minimum of 2 lifeguards on duty at all times during operating hours.

## 2.9 FUTURE MODIFICATIONS AND EXTENSIONS

Future modifications and extensions to this facility are not anticipated as the population of the Village of Grand Manan is relatively constant.



*Figure 2-1: Population of Grand Manan, VL (Statistics Canada, 2017)*

## **2.10 DOCUMENTS RELATED TO THE UNDERTAKING**

- Feasibility Study: Village of Grand Manan Aquatic Centre and Wellness Facility attached as Appendix L.
- ACCDC Data Report 6096: Grand Manan Island, NB attached as Appendix E.

## **3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT**

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### **3.1 PHYSICAL AND NATURAL FEATURES**

A customized report of rare and endangered flora and fauna known to occur in and near the site location was prepared by the Atlantic Canada Conservation Data Centre (ACCDC). Additionally, locations of managed areas with some level of protection and known sites of ecological interest or sensitivity were identified by ACCDC. Please refer to Appendix E for the ACCDC report on these items.

The Grand Manan Island Migratory Bird Sanctuary (MBS) is situated on the southeast coast of Grand Manan Island between the Grand Harbour and Seal Cove and is 433 hectares in size. It is located approximately 3 km from the site. This MBS is managed by the Atlantic Region of the Canadian Wildlife Service. None of the key bird species in this sanctuary are listed under the Species at Risk Act (SARA) (Canadian Wildlife Service, 2017).

#### **3.1.1 Topography**

The site is generally flat with a small wetland area as shown on C-02 Existing Conditions Site Plan (with Aerial) and C-04 Existing Conditions Site Plan Delineated Wetland - Setbacks included in Appendix B. Site topography (maximum and minimum site elevations and gradients, surface drainage, etc.) will be determined with a topographic survey as part of the detailed design process. The Survey and Engineering consultants will be retained when approval and funding is acquired. Prior to the construction of the existing Community Centre a site survey had been done by ADI Limited and is provided in Appendix A. There is also a graded gravel parking lot where the proposed footprint of the facility is.

#### **3.1.2 Geology & Soil**

Bedrock Aggregate Site Data for a sample obtained approximately 2.3 km from the site is provided in Appendix D. When funding and approval for the project is acquired, a geotechnical engineering consultant will be hired to perform a soil investigation of the site location to provide geotechnical recommendations for the site development, parameters for foundation design and building recommendations.

#### **3.1.3 Hydrology**

The wetland in proximity to the proposed project location was found to be approximately 2.93 hectares based off the GeoNB Regulated Wetland Map dated 2011-01-03, Figure 3-1, which would trigger an EIA as described below:

- *(v) all enterprises, activities, projects, structures, works or programs affecting two hectares or more of bog, marsh, swamp or other wetland.*

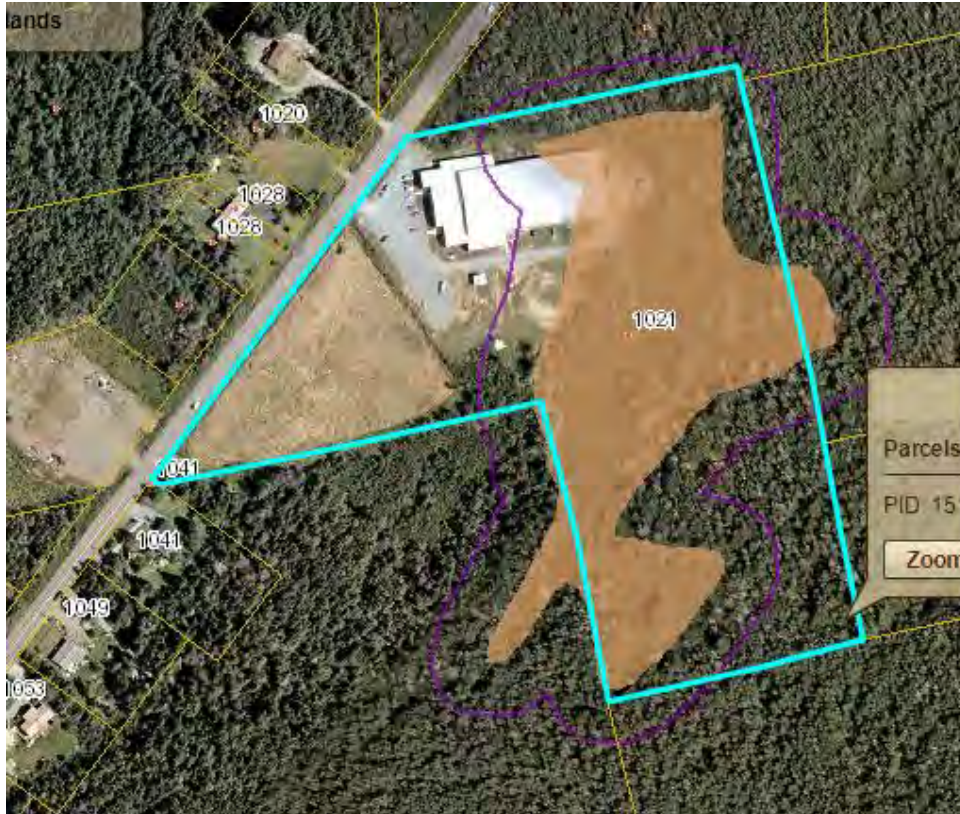


Figure 3-1: Regulated Wetland GeoNB



Figure 3-2: Delineated Wetland and Data Points

Overdale Environmental Inc. was hired to confirm the size of the wetland and delineate if required. The full Wetland Delineation Report is included in Appendix I. The resulting size of the wetland was found to be 0.65 ha in two distinct but connected lobes and a small (less than 0.1 ha) marshy wetland area near the clearing by parking lot (Popma, 2018). Interpretation of aerial photos, Figure 3-2, indicates that the total size of this wetland (both on and off this PID) is approximately 1 ha in total; it is noted that this is considered to be an Atypical Area where human impacts affect analysis of wetland indicators, and that it is a Problem Area where natural events such as beaver activity also affect indicators (Popma, 2018).

The wetland delineation and functional assessment was submitted and accepted by the Department of Environment and Local Government. Since the wetland is approximately a third of the mapped size, it is no longer one of the EIA triggers related to this project.

### 3.1.4 Vegetation

The site has a small creek running through the property which has a small Speckled Alder floodplain, the surrounding forest is mostly a wetland forest (Chiasson, 2018).

Overdale Environmental Inc. was hired to conduct a vascular plant survey of the site on June 16<sup>th</sup>, 2018. During the survey 94 species of vascular plants were identified and none were species of conservation concern. Refer to Appendix K for full Rare Vascular Plant Survey Report.

The habitats which were identified on the site are presented in Table 3-1 and Figures 3-1 to 3-10.

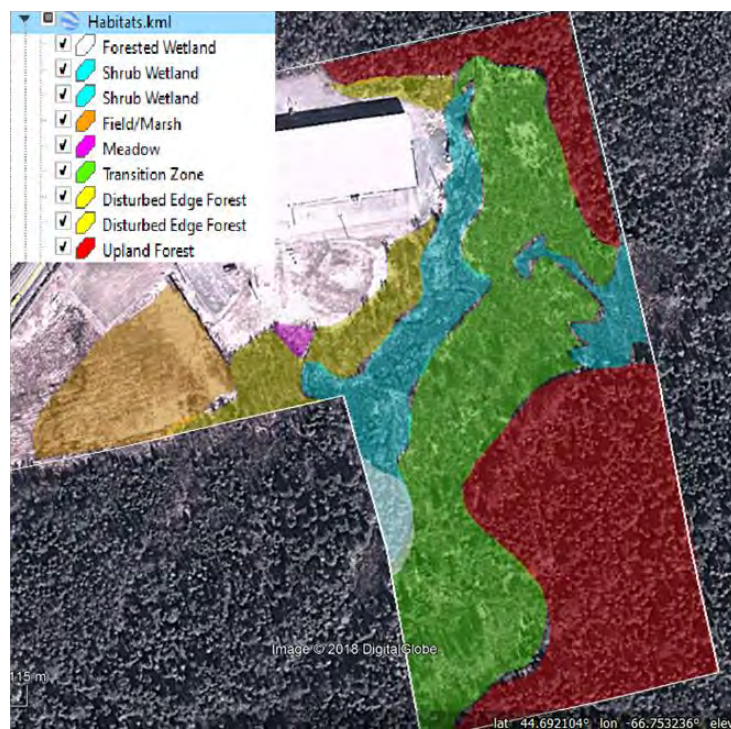


Figure 3-3: Habitat Map

Table 3-1: Habitats

Figure/Habitat Type	Description
Figure 3-4: Forested Wetland	A small patch of Forested Wetland was identified along the southwestern edge of the PID. This habitat is near the wetland boundary and near small microtopographical incline of about 4 feet. Deeply pitted and hummocked mossy ground was relatively open and interspersed with ferns and shrubs. No channeling was observed, but this habitat was found to be similar to where Shrub Wetland narrows to form a channel beneath the forest canopy at the northern edge of the PID. (Popma, 2018)
Figure 3-5: Shrub Wetland	This is the dominant wetland type on the PID. Speckled Alders dominate but sedge-dominated graminoid cover is also abundant. Smaller microhabitats such as bare-ground muddy depressions, open water, channels and upland inclusions were also present. Two 3 primary lobes of shrub wetland were present and found to be joined by a narrow (less than 5m) hydrological connection. (Popma, 2018)
Figure 3-6: Field/Marsh	This area is likely mowed infrequently to keep shrub vegetation down, but some natural characteristics still persist. Part of this region was identified as wetland according to standard wetland delineation protocols. Poor drainage has led to a small marshy graminoid-dominated depression within the field. Exotics such as Tufted Vetch and Vernal Grass were common as well. (Popma, 2018)
Figure 3-7: Lawn and Meadow	Lawn grasses allowed to grow freely occupy the edge of the parking area next to the slope leading to the nearby wetland. Canada Blue-Joint is also present. Virtually no shrubs are present here. (Popma, 2018)
Figure 3-8: Dried Down Transition Zone	This is a relatively large area which apparently used to be wetland but has since dried down likely due to the presence/absence of beaver activity. Soils sampling and hydrological indicators show that this is not wetland, but the vast majority of vegetation is still hydrophytic. A slight slope also helps drain this region creating suitable habitat for upland species of grasses and even some large White Spruce. (Popma, 2018)
Figure 3-9: Disturbed Forest Edge	Invasive herbaceous species dominate the understory of this habitat which is adjacent to the arena parking area. Young White Birch, Serviceberry and Speckled Alder are also present as shrubs and saplings. (Popma, 2018)
Figure 3-10: Mixed Upland Forest	The Forest surrounding the wetland transition zone is moderate-aged to mature and consists of a mixture of coniferous and deciduous species such as White Spruce and White Birch. The understory is relatively empty and dominated by bryophytes as is typical of boreal forests. A substantial amount of blowdown is present especially around the edge near the open transitional zone. (Popma, 2018)



*Figure 3-4: Forested Wetland (Popma, 2018)*



*Figure 3-5: Shrub Wetland (Popma, 2018)*



*Figure 3-6: Field/Marsh (Popma, 2018)*



Figure 3-7: Lawn and Meadow (Popma, 2018)



Figure 3-8: Dried Down Transition Zone (Popma, 2018)





*Figure 3-9: Disturbed Forest Edge (Popma, 2018)*



*Figure 3-10: Mixed Upland Forest (Popma, 2018)*

### **3.1.5 Wildlife**

Aster Group Environmental Services Co-op Ltd. was hired to perform a Bird Survey of the area and their full report can be found in Appendix J. From their observations on June 15<sup>th</sup> and June 16<sup>th</sup>, 2018 no bird species at risk or of conservation interest were observed. Twenty-two species

were observed, and 32 individuals were counted; bird species seen on June 16<sup>th</sup>, 2018 are presented in Table 3-2.

Table 3-2: Bird Species Seen on June 16th

Alder Flycatcher	Hairy Woodpecker
American Redstart	Magnolia Warbler
American Robin	Nashville Warbler
Black and White Warbler	Northern Flicker
Black-capped Chickadee	Northern Parula
Black-throated Green Warbler	Purple Finch
Canada Warbler	Swainson's Thrush
Chestnut-sided Warbler	Swamp Sparrow
Common Yellowthroat	Tree Swallow
Dark-eyed Junco	White-throated Sparrow
Golden-crowned Kinglet	Winter Wren

Several species at risk might use the small Speckled Alder floodplain and wetland forest habitat such as the Canada Warbler, Rusty Blackbird and Olive-sided Flycatcher, however the breeding habitat for these species on site was noted to be marginal at best (Chiasson, 2018).

Bicknell's Thrush have been mentioned to possibly be present on Grand Manan Island however there is no habitat on this site that is comparable to their typical breeding habitat (Chiasson, 2018). There is no dry open forest habitat for nesting Common Nighthawk.

Historical evidence of previous beaver activity is noted on this site (Popma, 2018).

### 3.2 CULTURAL FEATURES

Anchorage Provincial Park on Grand Manan Island is located on the southeast coast of Grand Manan approximately 5 km from the project site. This park is a well-known and frequently visited park for residents and tourists. Further development of the project site as a recreational area would benefit tourism in the Island community. The new facility would be an additional tourist attraction in the area.

### 3.3 EXISTING AND HISTORIC LAND USES

The current use of the land is for the Village of Grand Manan’s recreational development. The uses of the adjacent lands are residential. The land owners of the adjacent properties are identified on C-02 Existing Conditions Site Plan (with Aerial) in Appendix B.

The following aerial photographs taken between 1962 until 2011 show the development of the parcel of land where the Aquatic Centre and Wellness Facility will be constructed. The aerial photography was provided by the Government of New Brunswick (GNB) Energy and Resource Development department or obtained from Ducks Unlimited Canada. In Figure 3-11, dated in 1962, the land appears to have been cleared/accessed however there were no building developments. In 1976, as shown in Figure 3-12, a portion of the land was cleared and prepared for the building which is visible in Figure 3-13 in 1984. The building shown in 1984-1999 was a Boys and Girls Club which was demolished and replaced by the current Community Centre. In 1999, in addition to the Boys and Girls Club there was an outdoor rink and basketball court on the land, see Figure 3-14. In 2011, the Community Centre was built to replace the old facilities and remains there to date as can be seen Figure 3-15. Refer to Appendix F for full size images.



*Figure 3-11: Aerial Photograph 1962 (GNB Energy and Resource Development, 2018)*



*Figure 3-12: Aerial Photograph 1976 (GNB Energy and Resource Development, 2018)*



*Figure 3-13: Aerial Photograph 1984 (GNB Energy and Resource Development, 2018)*



*Figure 3-14: Aerial Photograph 1999 (GNB Energy and Resource Development, 2018)*



*Figure 3-15: Aerial Photograph 2011 (Ducks Unlimited Canada, 2018)*

## 4.0 IDENTIFICATION OF ENVIRONMENTAL IMPACTS

Table 4-1 presents the summary of environmental impacts of this project.

Table 4-1: Summary of Environmental Impacts

Environmental Attribute	Anticipated Impacts		
	Construction	Operation	Maintenance
<b>Air Quality</b>			
- Odors	None	Minor - ve	Minor – ve
- Greenhouse Gases	Minor – ve	Minor – ve	Minor – ve
<b>Biology &amp; Ecology</b>			
- Aquatic	Minor – ve	None	None
- Terrestrial	Minor – ve	Minor – ve	None
<b>Physical Climate/Atmosphere</b>	Minor – ve	None	None
<b>Geology</b>			
- Topography	Minor – ve	None	None
- Soil	Minor – ve	None	None
<b>Hydrology</b>			
- Surface Water	Minor – ve	Minor – ve	Minor – ve
- Ground Water	Minor – ve	Minor – ve	Minor – ve
- Wetland	Major – ve	Minor – ve	Minor - ve
<b>Valued Spaces/Locations</b>	None	None	None
<b>Community Structure</b>			
- Income levels	Major + ve	Minor + ve	None
- Employment Opportunities	Major + ve	Minor + ve	None
- Municipal Income	None	Major + ve	None
- Municipal Expenditures	Major – ve	Major – ve	Major – ve
- Traffic	Minor – ve	Minor – ve	None
<b>Lifestyle and Quality of Life</b>			
- Noise Levels	Minor – ve	None	None
- Health	Minor – ve	Major +ve	None

## **4.1 AIR QUALITY**

Air quality typically requires monitoring in indoor swimming pools. There will be some odours associated with the operation and maintenance of the Aquatic Centre and Wellness Facility primarily caused by chemicals to treat the pool water.

There will be minor releases of greenhouse gases and dust during the construction of this facility due to the operation of heavy equipment and machinery on site.

## **4.2 BIOLOGY AND ECOLOGY**

The Bird Survey Report (Aster Group, 2018) included in Appendix J indicated that while 22 species of birds were observed within the site area, no bird species at risk or of conservation interest were observed. Also, there is marginal breeding habitat for bird species of interest. The overall conclusion of the report was that the site contained a typical or common representation of New Brunswick bird species.

The Wetland Delineation Report (Popma, 2018) included in Appendix I indicated that beaver activity may occur at the wetlands.

The Rare Vascular Plant Survey Report (Popma, 2018) included in Appendix K concluded that no plant species of conservation concern were identified at the site. The plant survey indicated a reasonable amount of habitat variation throughout the site although the site was potentially impacted by previous development and the past spring's weather which was colder than typical.

## **4.3 GEOLOGY**

The topography of the site will be altered during construction to accommodate the facility which may affect the direction of surface water flow during construction. The area proposed for construction is a previously disturbed area as there is a graded gravel parking lot. Construction of this facility would require excavation over the approximate 25,000 square foot footprint, which will disturb some of the surficial geology.

## **4.4 HYDROLOGY**

Some of the infrastructure required for this facility, is planned to be constructed in the wetland and within its setbacks. The wetland on this property is not a Provincially Significant Wetland. The exact footprint of the parking lot and septic field which will be near/in the wetland has not been determined at this stage in the design. As per New Brunswick Wetlands Conservation Policy, effort will be made so that no significant loss in wetland function will occur.

Groundwater quality could be affected in the event of a spill from construction machinery.

#### **4.5 COMMUNITY STRUCTURE**

- The proposed project occurs primarily on previously disturbed land that is currently being used for recreational purposes.
- There will be increased traffic due to this facility during construction and operation.
- Access to properties will not be impacted by the construction of this facility.

#### **4.6 LIFESTYLE AND QUALITY OF LIFE**

This facility will positively contribute to the physical and mental health of the residents and visitors and will fulfill the need for a year-round aquatic program that does not currently exist on the Island of Grand Manan. This facility will also support effective management of chronic health problems and allow residents that require physiotherapy the option to receive these services without travelling off the Island. In addition to the health and wellness services offered, this facility will also be able to house Marine Emergency Duty (MED) certification training which is required for most fishery and aquaculture jobs as well as dive training for recreation or work.



## **5.0 SUMMARY OF PROPOSED MITIGATION**

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### **5.1 IMPACT AVOIDANCE AND REDUCTION**

#### **5.1.1 Air Quality**

The facility will be required to be well ventilated to protect the health of swimmers and staff from the chemicals used to treat the pool. The facility will also have sufficient ventilation to keep the humidity at a suitable level.

During construction, best construction management practices will be followed to reduce the amount of dust produced on the site, such as applying water.

#### **5.1.2 Biology and Ecology**

All suitable excavated topsoil will be reclaimed and use for landscaping purposes. As noted, there are no plant or bird species of specific interest within the site area.

#### **5.1.3 Geology**

Appropriate grading and drainage will prevent the altered topography from negatively impacting the facilities from surface water flow. As there is already a graded parking lot with no drainage issues, the construction of this facility is not anticipated to cause significant changes to the surface water flow.

During construction exposed soils could be subject to erosion, best construction management and storm water runoff practice, such as silt fences and erosion protection devices around excavations and stock piles, will be used to minimize negative impacts during construction.

#### **5.1.4 Hydrology**

The location of the Aquatic Centre and Wellness facility has been placed as far as practicable from the wetland to avoid major impacts to the wetland. Because of the size restriction of the land some of the additional systems will be within the wetland and its setbacks. These items are: parking lot, geothermal field, septic system and walking trails. The walking trails will have minimal impact on the wetland.

This facility will not emit unacceptable levels of effluent as the waste water treatment facilities for the domestic services and pool operation will be designed in accordance with Wastewater Systems Effluent Regulations SOR/2012-139. This will prevent negative impacts to the surface water and groundwater on the site.

All fixtures in the facility will be “environmentally approved” to reduce water and energy usage. The geothermal field will maximize energy efficiency.

The contractor will have leak and spill prevention equipment onsite prior to commencement of any construction activities to avoid contamination of groundwater in the event of a spill or leak from construction equipment. No refueling will be conducted within the 30 m buffer zone of the wetland.

#### **5.1.5 Community Structure**

- Events at the Aquatic Centre and Wellness Facility will be coordinated with events at the existing Community Centre to avoid traffic conflicts.
- All construction activities will be performed during normal daylight hours to avoid noise disturbances and light pollution.
- To minimize municipal expenditure during the operation life of the facility, staff will be shared between the existing Community Centre and the proposed Aquatic Centre and Wellness Facility.

### **5.2 IMPACT COMPENSATION**

Effort will be made to compensate for the loss of any wetland functions, as per recommendations from the Department of Environment and Local Government in the form of monetary compensation or enhancement the remaining natural features.

## **6.0 PUBLIC AND FIRST NATIONS INVOLVEMENT**

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### **6.1 PAST PUBLIC CONSULTATION**

Past public involvement occurred as a part of the needs assessment done by Silk Stevens Limited in December of 2016. Community engagement by means of telephone surveys, Facebook ads and newspaper articles and discussion in open session at the August Council Meeting helped raise awareness of the project and its potential impacts. All of feedback received was summarized and preliminary programming statements were developed. The survey results are summarized in Appendix H as part of the Feasibility Study – Village of Grand Manan Aquatic Centre and Wellness Facility, December 15, 2016. Overall, the surveys indicated the desire for a facility which would meet the needs of various users and age groups within the community for a variety of activities.

### **6.2 FUTURE PUBLIC CONSULTATION**

Silk Stevens Limited with the Village of Grand Manan will circulate written notification (letter, information flyer, or equivalent) about this proposal. The notification will include the following as per Appendix C of the Environmental Impact Assessment Guidelines:

- A brief description of the proposed undertaking;
- Information on how to view the Registration Document
- A description of proposed location (map is desirable);
- The status of the Provincial approvals process (i.e., “The undertaking is currently registered for review with the Department of Environment and Local Government under the Environmental Impact Assessment Regulation, Clean Environment Act”);
- A statement indicating that people can ask questions or raise concerns with the proponent regarding the environmental impacts;
- Proponent and/or consultant contact information (name, address, phone number, E-mail); and
- The date by which comments must be received (See Section 6.0 of the Registration Guide)

## **7.0 APPROVAL OF THE PROJECT**

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- Approval under the EIA Legislation from NBDELG
- Watercourse and Wetland Alteration Permit from NBDELG
- Development and Building Permit

## **8.0 FUNDING**

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Funding sources for the initial construction of the facility are expected to be provided by a partnership of the various levels of government. The contributions of the Municipality, Provincial and Federal governments are 6.5%, 33.5% and 60% respectively. Funding is committed at the municipal, provincial, and federal levels of government.

Ongoing maintenance and operation costs are expected to be funded by the Village of Grand Manan and through user fees.

## 9.0 REFERENCES

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