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ENVIRONMENTAL IMPACT ASSESSMENT FOR A YOUTH LEADERSHIP CAMP AT SYLVIA LAKE, MANITOBA

TIM HORTON CHILDREN'S FOUNDATION Project Description

November 5, 2010

4.3 PROJECT ACTIVITIES

Table 4-4 provides an overview of the range of activities associated with developing the Project.

Table 4-4: Major Project Activities Anticipated to Constructthe THCF Sylvia Lake Leadership Camp											
Major Project Activity	Description										
Clearing / grubbing / scarifying / stripping	Clearing and grubbing will be completed as necessary to prepare the Project Site and establish necessary fire buffer zones. See Section 4.4.3.										
Dewatering / draining / pumping	Dewatering / draining / pumping may be required during construction of the roadways.										
Excavating / trenching	Excavating and trenching is required during road construction, installation of services and building basement/footing construction. It is anticipated that suitable excavated materials will be re-used on site as fill materials, where required. See Section 4.4.4.										
Well drilling / hydro-fracturing	Well drilling is required to access the shallow groundwater aquifer to provide a water source for the water treatment plant. Hydro-fracturing, or the injection of high pressure (500-600 psi) water into drilled wells to aid in development.										
Blasting	Focused, small-scale rock blasting will be required to prepare the footprint of some buildings (particularly the main lodge) and portions of the road footprint by removal of selective outcropping elevations. See Section 4.4.4.										
Rock Crushing	Rock crushing may be required on-site to process excavated rock for use within the Site.										
Storing materials / equipment	Storage of materials and equipment is expected to be maintained on-site within a controlled area.										
Operating equipment / vehicles	Operation of heavy equipment and use of heavy										

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Table 4-4: Major Project Activities Anticipated to Construct the THCF Sylvia Lake Leadership Camp												
Major Project Activity	Description											
	trucks will be required for construction and material transportation.											
Storing / dispensing fuel	Specific areas or transportable storage systems will be utilized in the storing and dispensing of fuels.											
Transporting materials / equipment	Material transportation via heavy truck from suppliers and borrow sources ³ will be required.											
Transporting solid waste	After collection and temporary storage, solid waste will be transported to a licenced waste disposal ground.											
Disposing solid waste	Solid waste will be disposed of at a licenced waste disposal ground.											
Disposing liquid waste / sewage	A certified disposal contractor will handle and dispose of all liquid and sewage wastes associated with mobile sanitary facilities used during construction.											
Revegetation and Landscaping	Revegetation will be conducted to stabilize cleared areas.											
Road construction / gravelling / asphalting	Road gravelling will be conducted for the entry road (Province of Manitoba) and internal roads. All internal roads and parking surfaces will be asphalted.											

³ Borrow sources for gravel have not yet been selected. It is anticipated that material will be utilized from within the Site (i.e. excavated rock) and from existing, borrow source locations.

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4.4 **PROJECT CONSTRUCTION**

4.4.1 Workforce

Up to approximately 50 workers will be employed at any one time during the construction of the Project over the expected two-year construction period. The Project construction contractors will be selected through a bidding process, once permits and licensing is obtained to allow the Project to proceed to the Construction Phase. Local First Nations will be notified of construction tenders and will be invited to tender.

The types of positions required to construct the Project are expected to include:

Project Managers
Engineers
Architects
Heavy Equipment Operators
Framers
Mechanical Contractors
Plumbers
Plumbers
Environmental Inspectors
Electricians
Certified Blaster(s)
Electrical Contractors
Professional Challenge Course Technologist(s)

The establishment of a work camp is not anticipated at this time. Workforce accommodations will be at the Contractors' discretion.

4.4.2 Construction 'Footprint'

During construction, the maximum total area of land disturbed within the Project Site lease area will be approximately 11.5 ha (Figure 4-11). This construction "footprint" includes building and facility footprints; internal access roads and trails; areas of selective tree thinning; and an additional 15 m beyond cleared areas to account for any disturbance.

4.4.3 Clearing Requirements

During Project construction, clearing activities will be required in the road, building, septic bed and sports field construction footprints. A buffer of at least 10 m will be cleared from established buildings, where possible, in accordance with the Manitoba Conservation Firesmart Program. Figure 4-11 illustrates the proposed physical land area to be cleared during construction.



		AREA (SM)
	LIMIT OF LEASE AREA	171900 SM
	100yr INUNDATION LEVEL (276.0m ASL)	N/A
	LAKE	N/A
]	SELECTIVE THINNING OF TRESS	21479 SM
	EXST TREE REMOVAL / RELOCATION	6985 SM
]	ROAD / PATHWAYS	19086 SM
	TREES	83851 SM
]	GRASS	44302 SM
	BUILDING	5663 SM
•	DISTURBED AREA OF SITE 50' (15 M) BEYOND CLEARED AREAS	115266 SM
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	BOAT	
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_	SWIMMING	

SP1-OPTION 16 SCALE : 1:750 SCALE : 1:750

> Clearing Requirements Figure 4-11

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Selective tree thinning will be conducted in areas beyond the 10 m Firesmart buffer and where the buffer was not possible to establish. Tree-thinning activities will focus on flammable trees including pine, spruce and juniper shrubs and will retain less flammable trees such as aspen, poplar and birch, where possible.

Clearing activities will occur outside of the months of May, June and July to minimize the effects on wildlife during breeding and young-rearing season (e.g., breeding migratory birds; *Migratory Birds Convention Act*).

4.4.4 Excavation Requirements

During Project construction, excavation activities will be required for road construction, building footprint preparation, and trenching services (sanitary collection, potable water). Due to the extent of near surface bedrock and bedrock outcrops, rock excavation will be required, in some areas. The quantity and method(s) of bedrock removal is dependent on the outcome of geotechnical investigations. Based on direction from Manitoba Conservation, intrusive geotechnical investigations were not permitted as part of project planning.

The preferred method for rock excavation will be hoe ramming using mechanical excavators; however, depending on the Site bedrock integrity, it is anticipated that blasting will also be required. Figure 4-12 illustrates the boundaries of potential blasting areas on the Site.

The shockwaves and vibrations generated by blasting can damage internal fish organs, fish eggs or larvae and result in fish kills. The Department of Fisheries and Oceans (DFO) has published setback distances to blast sites from rearing/general fish habitat designated as "H1" and spawning habitat designated as "H2" as described in Section 6.3.1, based on maximum allowable weight of explosive charges (Figure 4-13). A blasting plan will be developed in accordance with DFO requirements prior to construction and submitted to DFO for review and approval.

4.4.5 Traffic

Equipment and materials will be transported to the Project Site by truck. The number of trucks required will vary, depending upon the type of equipment and materials to be delivered. Informational signs, such as truck turning signs, will be posted during periods of material hauling to reduce any potential hazards from increased traffic.

4.4.6 Fuel Handling and Equipment Servicing

There will be some fuel storage (up to 1,000 litres) kept at the Project Site during the Construction Phase. A mobile service truck will be used to refuel most of the larger construction equipment (front-end loaders, backhoes, etc.).



Area of Potential Blasting Requirements Figure 4-12



Blasting Setbacks Figure 4-13

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The Contractor will be required to locate all fuel storage and equipment servicing areas a minimum distance of 100 m away from any waterbody. Any fuel storage areas will be required to be operated according to the *Storage and Handling of Petroleum Products and Allied Products.* At all times, the Contractor will be required to have materials at the construction site to contain and recover fuel spills. Any fuel spills that occur will be reported to Manitoba Conservation in accordance with the *Environmental Accident Reporting Regulation.*

4.4.7 Temporary Storage Facilities

Temporary lay down area(s) will be established within the construction footprint (Section 4.4.2) during the Construction Phase. Laydown sites are used for storage of materials and equipment, vehicle parking and waste disposal receptacles.

4.4.8 Waste Management

During the construction phase, there will be waste materials generated (e.g., packing materials, cardboard, construction material overages). The construction sites will be kept clean on a daily basis, with all waste materials placed in designated containers. Any non-reusable demolition and construction debris will be disposed of at an approved waste-disposal ground operating under a permit pursuant to the *Waste Disposal Ground Regulation* or a licence pursuant to the *Environment Act*. This includes all packing materials, waste-construction materials (such as used concrete form boards) and other consumable products.

In addition, there will be mobile sanitary facilities located at the Project Site for the construction workers. The Contractor will be required to ensure that all sewage and septage from mobile sanitary facilities will be disposed of in accordance with the *Onsite Wastewater Management Systems Regulation*.

4.5 **PROJECT OPERATION**

The Camp will have two modes of operation: Summer Operation for the Youth Leadership Program and Fall/Winter/Spring Operation for the Community Partnership Program.

The peak season, Summer Operation, is a nine to ten week period from the end of June to the beginning of September (Labour Day weekend). Fall/Winter/Spring Operation applies to all remaining months of the year. Below is a description of employment, participation and activities during operations.

4.5.1 Workforce

During operations, the Camp will nominally require approximately 5 full-time, 20 part-time and 100 seasonal personnel or approximately 55 full-time equivalent (FTE) positions. Camp

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personnel are 18 years of age and older, with prior experience working with youth or leading wilderness trips. All employees take part in an extensive training session at the beginning of every summer season. Positions may be filled by local workers.

The types of skilled and semi-skilled labour positions required during project operation include lifeguards, a registered nurse and individuals with Standard and Wilderness First Aid as well as CPR (wilderness canoe trips), wilderness first responder, national lifeguard service, and various other skilled positions in the camp's program and service areas such as canoeing, kayaking, climbing, challenge course facilitation, winter outdoor pursuits, creative arts, and environmental education.

4.5.2 Participants

In total, 3,800 camp participants will (nominally) be served by the Camp annually. Summer Operation will provide seven 10-day sessions of the Foundation's Youth Leadership Program. The summer sessions will each accommodate a maximum of 256 participants plus staff, for a total of approximately 1,800 summer camp participants. During the Fall/Winter/Spring Operation, an additional 2,000 participants will take part in the Community Partnership Program, during a variety of camp sessions varying from 3 to 5 days in length. Maximum capacity during each session will be approximately 100 participants plus staff.

Youth Leadership Camp participants will be at least 13 years of age upon entering the Program, and Community Partnership Program Participants will be ages 8-18. Youth Leadership Camp Participants are economically disadvantaged past Residential Camp participants who have expressed interest in this experience. Community Partnership Program participants attend the camp as a member of a group of children from a school or youth-serving agency serving an economically disadvantaged population.

The use of drugs, alcohol, smoking, theft or misuse of property are examples of behaviours that may result in removal from the Program.

4.5.3 Fuel Storage

Up to approximately 5,000 litres of fuel will be stored on-site during operation to fuel emergency generators, motorized rescue boats and heaters. All fuel storage containers, including generator(s), will be above-ground, in excess of 100 m and include secondary containment measures (i.e. double-walled, berming,etc.). Fuel types to be stored on-site include gasoline and diesel. Any fuel storage areas will be designed and operated according to the *Storage and Handling of Petroleum Products and Allied Products Regulation*.

Information related to contingency event response planning, including fuel spill response, is outlined in Sections 4.8 and 4.8.4.

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4.5.4 Waste Management

The waste management plan for the Camp will include a recycling program. A large-scale, covered garbage bin will be located adjacent to the maintenance building for waste collection. Covered, animal-resistant receptacles will be utilized for any outdoor waste or recycling collection.

Solid waste will be transported by THCF or a third party Contractor to the nearest licenced landfill capable of accepting such wastes.

4.5.5 **Operations Activities**

Activities during operations include wilderness expeditions, leadership training, outdoor pursuits training such as canoe and kayak skills, adventure education and environmental learning activities. Camp programming includes exposure to guest lecturers and local leaders as well as curricula based on local natural and cultural history. In addition, tree planting and other enhancement activities may be undertaken by camp participants in the region.

Wilderness expeditions such as off-site canoeing and hiking trips exercise *Leave No Trace* principles, to minimize the impact to the environment while providing wilderness-based leadership training.

4.6 PROJECT DECOMMISSIONING

There are no plans to decommission the Project along a specified schedule. It is anticipated that with regular maintenance and repair/replacement of key components, as required, the camp facilities should have a lifespan of 50 years or more and the camp would remain active as long as it is economically viable.

The potential to decommission the Project at a future date can be addressed as it is possible to almost fully restore the environment to its original state.

4.7 PROJECT PHASES AND SCHEDULE

The Project will consist of five phases: planning, construction, summer operation, fall/winter/ spring operation and decommissioning. The Project is currently in the planning phase which includes architectural design, servicing (i.e. wastewater, potable water, other utilities) engineering, baseline environmental studies, geotechnical assessment (to be conducted when site access is granted for that purpose) and servicing-option evaluation.

The proposed schedule for the Planning and Construction phases is illustrated in Figure 4-14. THCF intends to initiate construction of the Project in early 2011, pending regulatory approvals,

Figure 4-14 Anticipated Timelines for Planning and Construction Phases¹

																Tim	eline															
	2010				2011											2012												2013				
Phase	Oct	Νον	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Νον	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Νον	Dec	Jan	Feb	Mar	Apr	May
Planning				1	1		1		1							1		1	L	L			1	1				I	I	I	L	
Environmental assessment review																																
Environmental protection plan development																																
Geotechnical assessment																																
Construction																																
Site clearing																																
Preliminary road work and parking area																																
Rock blasting and excavation ²																																
Major electrical (i.e. Hydro) servicing																																
Maintenance building																																
Site services: wastewater treatment system. potable water treatment system, dry hydrant fire protection system, backup generator system, other utilities servicing (e.g. electrical, communications)																																
Shoreline trenching for dry hydrant																																
Drilling for potable water shoreline well																																
Staff residence building																																
Other buildings: Main lodge, bunkhouses, wellness centre, gathering/arts/general activities, male and female shower houses, yurts and gazebos																																
Recreational areas: soccer field, basketball court, outdoor challenge area, campfire circle																																
Landscaping and re-vegetation																																
Dock installation (i.e. anchors)																																
Project commissioning																																

Notes:

Anticipated timeline

Potential timeline

Anticipated timelines assume environmental regulatory review and approval completed by the end of January 2011. Rock blasting will be conducted as deemed required based on the geotechnical assessment. 1.

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with operations beginning summer 2013. Manitoba Conservation has sole responsibility for determining the schedule for the entry road and hydroelectric servicing of the site.

4.8 ACCIDENTS AND CONTINGENCY EVENTS

Each Foundation Camp has developed Emergency Protocols to respond to a variety of potential situations. These include, but are not limited to:

- Fire;
- Missing person;
- Inclement weather;
- Motor vehicle accident;
- Evacuation of site;
- Lock down;
- Chemical spill; and
- Waterfront Emergency

Each camp is required to practice drills on a regular basis. During the year, camps are audited to ensure compliance with these standards.

During the annual staff training period, all employees are trained on their roles within each plan. This includes types of alarms, internal and external communication, first aid treatment and a detailed site review.

4.8.1 Medical Emergencies

Participant, personnel or visitor medical emergencies may occur as a result of pre-existing medical conditions, but may also include allergic reactions and injuries. All participants with serious allergies or medical concerns are required to submit a Medical Alert Form. While the Foundation cannot guarantee a nut-free environment, reasonable efforts are made to reduce or eliminate children's contact with these substances.

Under the leadership of skilled staff, the activities that participants engage in involve risk – risk in choices made and physical activity undertaken by the participants. During operations, individuals trained in first aid and wilderness first response will be on site year round. Trained lifeguards will supervise the camp's waterfront, skilled and certified wilderness trip leaders will

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accompany all wilderness canoe and hiking trips, and all activities will be facilitated by leaders with appropriate certifications as recommended by Manitoba Camping Association standards and other industry bodies. A Registered Nurse will supervise all Youth Leadership Program sessions, while leaders from participating Community Partnership Program groups will accompany all participants and provide medical, allergy and other relevant documentation.

Depending on the nature of the emergency, first aid may be administered on-site by trained staff and/or the individual will be transported to the nearest hospital (Pinawa Hospital, 33 km).

4.8.2 Fire

Due to the location of the Camp in a forested area, there is a potential for wildfires in addition to accidental fires. To reduce the likelihood and severity of a fire, Manitoba Conservation's Firesmart Program has been adopted in the Camp design, where possible, including the establishment of buffer zones of low-lying vegetation adjacent to buildings, thinning of flammable trees and retention of fire resistant trees. Further, entry and internal road allowances have been designed to accommodate emergency vehicles.

A dry fire hydrant (Section 4.2.4) will provide a source of firewater to responding fire departments. The responding entity for contingency events has not been determined. The use of contractual agreements or the development of THCF's on-site ability to provide internal response to fires is anticipated.

4.8.3 Power Outage

There will be emergency back-up generator(s) on-site to supply emergency power for select facilities and services in the event of a power outage. The generator(s) will be centrally located to the select facilities and services. It is anticipated there will be a minimum of one generator, and may be as many as three in total to provide emergency power to select facilities and services.

4.8.4 Spill Response

There is a potential for fuel spills to occur during all phases of the Project. The specific procedures to be followed in the event of a spill will be outlined in the Environmental Protection Plan to be developed for the Project. The plan will include the requirement for spill response equipment during Project construction and operation, as well as the reporting procedures in the event of a reportable spill.