

WATERFRONT MASTER PLAN UPDATE POOL 6 / TUG BOAT BASIN





Thunder Bay Waterfront at Pool 6 / Tug Boat Basin

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View east over Tug Boat Basin

1.0 INTRODUCTION AND BACKGROUND

The Waterfront Master Plan Update builds on the success of the Waterfront revitalization initiatives that have been implemented by the City of Thunder Bay and are now being enjoyed at Prince Arthur's Landing.

This Update focuses on the lands South of Pearl Street, providing a Master Plan and Implementation Strategy for Pool 6 and the Tug Boat Basin.

1.1 INTRODUCTION

Waterfront Master Planning

One of the City of Thunder Bay's most prominent assets is its spectacular waterfront along Lake Superior. The waterfront is bordered by urban areas, working ports and many parks and natural areas. It provides the basis for key drivers of the local economy including shipping and tourism. It is also an important resource in the high quality of life offered by Thunder Bay providing cultural, heritage and recreational destinations that are unique to this region. This shoreline has been inhabited for over 9,000 years and has served as a gateway between the Great Lakes and the North American continent.

Since 2006, Thunder Bay has been actively revitalizing its waterfront, strengthening public access on former industrial sites; providing a range of waterfront activities, open spaces and landscapes; and contributing to economic revitalization.

In 2006, the Marina Park Master Plan was prepared encompassing Prince Arthur's Landing and the area formerly occupied by the Saskatchewan Wheat Pool 6 grain elevators, as well as Tug Boat Basin.

The first phase of implementation began subsequent to the adoption of this 2006 Plan. It consisted of detailed planning for, and development of, the areas north of Pearl Street, known as Prince Arthur's Landing.

Construction of Prince Arthur's Landing began in 2009 and is now in its final phases. A range of public buildings, recreational uses, landscapes and upgrades to the 276-slip City-owned marina were completed in 2011-2012 and have brought a new vitality to the waterfront. On-going private-sector development of a mix of uses including a 150-room hotel and conference centre, two residential buildings, the renovation of the CN Station and a new Market Building are either underway or about to commence with a completion date expected in 2018. This newly revitalized public space has become a popular all-season destination.

In May 2011, BA Group undertook a Parking Study as part of the Prince Arthur's Landing project. It called for 319 spaces to be provided south of Pearl Street including 90 spaces for Hotel use. This recommendation was endorsed by Council in order to provide sufficient parking for the wide range of activities provided at the Prince Arthur's Landing project. The construction of this parking area is expected to be constructed in 2015-2016, and although documented as part of this Master Plan for the lands South of Pearl Street, the project should be considered as a final component of the implementation of the Prince Arthur's Landing project.

This Master Plan Update for the Pool6/Tug Boat Basin encompasses the 17 hectare (42 acre) site owned by the City of Thunder Bay. These lands are bounded on the north by Pearl Street, on the south by the former Pool 6 site and wharf, on the west by the railway yards and on the east by Tug Boat Basin.

Two parallel studies have been prepared in tandem with the updated Pool6/Tug Boat Basin Master Plan and are provided under separate cover. They include a Marina Study that identifies nine potential locations along the Thunder Bay Waterfront for new recreational boat slips, and the Festival Area Improvements Study. All three studies were undertaken concurrently and have informed the recommendations for the Pool 6/Tug Boat Basin area as well as providing potential strategic direction for other areas of Thunder Bay's 52 kilometre waterfront.

These documents have been prepared by Brook McIlroy Inc (Planning, Landscape Architectural and Architectural Consultants) in association with Hatch Mott MacDonald (Civil Engineering Consultants); ARCADIS (Environmental Consultants); Moffatt and Nichol (Marine and Coastal Engineers); and Scarlett Janusas (Archaeological Consultants)

Document Structure

- 1.0** Provides an introduction and background to the overall study.
- 2.0** Describes the Master Plan for the Pool 6 / Tug Boat Basin areas, including Guiding Principles, Key Directions and Guidelines.
- 3.0** Provides detail on Implementation, including a recommended Approvals and Coordination, Phasing Schedule and Cost Estimates.

1.2 PROJECT OVERVIEW

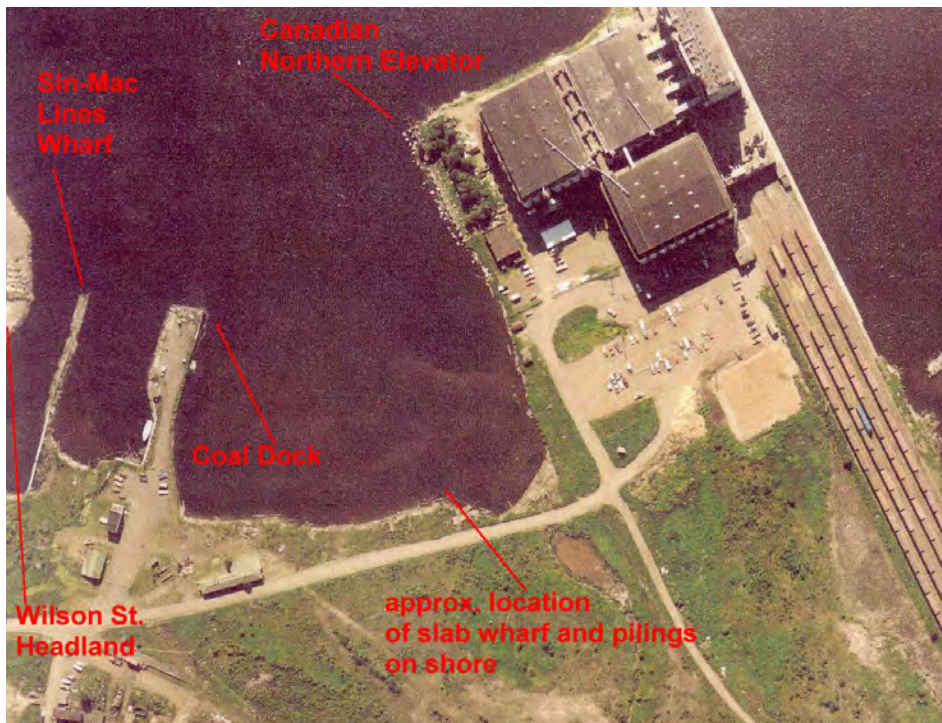


Image showing location of the CNR Elevator Complex, Sin-Mac Wharf and Coal Dock



Image showing location of the CNR Elevator Complex and Elevator B

The Pool 6 / Tugboat Basin Master Plan

The Pool 6/ Tug Boat Basin area was incrementally built during the 19th and 20th centuries as a series of railway docks that were eventually infilled with land fill to create the area we see today. The original shoreline is much further to the west parallel to Water Street and was a place of Aboriginal trade and settlement for over nine thousand years.

Pool 6 refers to the Canadian National Railway (CNR) Elevator Complex that was built south of what is now Pearl Street in the early 20th Century. The site was constructed with lake-fill between 1901 and 1902. Two grain elevators, Elevator A and B, were completed by 1909. At the time of their construction, these were the largest grain elevators in the world. Elevator A was demolished in 1920, while Elevator B stood until 2002. The Pool 6 / Tug Boat Basin Master Plan site includes the CNR Complex, as well as two other wharfs, the Sin-Mac Jetty and the Coal Dock, constructed between 1910 and 1933.

The demolition of Elevator B in 2002 signifies changing economic trends, and also provides a significant opportunity to transition what used to be an industrial site and part of the working harbour into an open space that can be used for public recreation.

The Master Plan Update builds upon the success of the first phase of waterfront redevelopment at Prince Arthur's Landing by providing a more detailed vision for the public use of the waterfront between the Pearl Street/Sleeping Giant Parkway roundabout

and the Pool 6 wharf. Although owned by the City, these lands presently restrict public access due to their former industrial use and recent activities including construction staging, fill and cruise ship docking. The intent of the Master Plan is to provide a vision, recommendations and an implementation plan to guide future development of this site.

Two buildings exist on site today, including the former Pool 6 Office Building, now occupied by City departments, and the Pumping Station, completed in 2010 as part of the Prince Arthur's Landing project.

This Master Plan recognizes several recent initiatives for the Pool 6 lands, including:

- In 2013-14, reconstruction of the Habitat Pond in the central area of the lands was completed as part of a habitat compensation agreement between the City and Department of Fisheries and Oceans.
- In 2013, City Council supported, in principal, a proposal made by the Thunder Bay Art Gallery to pursue the potential relocation of the Gallery to the waterfront on a City-owned site overlooking Tug Boat Basin.
- A commitment to build a new South of Pearl parking lot consisting of at least 319 spaces as a final component of the Prince Arthur's Landing public works implementation process.



Residual pilings from former rail line on CNR Elevator Dock

Concurrent Studies

In tandem with preparation of the Master Plan for Pool 6/ Tug Boat Basin, two studies have been completed to identify enhancements to the existing Festival Area in Prince Arthur's Landing and to review potential alternative marina locations along the City's 52 kilometre waterfront.

Festival Area Improvements Study

The Festival Area is a popular and heavily used event, gathering and performance space. It will continue to play this role into the future; however, the popularity of these events and the need for a new bandshell has brought many constraints to light. This study has prioritized several enhancements that will strengthen the functionality of the site for event organizers and attendees. Enhancements include:

- A new site for the bandshell and stage with electrical and functional upgrades
- Rebuilding the Camelot Street parking lot, building a new parking lot north of the Festival Area and providing a dedicated alignment for the Sleeping Giant Parkway to enhance pedestrian and vehicular safety
- Relocating and improving the existing playground and washroom facilities

Marina Study

Tugboat Basin was identified in the 2006 Master Plan and previous studies as an area for marina expansion. In preparing for this expansion, the City undertook a Marine Archaeological Assessment that identified archaeological resources of a significant scale in four locations, as well as areas of interest requiring further study in the Basin itself.

These findings, and associated physical, financial and approvals constraints, called into question the feasibility of marina expansion in Tug Boat Basin and led the City to suspend an Environmental Assessment that was underway for a new Marina in this location pending further study of alternatives. Instead, the City defined the scope of the current Waterfront Master Plan Update to include a Marina Study, which reviews the feasibility and costs of marina expansion within Tug Boat Basin and compares Tug Boat Basin with potential alternative locations along the waterfront.

The findings of the Marina Study demonstrate the high cost and risks associated with Marina expansion in Tug Boat Basin while identifying several alternative locations in which new Marina facilities could be provided. Based on these findings, the Master Plan Update for Pool 6/Tug Boat Basin does not incorporate facilities for a Marina, although facilities for non-motorized watercraft are recommended.

1.3 CONSULTATION SUMMARY

Development of the Waterfront Master Plan Update was guided by a range of Public and Stakeholder Consultation activities.

Stakeholder Engagement

Throughout the study, stakeholder groups and individuals were consulted through interviews and workshops. These discussions focused on the future vision, opportunities and current constraints, concepts for programming and implementation strategies.

- Stakeholder Interviews with:
 - City of Thunder Bay Staff
 - Baggage Building Arts Centre Staff
 - Thunder Bay Yacht Club
 - Temple Reef Sailing Club
 - Festival Area Event Organizers, including:
 - > Festival of India
 - > Blues Festival
 - > FASD Awareness Day
 - > Battle of the Atlantic
 - > Shelter House Relay
 - > Children's Fishing Derby
 - > Thunder Bay Mining Day
- Stakeholder Workshops including:
 - The Waterfront Development Committee
 - Aboriginal Communities Representatives
 - The Marina Advisory Committee
 - City Staff

Public Consultation

Stage One

On November 6 and 7, 2014, the consultant team facilitated three workshops with members of the public on the Waterfront Master Plan Update. The evening workshop on November 6 was open to the public and was attended by over 75 people. Two sessions, on November 6 and 7, were held with local students from Grade 12 (17 students) and Grade 7/8 (approximately 35 students).

The objective of these sessions was to establish a Vision and concepts for programming and themes to guide the Master Plan for Pool 6 and Tug Boat Basin.

Following the public workshop, worksheets were made available online. In total, 79 online responses were submitted, and feedback echoed the messages heard at the in-person events.

Stage Two

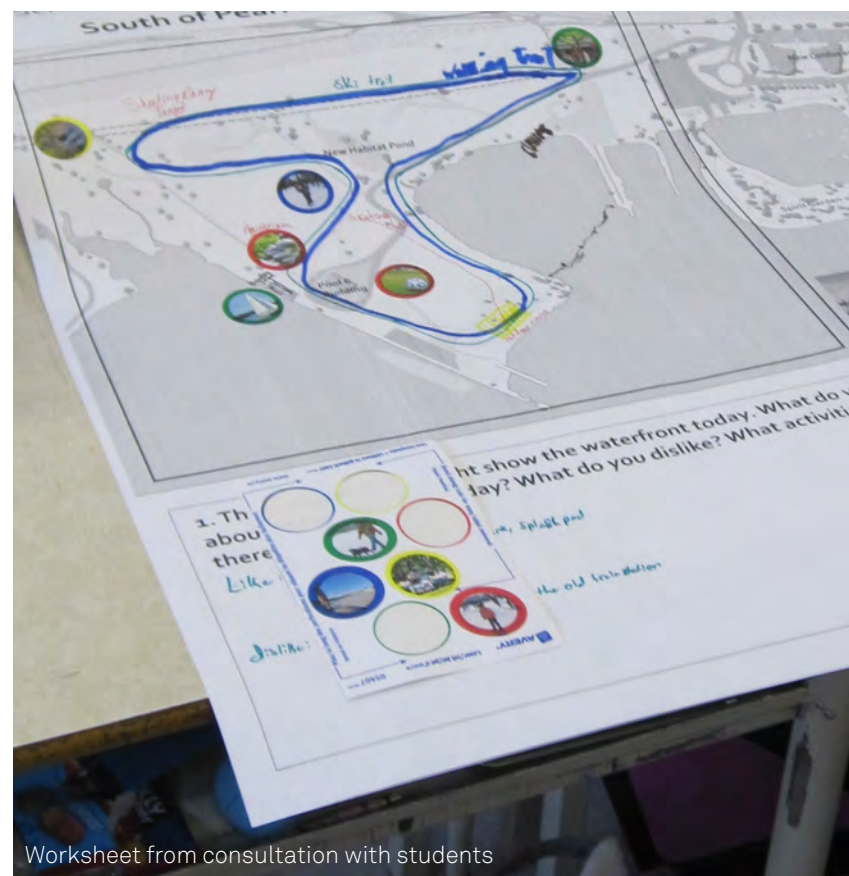
Following completion of the Draft Waterfront Master Plan Update document in July 2015, the report was made available online and the public was invited to submit comments. In total, 126 responses were received.

A public open house was also held on September 15, 2015 to present the final recommendations to the public and provide an opportunity for comment.

Key Directions Based on Feedback

Based on feedback heard, the following ideas and themes emerged as Key Directions.

- Strong preference heard from all groups for a naturalized space with outdoor recreation opportunities
- Create a more informal and naturalized atmosphere than the more urbanized PAL
- Identify a system of paths or trails that can be used for walking/cycling/jogging in summer and skiing/skating/snowshoeing in winter
- Integrate Aboriginal culture and history in the Pool 6 / Tug Boat Basin Master Plan - including opportunities such as a Roundhouse and/or Sweat Lodge
- Provide opportunities for a variety of physical activities for all ages, especially youth
- Encourage local business activity and small-scale vendors
- Continue to investigate options for marina expansion and additional water access / boating opportunities, including within Tug Boat Basin
- Establish a small craft/non-motorized boating area
- Place emphasis on naturalized landscapes and nature-based learning and activities
- Ensure accessibility throughout the park
- Prioritize fiscal responsibility and a long term implementation plan



Worksheet from consultation with students



Aerial image of Pool 6 / Tug Boat Basin (2010)

2.0 POOL 6/TUG BOAT BASIN MASTER PLAN

The Master Plan for the Pool 6/Tug Boat Basin area will open 17 hectares of land for public use that has previously been inaccessible. It will extend the vibrancy of Prince Arthur's Landing, but transform the waterfront into a more naturalized public resource as one moves south along the waterfront. The vision for South of Pearl is to provide a range of land and water-based amenities for residents and visitors within a beautiful park and natural setting.

The Master Plan for the Pool 6/Tug Boat Basin lands focuses on the dual themes of environmental and physical health, both of which strongly emerged in consultations with people of all ages. It establishes a naturalized landscape that provides a range of opportunities for passive and active recreation both on land and water as well as key public uses and cultural destinations.

VISION AND GUIDING PRINCIPLES

The Vision for Thunder Bay's Waterfront:

Year-Round, Connected and Ours to Celebrate.



Ten Guiding Principles were developed in consultation with the public to direct the development of the Pool 6/Tug Boat Basin Master Plan.

- 1 Prioritize the creation of a natural setting through environmental regeneration, reforestation, habitat protection, storm-water management and low-impact development
- 2 Provide land and water-based activities that support health and well-being utilizing an extensive trail network and a range of all-season indoor and outdoor activity areas
- 3 Provide continuous public access along the water's edge
- 4 Provide new publicly accessible cultural destinations on the waterfront
- 5 Provide a large green multi-purpose outdoor space with views to the water
- 6 Integrate Thunder Bay's heritage, including Aboriginal and multi-cultural identity and industrial past
- 7 Extend the network of public art and interpretive installations
- 8 Improve access for all transportation modes and transit using low-impact development design
- 9 Provide access for low-impact marine uses in Tug Boat Basin, recognizing archaeological and environmental constraints
- 10 Link waterfront initiatives to economic renewal balancing publicly operated uses with opportunities for commercial enterprise



Rendering of Pool 6 / Tug Boat Basin Master Plan



POOL 6/TUG BOAT BASIN MASTER PLAN

KEY RECOMMENDATIONS

The Pool 6 / Tug Boat Basin Master Plan focuses on the dual themes of environmental and physical health, within the context of a primarily naturalized landscape.

Key recommendations include:

- Provide a waterfront recreation and cultural landscape that focuses on public activities that support health and well-being
- Restore the environmental quality of the land, water, vegetation and habitats through environmental regeneration
- Position Tug Boat Basin as a centre for non-motorized watercraft and fishing
- Dedicate an appropriate name for the site, such as Wiingash (Sweet Grass) Park that reflects Thunder Bay's shoreline heritage as an Aboriginal settlement spanning 9,000 years
- Establish a well-connected trail network with options for walking, cycling, skiing, skating and resting
- Create several distinct program areas within a naturalized framework

- 1 SPIRIT GARDEN
- 2 SIN-MAC JETTY
- 3 COAL DOCK
- 4 TUGBOAT BASIN
- 5 PICNIC DOCK
- 6 FISHING, CANOE/KAYAK DOCK
- 7 PARKS MAINTENANCE AREA
- 8 CULTURAL CAMPUS INCLUDING THUNDER BAY ART GALLERY
- 9 RIDGE LINE TRAIL
- 10 APPLE ORCHARD
- 11 HABITAT POND
- 12 THREE HILLS FOREST TRAILS
- 13 NORDIC SPRINGS
- 14 DOCKSIDE ALLEE
- 15 POOL 6 PARK PAVILION
- 16 WILDFLOWER HILL
- 17 THE FIELD
- 18 DOCK 5 HERITAGE GARDEN
- 19 CRUISE SHIP WHARF
- 20 RAILWAY TRESTLE
- 21 WAABINONG (EAST) LOOKOUT
- 22 EXTENSION OF SLEEPING GIANT PARKWAY TO CENTRAL AVE OVERPASS



2.1 TRAILS

The extensive and diverse trail network will provide the opportunity to meander through the forest, cycle around the water's edge, walk with a stroller or use a mobility device to access nature and take in the view.

Key Elements:

- A combination of paved and boardwalk waterfront trail extension that is fully accessible - forming a circuit that seamlessly connects to Prince Arthur's Landing and extends south to Pool 6
- The continuous Waterfront Trail network can accommodate bicycles, roller blades, pedicabs, joggers, mobility devices and maintenance vehicles
- Bicycle parking will be provided throughout the park, and concentrated at key destinations
- A meandering boardwalk through the Dock 5 Heritage Garden, with a lookout over Lake Superior
- Gravel trail along Wildflower Hill and the Ridge Line Trail
- Activity nodes providing sitting areas, picnic shelters and outdoor fitness stations
- Three Hills provides a BMX Trail / Pump Track in the summer. The Circuit Channel will become a 500 metre long skating trail in the winter.



Winter cross-country skiing



Outdoor fitness station



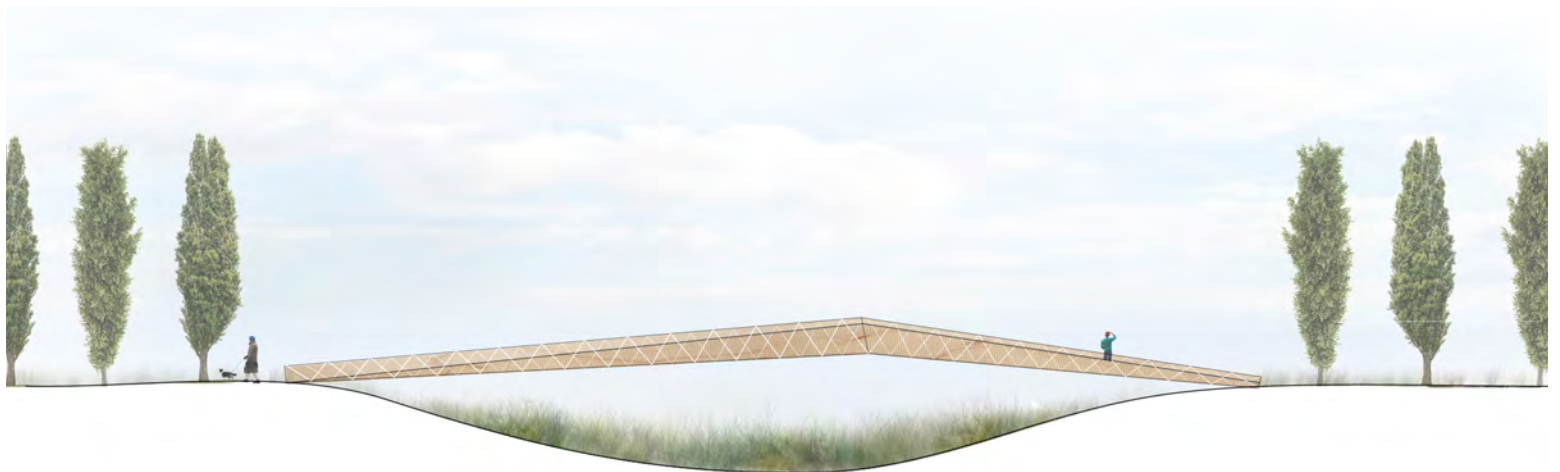
Boardwalk

- 1 RIDGE LINE TRAIL
(2M WIDTH)
- 2 WATERFRONT TRAIL
CONNECTION TO PRINCE
ARTHUR'S LANDING
(4M WIDTH)
- 3 WATERFRONT TRAIL
BOARDWALK CONNECTION
(4M WIDTH)
- 4 THREE HILLS BMX PUMP
TRACK / TRAIL (WIDTH
VARIES)
- 5 DOCKSIDE ALLEE
(3M WIDTH)
- 6 TRAILS THROUGH
WILDFLOWER HILL
(2M WIDTH)
- 7 BOARDWALK THROUGH
DOCK 5 HERITAGE GARDEN
(3M WIDTH)
- 8 WATERFRONT TRAIL
EXTENSION TO POOL 6
(4M WIDTH)



Key Guidelines:

- The Waterfront Trail Extension to be a 4-metre wide asphalt trail - can accommodate maintenance vehicles
- The Waterfront Trail will be maintained in winter and include pedestrian lighting, bicycle parking and a consistent palette of furnishings
- 4-metre wide Waterfront Boardwalk Trail through wetland areas.
- The 4-metre trail network to be accessible and barrier-free, and provide dedicated space for bicycles and pedestrians
- Ridge Line Trail and Wildflower Hill Trail to be 2 metres wide and topcoated with crusher fines - not maintained in winter
- Dock 5 Heritage Garden Boardwalk to be 3 metres wide - not maintained in winter
- Wayfinding and signage along trails should be simple in design and consistent with other waterfront signage
- Outdoor furnishings along trails must be durable and should be chosen for year-round usability
- The main trail should be well-lit to maintain security and maximize activity. Some trails, like the Dock 5 Heritage Garden, may not be lit, in order to discourage use in the night or evening.
- Asphalt trails and boardwalk decking should be designed to withstand loading from the heaviest anticipated vehicle; and provide barrier free access.
- All boardwalk decking should consist of durable, low maintenance, long lived material
- For boardwalk decking, preference is given to Forestry Stewardship Council certified wood. Tropical woods should be avoided. Consider fibreglass materials instead of wood.
- Bicycle racks should be provided in frequent locations throughout Pool 6. They should be unique to Pool 6 with a design or materials in keeping with the industrial heritage of the site. The number and configuration of bike racks should be decided based on location, but should be concentrated at parking lots, play areas, park destinations and pavilions, and key entrances.
- Three washroom pavilions are identified along the trail network. All washroom/change facilities should utilize low-flow plumbing equipment and motion sensor lighting and water taps.



Ridge Line Trail with Bridge over Inflow to Habitat Pond

2.2 NATURALIZATION AREAS

The desire for a naturalized open space with recreational activities, combining the themes of natural and physical health, came through strongly in public consultations. This former industrial site is coming back to life - with new plants and wildlife taking over man-made land - and will be supported in this process through the implementation of the Master Plan.

The central theme for the Pool 6 area is 'back to health' based on the dual objectives to:

- a) provide a waterfront recreation and cultural landscape that focuses on public activities that support health and well-being, and;
- b) restore the environmental quality of the land, water, vegetation and habitats through environmental regeneration.

Key Elements:

Environmental Remediation

Known contaminants originate from the site's original railway and industrial use and include soils with hydrocarbons and metals. Specific-site conditions will

be tested and remediation strategies developed as improvements are made incrementally throughout the Master Plan area. Through techniques including soil aeration, capping and phytoremediation, the condition of the lands can be made safe and accessible for public use without necessitating soil removal.

Storm Water Management

Key measures are also recommended to improve water quality on-site and flows to the Harbour through storm water management facilities in four locations. An Oil/Grit Separator Chamber will be required to capture and clean water flowing from the railway yards prior to it entering the Habitat Pond.

Reforestation

Reforestation of the site with native species is of the highest priority and should commence immediately on those lands not subject to regrading and as soon as possible on lands where regrading is required.

Materials Recycling

The site contains many areas of fill sourced from construction sites as well as rubble from demolition of the Pool 6 elevators. Rubble and construction debris



- 1 REFORESTATION
- 2 RAILWAY RUNOFF ENTERS OIL/GRIT SEPARATOR
- 3 HABITAT POND
- 4 SHORELINE NATURALIZATION WITH WATER ACCESS
- 5 NATURALIZED STORMWATER MANAGEMENT POND & SIN-MAC JETTY
- 6 WILDFLOWER HILL
- 7 DOCK 5 HERITAGE GARDEN
- 8 COAL DOCK
- 9 FISHING AND KAYAK/CANOE DOCK

should be processed on site and recycled as base material for fill, trails, roads and parking lots. Much of the site will require regrading as the pattern of fill has created an inaccessible and irregular topography. However, some mounds, berms and hills have become naturalized over time and are interesting features of the landscape that should be maintained and enhanced.

Habitat Protection and Improvements

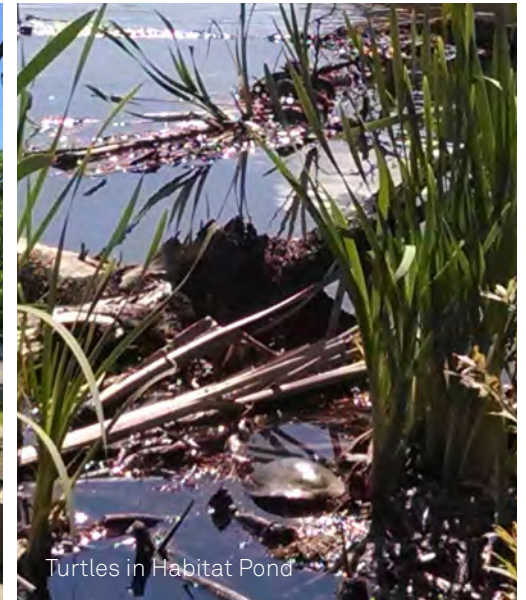
The protection and enhancement of existing habitats, such as the Habitat Pond and Eagle's nest at the Dock 5 Heritage Garden, are central to the plan. They allow for public access that is limited to defined trails only. The introduction of sustainable Stormwater Management practices and technologies will further enhance natural habitats. These initiatives, in tandem with environmental remediation and reforestation, can position these lands to be used as an educational resource.

Wildflower Hill and Pavilion

Wildflower Hill will provide a lookout over Tug Boat Basin along a gravel trail through a meadow-like field. The Pavilion is an open air structure that provides a sheltered viewing and picnic area on the Wildflower Hill.



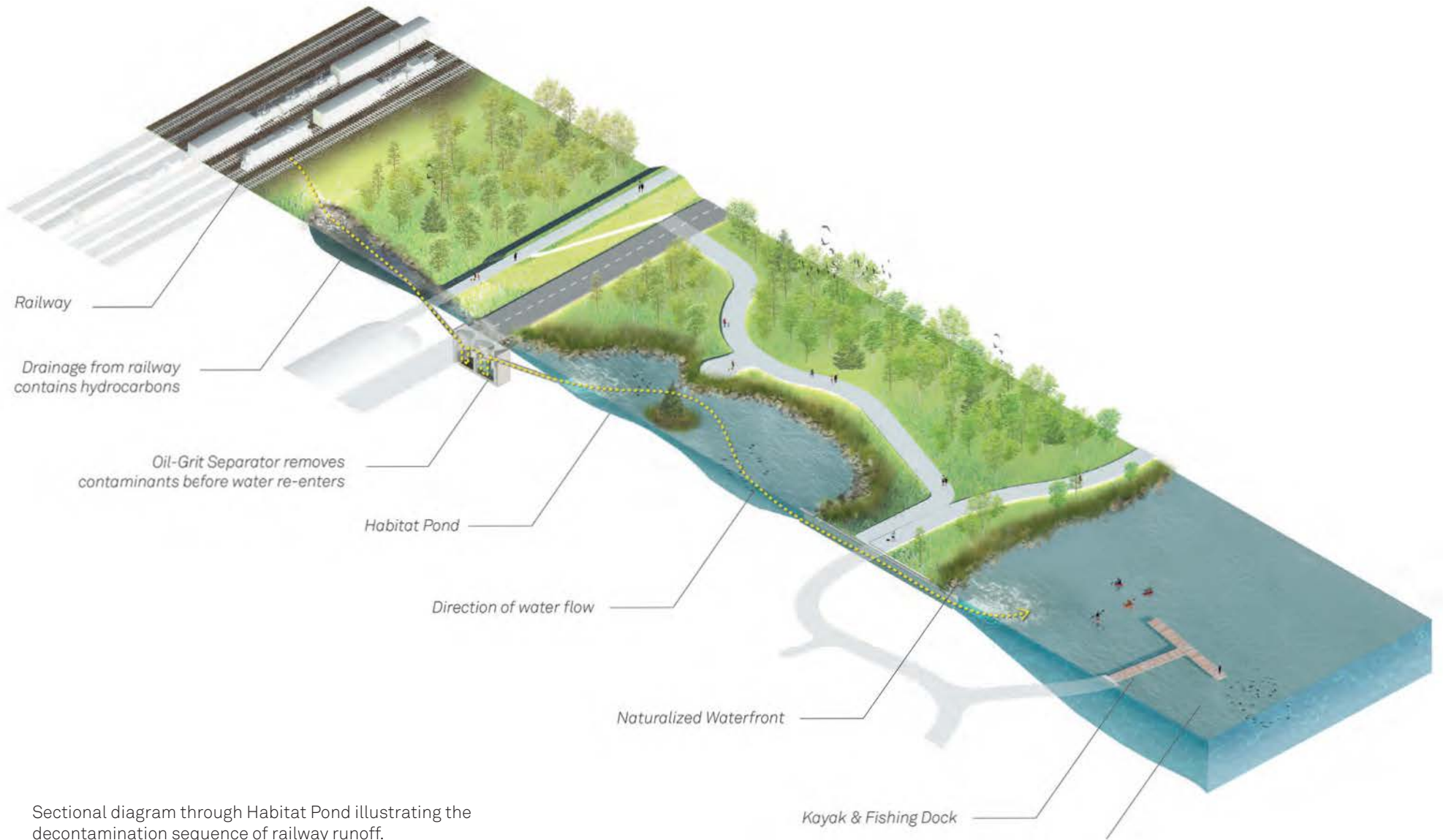
Green roof on park pavilion



Turtles in Habitat Pond



Habitat Pond



Sectional diagram through Habitat Pond illustrating the decontamination sequence of railway runoff.

Key Guidelines:

- Planting of white birch and silver maple cultivars to naturally remediate soil
- In locations where soil remediation is not required, or once remediation is completed, use native plant species that are drought resistant and require low maintenance
- Re-use existing fill where possible during the re-grading and construction process, including Pool 6 rubble, as base material for roads, trails and parking lots
- Place priority on enhancing water quality entering Lake Superior - focusing on treatment through the Habitat Pond and the Stormwater Management Pond
- Wildflower Hill to be planted with a mixture of local flowers and grasses that require little maintenance
- Wildflower Hill Pavilion should be open air with a combination of seating and standing areas for viewing activities in the Tug Boat Basin. The structure should be wood and its form should mimic the rolling hills of the area.
- All pavilions and new buildings should incorporate green roofs

- 1 SHORELINE NATURALIZATION
- 2 WILDFLOWER HILL
- 3 WILDFLOWER HILL PAVILION
- 4 DOCK 5 HERITAGE GARDEN





View of Wildflower Hill, Pavilion and Dock 5 Heritage Garden as seen from the north side of Tug Boat Basin

2.3 HERITAGE

The industrial past of this site, along with the Aboriginal and multi-cultural heritage of Thunder Bay, is reflected in the Master Plan.

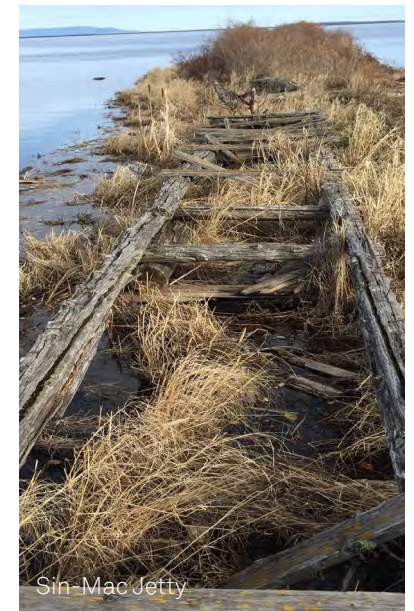
Some cultural heritage elements have been identified as archaeological features and will be protected in place. Other known historical aspects of the site will be celebrated with interpretive features integrated into site design, signage and facilities.



Pool 6 rubble with graffiti



Trestle



Sin-Mac Jetty



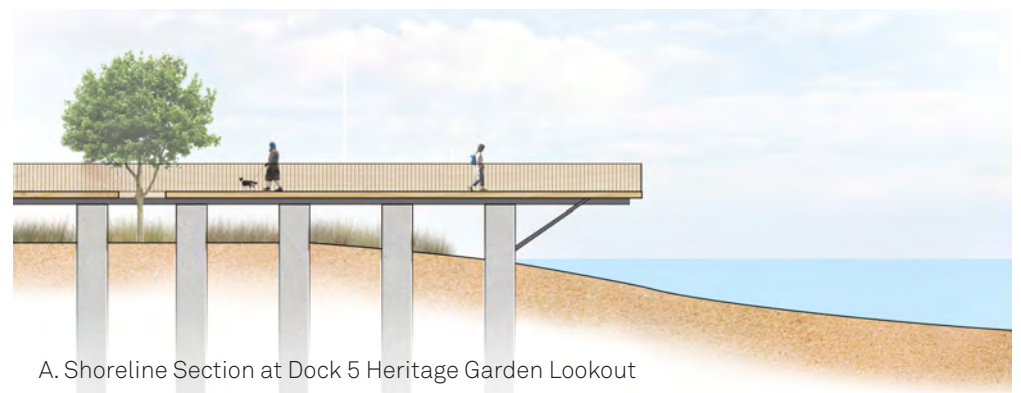
- 1 SIN-MAC JETTY*
 - 2 COAL DOCK*
 - 3 INTERPRETIVE DISPLAY IN POOL 6 PARK PAVILION
 - 4 FORMER POOL 6 ELEVATOR SITE
 - 5 DOCK 5 HERITAGE GARDEN*
 - 6 RAILWAY TRESTLE
 - 7 WAABINONG (EAST) LOOKOUT
 - 8 APPROXIMATE LOCATION OF SLAB DOCK AND PILINGS*
- * Indicates heritage features identified through a Stage 1 and 2 Marine Archaeological Resource Assessment

Key Elements:

- Integrate Aboriginal place-names throughout the Park, eg. Wiingash (Sweetgrass) Park, Waabinong (East) Lookout etc.
- Protect remnants of Dock 5, the Railway Trestle, Sin-Mac Jetty and Coal Dock
- Provide interpretive elements, signage, views and trail access to key sites
- Establish a Pool 6 interpretive display in the Pool 6 Park Pavilion
- Integrate Aboriginal cultural facilities - for example, a Roundhouse and Sweat Lodge
- Preserve and re-use some of the artwork painted on Pool 6 rubble for park features

Key Guidelines:

- Public access should be carefully managed or avoided in areas with sensitive archaeological remnants or resources
- As part of the approvals for this Master Plan, the City will need to develop a heritage resource management plan for the protection of the identified archaeological resources
- Interpretive elements should include reference to industrial history of the site as well as the local cultural heritage, and should direct and draw visitors through the site





Dock 5 Heritage Garden: The boardwalk leads visitors through the remnants of the dock and rail structures to the water's edge. The Garden can be curated as a place for sculpture and other artist installations.

2.4 CULTURAL CAMPUS

The Cultural Campus can become a major attraction in Thunder Bay, providing a link between the urban character of Prince Arthur's Landing and the more natural setting of the Pool 6 lands. The Art Gallery is working with the City on plans to relocate to this site, providing the first phase in an area that can expand over time to provide facilities that merge cultural and recreational activities in a campus setting. Future phases may include the development of an Aboriginal cultural centre envisioned as a Roundhouse and Sweat Lodge, expansion of the Art Gallery over time, or other public uses in the areas of education and the environment, combined with compatible recreational uses.

The presence of the Thunder Bay Art Gallery as an anchor for the Cultural Campus is an important draw for the larger site. In this location, the Gallery will be co-located in a setting with a range of visitor activities, both arts-based and recreational, at Prince Arthur's Landing and the new public park uses at Pool 6. The waterfront offers an opportunity for the Gallery to significantly expand its programs, visitations and membership. Throughout the park, the Gallery will have ample opportunity for additional programming that can extend its presence beyond the gallery itself - including the Spirit Garden, Cultural Campus, Coal Dock, Dock 5 and

other outdoor areas suitable for public art and cultural programming.

At its current site at the Confederation College campus, the Gallery demonstrates its interest in outdoor installations. The potential of the waterfront site exponentially expands this opportunity. This location offers a 'field of operations' that can interpret and animate its rich cultural landscape. A visitor to the Gallery will have the opportunity to experience both the recreational and cultural offerings that the adjacent landscape and extensive public park lands provide.

The opportunity offered by the proposed waterfront site draws comparisons with other galleries around the world that are located within larger park sites or natural areas. These include the Louisiana Gallery in Denmark, Koller-Muller in Holland and McMichael in Kleinberg Ontario (see diagrams on page 34-35). Each of these Galleries enjoys much higher visitations, and repeat visits as people come to the Gallery for a more diverse experience. Typically they are characterized by:

- An expanded curatorial field of indoor and outdoor installations and programming
- Indoor and outdoor events: performance art, film, music, dance (on land and water)
- Beautiful views to a natural setting



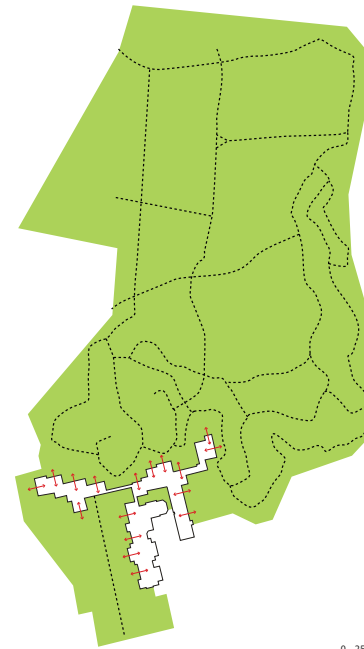
- 1 RELOCATED ART GALLERY
- 2 ROUNDHOUSE
- 3 THE APPLE ORCHARD
- 4 PUBLICLY ACCESSIBLE WATER'S EDGE

Art Gallery Site Precedents



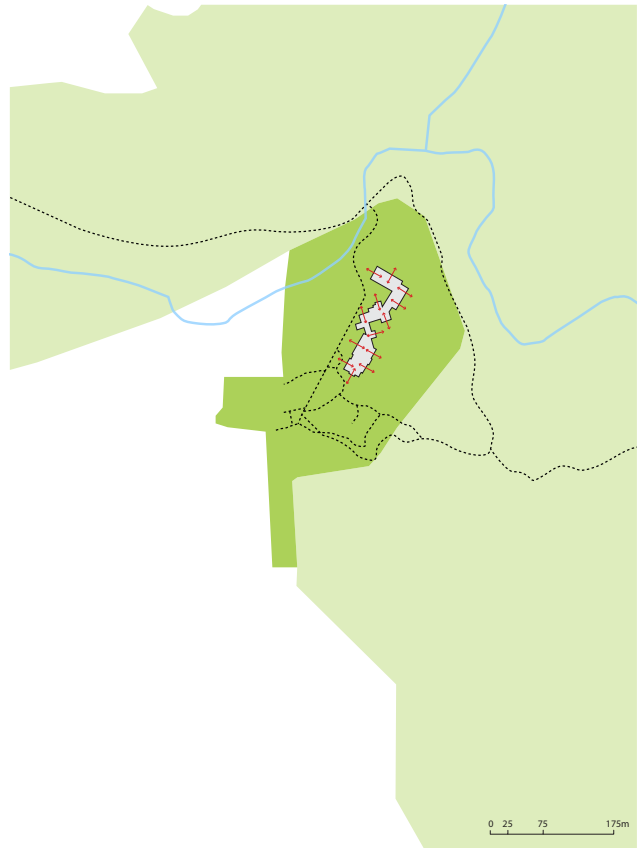
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Louisiana, Denmark

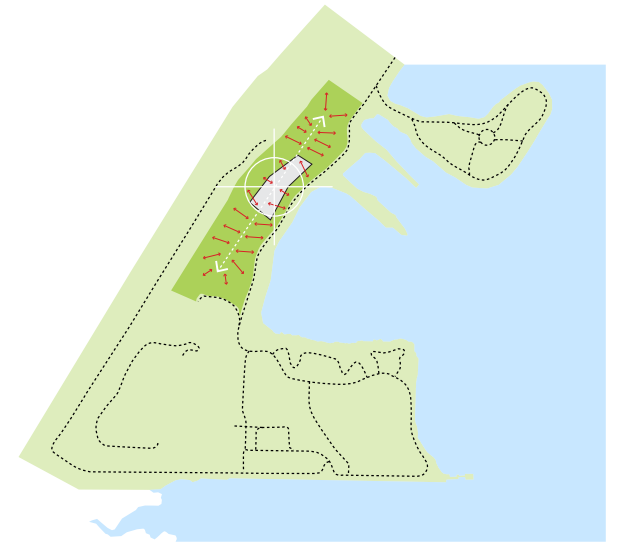


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Koller-Muller, Netherlands



McMichael Art Gallery, Ontario



Thunder Bay Art Gallery, New Location

- Café/Restaurant with indoor and outdoor seating
- Picnicking, cycling, kayaking, canoeing
- Children's play spaces
- Space to grow – organically over time

The waterfront site offers the Gallery an opportunity to dispel the 'passive role' and 'museum fatigue' often associated with the traditional visitor experience. Combined with interior program activities (exhibitions, education, café/food services, gift shop, library, and member areas), the expanded opportunities the site provides positions the Gallery to become a community hub that people will come to repeatedly, year-round, and even on a daily basis.

Key Elements:

- An apple orchard and community garden
- A wide naturalized public space along the water's edge
- An integrated campus of cultural facilities including the relocated Thunder Bay Art Gallery, a Roundhouse and/or an arts workshop
- A meandering set of buildings, contextually appropriate in scale, that both frame and program



Community Garden



Lac des Mille Lacs Roundhouse



Existing outdoor installations at the Thunder Bay Art Gallery

adjacent outdoor areas

- Additional parking areas within the Cultural Campus may be required but will be determined in association with the design of future facilities

Key Guidelines:

- Orchard to include northern hardy varieties of apple and other fruit/nut trees
- The Orchard and Community Gardens may be maintained by a partnership including the City, community groups, and possibly a cultural institution within the Cultural Campus
- Buildings should be appropriate in scale and designed for this natural setting, provide high levels of transparency and provide both indoor and outdoor program areas
- Ensure that the Cultural Campus is highly accessible to visitors and the public with multiple trail access from the parking lots to the water's edge
- If additional parking areas are required within the Cultural Campus, they should be developed using low-impact design practices and integrate tree planting and landscape features within the parking area



Bicycles available for free to Gallery visitors to Koller-Muller (above)



Outdoor learning at the McMichael Art Gallery



Medicine Wheel (Haskell Indian Nations University)



Louisiana Art Gallery



Tom Thompson's cabin at McMichael Art Gallery

2.5 TUG BOAT BASIN

Based on the findings of the Marina Study and the majority of the feedback received during public consultation, it is recommended that the archaeological resources be left in-situ and that Tug Boat Basin be used as a fair-weather boating area for small-scale watercraft, including kayaking and canoeing. These uses do not require the installation of permanent slips nor the construction of a breakwall.

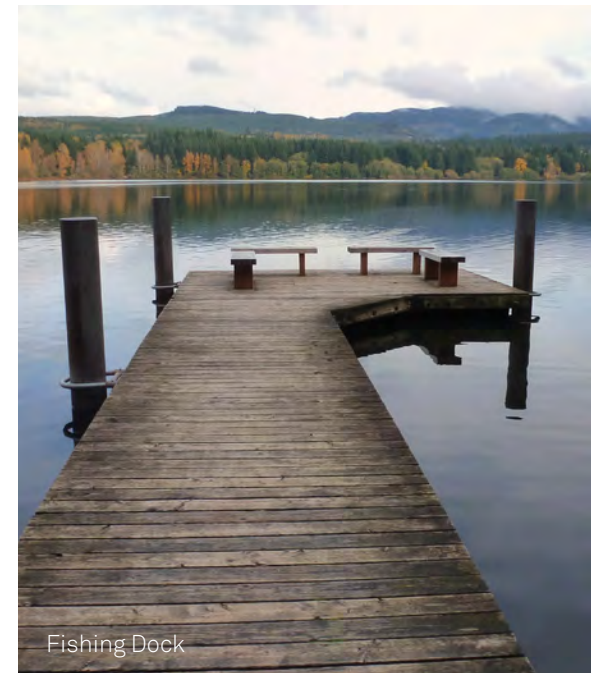
A fishing pier and a floating dock for non-motorized small watercraft are recommended on the shoreline of Tug Boat Basin.



Shoreline Section at Tug Boat Basin



View across Tug Boat Basin



Fishing Dock



- 1 PICNIC DOCK
- 2 FISHING, CANOE/KAYAK DOCK
- 3 LOOKOUT AT DOCK 5 HERITAGE GARDEN

Key Guidelines:

- Shoreline should be naturalized in character around Tug Boat Basin. Shoreline areas should be protected to reinforce native ecosystems, reduce maintenance requirements for man-made shoreline structures and educate the public about natural processes occurring at the water's edge.
- Public access to Sin-Mac Jetty should be limited to protect archaeological heritage resources, but interpretive signage and information about their history should be provided. A protection plan for these resources should be developed as part of implementation.
- Paved trail should provide a connection from the Pool 6 Parking Lot to the Fishing and Canoe/Kayak Dock
- A small sandy beach should provide water access between the Sin-Mac Jetty and the Coal Dock in a wetland setting





- 1 SIN-MAC JETTY
- 2 COAL DOCK
- 3 SANDY BEACH
- 4 NATURALIZED SHORELINE
- 5 PICNIC DOCK
- 6 FISHING, CANOE/KAYAK DOCK
- 7 WILDFLOWER HILL PAVILION
- 8 LOOKOUT AT DOCK 5 HERITAGE GARDEN

View of Tug Boat Basin

2.6 THREE HILLS FOREST

The Three Hills area is inspired by the unique topography of Thunder Bay. It occupies the south-west corner of the Pool 6 lands and is approximately 1.8 hectares in size. The site consists of a series of hills created through regrading and a perimeter linear wetland channel fed by storm water drainage from the Sleeping Giant Parkway Extension and surrounding area. The reforested hills will provide the setting for a BMX trail system and the wetland channel will be used as a skating circuit in the winter.

Key Elements:

Environmental Regeneration

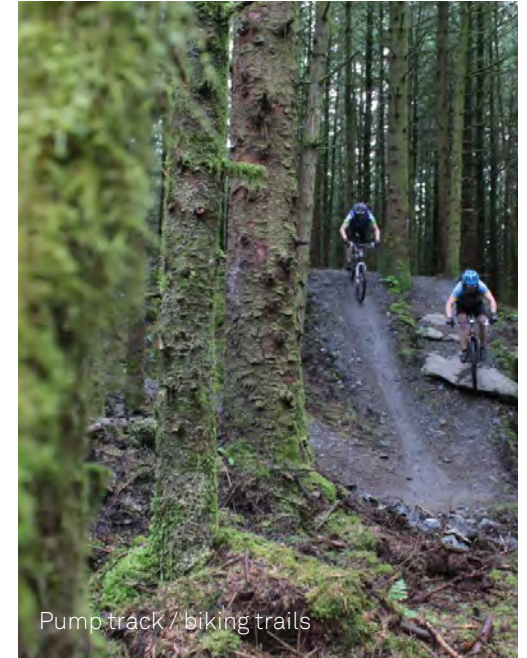
The site will be regraded to create a series of three hills. The regrading process should be undertaken to facilitate soil aeration. This configuration will form a linear circuit of water channels at the base of the hills designed to capture storm water from the surrounding area, including Sleeping Giant Parkway. In the winter, the Circuit Channel will be flooded as a skating track.

Circuit Channel

The Circuit Channel is 500 metres in length, with channel walls/edges that are designed to contain storm water to facilitate infiltration while preventing erosion.



Reforestation with silver maple



Pump track / biking trails



Skating trail at Arrowhead Park, Huntsville



- 1 CIRCUIT CHANNEL
- 2 THREE HILLS FOREST BMX TRAILS
- 3 THREE HILLS PAVILION

Wetland grasses, including sweet grass, sedges and emergent aquatics will naturally generate within the channel. In the winter, the channel can be flooded to provide a linear skating circuit.

Three Hills Trails

Once reforestation has been established, a looping BMX trail system is proposed within the Three Hills area linked by bridges that span over the Circuit Channel. Bridges will provide sufficient clearance for people to walk or skate beneath them on the Circuit Channel. Once tree maturity has been reached, these trails can be used as a three-quarter kilometre mountain biking course during the summer.

Key Guidelines:

- Hills should be constructed using fill from other areas of the site removed during the re-grading process
- Re-forest this area using white birch and silver maple cultivars
- Single track BMX biking trails to be constructed of a stable hard-packed material, approximately 60 centimetres in width



Circuit Channel in summer and winter



Circuit Channel in summer and winter

- Circuit Channel should be an average of 7 metres in width with a depth of 30 to 50 centimetres (to be determined based on stormwater requirements)
- Channel should be planted with grasses (including sweet grass), sedges and emergent aquatics, and should be mown each fall to prepare for winter
- Stormwater run-off from Sleeping Giant Parkway should be directed into the channel
- Where bridges cross the channel, retaining walls may be built with armour stone or gabions using a mix of rubble fill from the Pool 6 site combined with local rock
- Bridges spanning the Circuit Channel should incorporate wood and be of a height to provide clearance beneath them for walkers/skaters
- Provide a small Pavilion at the entrance to the facility with a change area, benches, washrooms and water supply





Three Hills Forest and Trails

2.7 NORDIC SPRINGS

A centre for health and wellness that reflects the spa tradition of Thunder Bay's Finnish and Nordic settlers is recommended in this area to provide a potential public destination that celebrates winter. This facility is assumed to be built and operated by the private sector on a land-lease basis.

Key Elements:

- Forest retreat comprised of a Nordic-themed public spa combining a series of outdoor hot and cold pools with indoor facilities including sauna, steam room and sun room. Its location on the edge of the Three Hills Forest is compatible with the trail system, which can be used for snowshoeing or cross-country skiing, and winter skating on the Circuit Channel.
- This facility would provide a café and eating area and may be appropriate for small-scale, modest accommodations similar to a Nordic travelers' hostel.

Key Guidelines:

- Facility should be developed and run by a commercial operator
- Building design and materials should be sustainable and resource efficient as much as possible
- Buildings should be small in scale, integrated with the setting and provide privacy for users
- Accessory services such as a cafe or hostel should be small in scale





1 NORDIC SPRINGS



Hot and Cold Pools



Saunas and Steam baths



A series of pavilion buildings



Buildings that create year round indoor and outdoor connections



- 1 NORDIC SPRINGS MAIN BUILDING
- 2 STORM WATER MANAGEMENT WATER FEATURE
- 3 HOT AND COLD POOLS
- 4 SAUNA AND STEAM BATH
- 5 CIRCUIT CHANNEL

2.8 THE FIELD

The Field is located on the site of the former Pool 6 grain elevators. It is a multi-purpose, flexible open space that can accommodate sports activities, informal gatherings, picnics and games. It will be encircled by the trail, protected from winds and provide access to a number of other features including the Wildflower Hill, Pool 6 Park Pavilion, the Cruise Ship Wharf, the Trestle and the Dock 5 Heritage Garden.

Key Elements:

- Flexible, multi-use lawn area
- Accommodates the size of a soccer field
- Can be used for informal sports, activities, gatherings, etc
- Includes a sculpted landscape around the edges that shelters from wind, provides integrated seating areas, visual interest, etc
- A publicly accessible beach at the eastern edge of Pool 6





- 1 POOL 6 PARK PAVILION WITH SUPPORT AMENITIES
- 2 TRAIL NETWORK
- 3 THE FIELD
- 4 SCULPTED LANDSCAPE
- 5 WASHROOM PAVILION
- 6 THE BEACH AND RAILWAY TRESTLE

Key Guidelines:

- Provide an open, slightly southward sloping lawn area of approximately 0.5 hectares in size
- Provide a sculpted landscape edge for informal seating, etc
- Ensure clear views from the Field to the Sleeping Giant
- Provide easy access from the field to the east shore of the Pool 6 Lands for access to the new beach.
- Trees should be planted around the Field but trees are not to interrupt the open grass areas which should be protected for casual sports and leisure activities.



The Field



2.9 POOL 6 PARK PAVILION

The Pool 6 Park Pavilion can be re-purposed to become the main public service and amenity facility in this area. It should continue to house City offices related to the operations of the waterfront but can also be retrofitted and expanded to provide a wide range of support services to the public.

Key Elements:

- Lower level facing the north side can be re-purposed to accommodate public washrooms and rental facilities for bicycles, ski equipment and other public recreational support uses (run by commercial operator)
- An addition on the east side of the building can accommodate a food concession, cruise ship visitor amenities, cafe or vending machines
- An interpretive display area featuring the industrial heritage of Pool 6 should be incorporated into this new addition
- Other support spaces associated with cruise ship operations should be integrated into the renovation of the building
- New exterior finishes are required to transform the character of the building into an attractive destination compatible with its natural waterfront setting



Pool 6 Office Building



1 POOL 6 PARK PAVILION

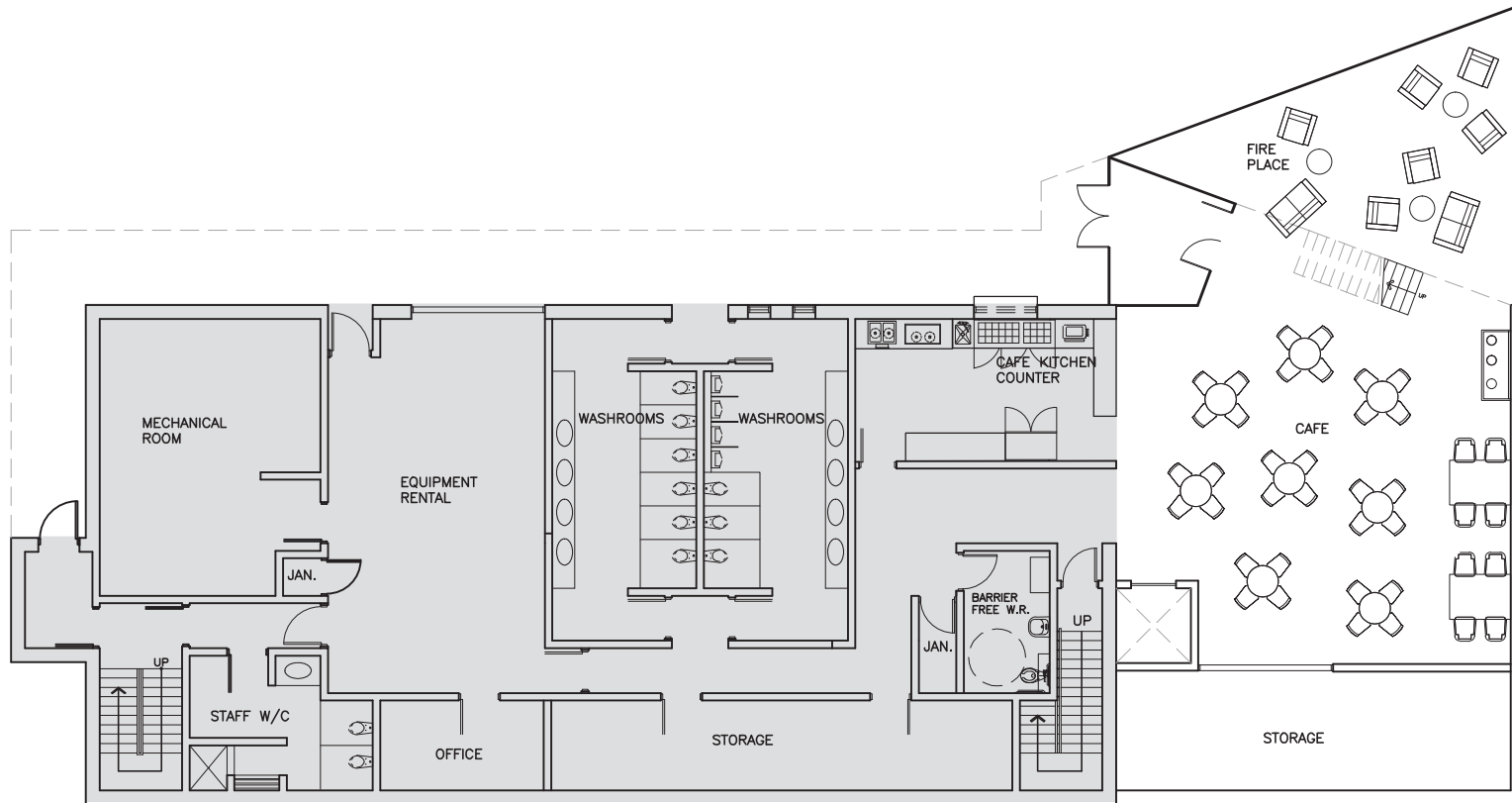
Key Guidelines:

- Building renovations and additions should provide views to the water and be highly transparent
- The use of high quality materials and finishes will promote the feeling of permanence and quality construction
- The existing structure should be re clad in a metal-siding system that complements the new addition constructed in wood and glass. The new addition should demonstrate innovation in structural wood technologies.



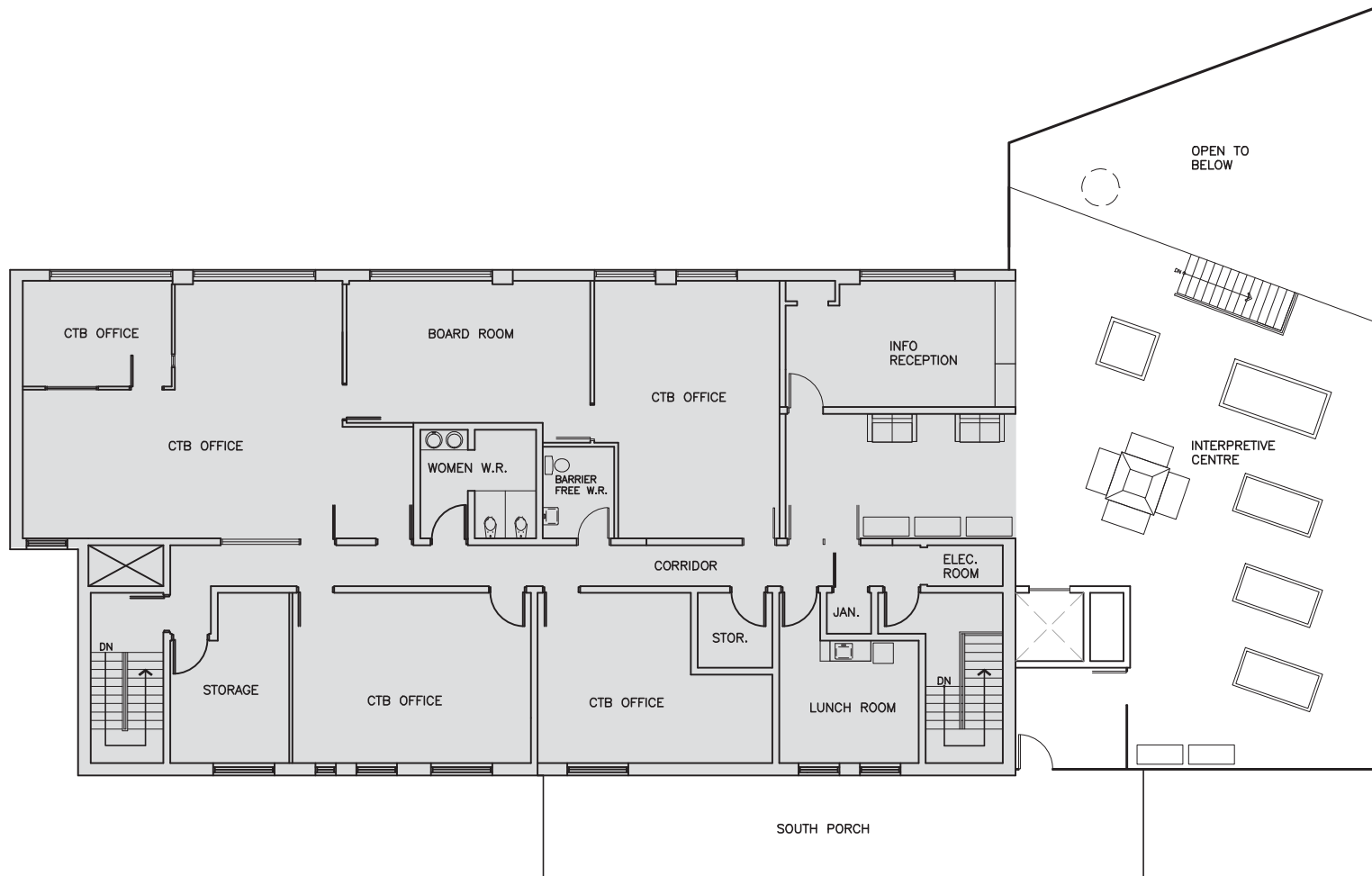


Pool 6 Park Pavilion renovation and addition with new ground floor Cafe and second floor Welcome Centre



- Indicates existing renovated building
- Indicates building addition

Pool 6 Park Pavilion - Potential Main Floor Plan



- Indicates existing renovated building
- Indicates building addition

Pool 6 Park Pavilion - Potential Lower Floor Plan

2.10 POOL 6 WHARF

The Pool 6 Wharf should continue to attract cruise ships and other large vessels. The design of this area should make provision for temporary fencing to be erected to secure the area when cruise ships are in dock. Adjacent features include the historic Railway Trestle and the East Point Lookout, which can be modified to provide safe, public access to viewing areas on the water.

Key Elements:

- The Wharf should continue to welcome large vessels. New public facilities within the Pool 6 Pavilion can provide support functions including washrooms, visitor processing areas, tourist information, café, bike rentals and interpretive displays.
- The Railway Trestle can be improved to provide ramp and stair access to its deck with sitting areas looking out over the water
- The Waabinong (East) Lookout can be improved to provide a trail destination on the water
- The Dockside Allee is at the upper portion of the Wharf along the wharf that provides a walking trail south edge of Pool 6



The Wharf will continue to accommodate cruise ships and other large vessels



Railway Trestle



- 1 CRUISE SHIP WHARF AND PARKING
- 2 WASHROOM PAVILION AND RAMP
- 3 RAILWAY TRESTLE
- 4 WAABINONG (EAST) LOOKOUT

Key Guidelines:

- The Railway Trestle should be retrofitted for public access and use. The retrofit should retain the existing character of the Trestle and should highlight the importance of the railway in the industrial history of the site.
- A stair and ramp will provide access to the upper deck which will have seating
- A park washroom pavilion is proposed to be located in this area near the base of the ramp and stairs
- The Waabinong (East) Lookout provides a dramatic overview of the harbour and Lake Superior. Its form is based on the Medicine Wheel which is oriented to the cardinal points. Interpretive signage should highlight the nine millennia history of Aboriginal settlement along this shoreline.
- The wharf will continue to be used for cruise ship and large boat docking. The paved parking area will serve park users when not in use for cruise ships. The existing asphalt surface can be improved by painting graphic images onto its surface as part of a public art initiative.



Painting on paving



The Dockside Allee can provide a walking path at the edge of the wharf



Cruise Ship Wharf Parking Area



A. Shoreline Section of the Cruise Ship Wharf and Dockside Allee



B. Shoreline Section at the Beach



Location of sections through the Beach and Cruise Ship Wharf



Railway Trestle Ramp and Lookout



Waabinong (East) Lookout

2.11 PARKING AND CIRCULATION

Improved access to these lands will be provided with the extension of Sleeping Giant Parkway through the site linking to the Central Avenue Overpass. An integrated parking plan will ensure that adequate and accessible parking is available for major destinations including, new park uses, the proposed Art Gallery in conjunction with parking needs for Prince Arthur's Landing.

Key Elements:

- All trails will accommodate active modes of transportation, with bicycle parking provided throughout the park and concentrated at key destinations
- Sleeping Giant Parkway will be extended south of Pearl to the southern edge of the Pool 6 lands. Eventually, the Parkway will be linked further south to the Central Avenue overpass. This roadway extension can also be used by commuter cyclists passing through the waterfront.
- Parking north of the Pool 6 Park Pavilion will provide 100 off-street stalls and 46 on-street stalls along the access road
- Parking near the Cultural Campus will provide 316 off-street stalls and 13 on-street stalls



South of Pearl Parking



Naturalized Parking Lot



- 1 SOUTH OF PEARL
316 off-street stalls
13 on-street stalls
10 trailer stalls
- 2 ROADWAY
46 on-street stalls
- 3 POOL 6 PARK PAVILION
100 off-street stalls
- 4 CRUISE SHIP WHARF
PARKING AND SERVICING
- 5 SLEEPING GIANT PARKWAY
- 6 KEY BICYCLE PARKING
LOCATIONS

- 319 spaces were recommended to be built in this area based on the Prince Arthur's Landing Parking Study
- 10 trailer parking stalls are also provided in the existing lot adjacent to the boat launch area. Eventually it is recommended that the boat launch be located in another location on the waterfront where trail/launch conflicts are avoided.

Key Guidelines:

- Bicycle parking should be provided in convenient locations throughout. It should be well-lit, highly visible and include a combination of covered and uncovered spaces.
- Materials should be durable, low maintenance, vandal resistant and long-wearing, and resistant to chemical damage from de-icing compounds and petroleum products.
- All paving material should avoid tripping hazards or drainage problems, and must provide for full barrier free access in keeping with Provincial and City standards. In particular, the design of paving patterns should take into consideration the needs of the visually impaired through the use of contrasting materials.
- All paving materials should be of excellent quality and workmanship. Paving colour or patterning can be used to differentiate vehicle and pedestrian areas.
- Where feasible, surface materials that reduce surface runoff (e.g. unit brick pavers, granular fines) should be used.
- Asphalt is the recommended surfacing for some parking lots due to its flexibility, smooth surface, cost effectiveness and low maintenance and repair costs.
- Parking areas should be screened with vegetation to reduce their visual impact, but screening should be designed to preserve sight lines to program areas and the water
- An infiltration area with a minimum width of 3.0 metres should be located at the edges of parking lots
- Low-impact development techniques will be integral to road and parking design, integrating stormwater management elements such as swales, landscaping and permeable materials.
- Sidewalks, where provided, should be no less than 2.0 metres in width and have trees planted within the boulevard. All sidewalks and pedestrian crossings should be fully barrier free.
- Sleeping Giant Parkway extension should be 8.5 metres in width, painted with two drive lanes of maximum 3.25 metres in width. The additional 1 metre on each side can be used for informal on-street parking during events or by cyclists.
- Stormwater run-off from the Sleeping Giant Parkway should be directed into the Circuit Channel



South of Pearl Street Parking Lot Visualization



Pool 6 rubble painted with graffiti

3.0 IMPLEMENTATION

The following section provides an overview of implementation steps, including agency approvals and the sequencing of capital projects.

3.1 APPROVALS AND COORDINATION

This section provides an overview of the necessary approvals and coordination that will be required to implement the Waterfront Master Plan Update. Typically, designs that effect change to the shoreline, river banks and adjacent sensitive lands may require special permits from conservation authorities for specific projects and may also be subject to a formal Environmental Assessment. In addition, the normal municipal approval processes are required for zoning amendments, site plan approvals and building permits.

In order to coordinate the various approvals, it is important that all stakeholders including the City of Thunder Bay's Planning and Building Department, the Lakehead Region Conservation Authority or other relevant conservation authorities and the Ministry of the Environment and Climate Change (MOECC) are engaged early in the implementation process.

Council Direction

This Master Plan Update recommends Tug Boat Basin and the surrounding lands for public open space and recreational uses.

A Marina combined with the Temple Reef Sailing School and Community Boating Centre has alternatively been proposed for Tug Boat Basin by members of the boating community. A Marina would require significant public-sector investment and land-based facilities (ie: parking/building) that will impact the potential for the recommended park activities. Should Council direct staff to pursue this option within Tug Boat Basin, this decision would require further technical, financial and operational review.

To understand if a Marina in Tug Boat Basin is feasible, it is recommended that the City undertake:

- Wave Study
- Environmental Assessment (including the Basin)
- Address Marine Archaeology
- Capital, Operating Costs and Funding
- Land Based Requirements

Environmental Assessments

The Environmental Assessment Act requires all public undertakings which affect the environment to undergo a formal Environmental Assessment (EA), unless specifically exempted by Regulations or Ministerial Order. The word "environment" is broadly defined to encompass ecological, social, economic and cultural factors.

The EA process consists of a rational analysis of proposed projects, called "undertakings", which includes:

- A clear description of the project purpose and rationale;
- A definition of the affected environment, potential environmental effects and likely actions needed to mitigate the effects;
- Identification of preferred and alternative undertakings, as well as alternative methods of carrying out each of the possible undertakings;
- An evaluation of advantages and disadvantages of the alternatives; and
- Thorough documentation of the public, stakeholder and expert consultations.

There are two types of EA studies, as defined by O-Reg 344. These are a Municipal Class Environmental Assessment and an Individual Environmental Assessment. A combination of both will likely be required to implement the Waterfront Master Plan Update.

An Individual EA for the South of Pearl area was started in 2008 (referred to as the New Marina and Pool 6 Lands), and the EA Terms of Reference was accepted at that time by the MOECC. It is recommended that this process be re-initiated through a start-up meeting to discuss process and next steps with the MOECC. Discussions with the MOECC will assist in identifying whether the City should continue with the Individual EA or proceed with a Class EA.

It is important to note that the EA approvals process provides direction to the municipality to proceed with further study and design work. However, additional approvals are required to change the land use designation from industrial to park use, including a record of site condition, zoning amendment and official plan amendment.

Municipal Approvals

The usual planning and building approval process will need to be followed to implement the Waterfront Master Plan Update, such as changes to parkland categories in the Official Plan, rezoning necessary to accommodate new or renovated park buildings / facilities and approval of detailed site plans. Similarly, building permits are required for all construction projects.

Due process for Official Plan and Zoning amendments includes a formal Public Meeting as per the Planning Act and adoption by City Council. An informal Community Meeting may also be held prior to the statutory Public Meeting to give stakeholders and the public more time to comment. The statutory Public Meeting is typically held during a scheduled Planning and Development Committee meeting. At that time, the Committee may support, amend or defer the issue to a later meeting. The matter then proceeds to the full City Council. Council's final decision may be appealed to the Ontario Municipal Board.

Site Plan Approval may be required for institutional or commercial projects. This step is usually administrative in nature and does not need Council's approval. A coordinator is assigned to each Site Plan Application and is responsible for deciding which departments must be on the circulation list for plans. Each department will review and comment on the site plan. The proponent is then expected to address the comments and resubmit revised plans. If satisfactory, approval is granted which allows the proponent to seek a building permit.

3.2 PHASING SCHEDULE

The following phasing concept is based on two major phases. For discussion purposes only, the duration of of this process is based on 2 four-year phases, recognizing that the timing of capital projects will be dependent on funding. The objective governing the proposed sequence of improvements is to provide greater public access to some areas of the site in the near term as part of Phase 1. During Phase 1, work can commence for those areas requiring site regrading and environmental mitigation, but the actual development of improvements in these areas, and site occupancy, will occur in Phase 2. Future phases may include the development of facilities undertaken by other entities including private-sector operators and cultural/institutional partners.

Phase 1 (2015 – 2019)

- South of Pearl Parking Lot and associated extension of Sleeping Giant Parkway
- Development of trail network including Asphalt Trail along waterfront from Cultural Campus to Dock 5; Wood Boardwalk at Dock 5 and Gravel Trail on Wildflower Hill
- Parks Maintenance Yard and Building
- Associated Trail Lighting and Electrical Distribution
- Associated Wayfinding, Interpretive Signage, Bicycle Parking and Benches
- Wildflower Hill Planting
- Renovations and Addition to Pool 6 Office Building to Provide Public Facilities.
- Install Oil/Grit Separator at head of Habitat Pond
- Construction of Storm Water Management Pond between Spirit Garden and Sin-Mac Jetty
- Floating Docks for Fishing and Kayak/Canoe Launch
- Commence General Site Regrading and Rubble Recycling
- Re-Naturalization (Trees, Terraseed, Plantings) throughout site as regrading occurs
- Potential Art Gallery Construction during this Phase

Phase 2 (2019 – 2023)

- Extension of Sleeping Giant Parkway to south end of Pool 6 Lands (or in association with link to Central Avenue overpass)
- Site services (sanitary, hydro, gas, telephone/cable)
- Cruise Ship Wharf Improvements including Electrical Services
- Trestle Restoration/Ramp and Stairs
- Waabinong (East) Lookout
- The Field Construction and Planting
- Gravel Trail along Dockside Allee and upper wharf dock balustrade
- Gravel Trail on Ridge Line
- Associated Trail Lighting and Electrical Distribution
- Associated Wayfinding, Interpretive Signage, Bicycle Parking and Benches
- Orchard and Community Garden at Cultural Campus
- Wildflower Pavilion Construction
- Three Hills Construction including Channel Circuit and Bridges
- Three Hills Pavilion and Washrooms
- Washroom Pavilion at Trestle and Kayak/Canoe Dock

Future Phases

- Additional Cultural Campus facilities such as Roundhouse or potential gallery expansion may be undertaken as future phases
- Nordic Springs – assumed to be developed and operated as a private-sector project on a land-lease basis.

3.3 COST ESTIMATES

Exterior and Landscape Improvements		Costing Summary				
		Units	Quantity	Unit price (\$)	Total Cost (\$)	Type of Work
Pool 6						
1.0	Site Preparation	m2	155,000	\$10	\$1,550,000	Landscape
2.0	New Roads (8.5m, asphalt)	linear m	1,200	\$1,500	\$1,800,000	Landscape
3.0	New and Resurfaced Parking Lots					
3.1	On-street Parking Lots	m2	1,000	\$170	\$170,000	Landscape
3.2	Pool 6 Parking Lot	m2	4,700	\$170	\$799,000	Landscape
3.3	Pool 6 Wharf Parking Lot	m2	1,450	\$75	\$108,750	Landscape
3.4	South of Pearl Parking Lot phase 2	m2	4,000	\$170	\$680,000	Landscape
4.0	5m Trails (asphalt)	linear m	880	\$750	\$660,000	Landscape
5.0	3m Trails (asphalt)	linear m	1,600	\$165	\$264,000	Landscape
6.0	2m Sidewalks (concrete)	linear m	350	\$180	\$63,000	Landscape
7.0	2m Trails (crushed stone gravel)	linear m	730	\$70	\$51,100	Landscape
8.0	5m Boardwalk	linear m	110	\$1,800	\$198,000	Landscape
9.0	3m Boardwalk	linear m	65	\$1,100	\$71,500	Landscape
10.0	3m Heritage Site Boardwalk	linear m	160	\$1,300	\$208,000	Landscape
11.0	Existing Sidewalk Resurfacing	linear m	410	\$75	\$30,750	Landscape
12.0	Trees	each	450	\$750	\$337,500	Landscape
13.0	Naturalization					
13.1	Sod	m2	14,000	\$6	\$84,000	Landscape
13.2	Terraseed	m2	16,000	\$5	\$72,000	Landscape
13.3	Planting (terrace seeding + potted material)	m2	35,000	\$100	\$3,500,000	Landscape
13.4	Bioswales (incl. ped. bridges)	m2	2,100	\$1,000	\$2,100,000	Landscape
14.0	Washrooms	budget	3	\$120,000	\$360,000	Architecture
15.0	Fishing Dock	budget	1	\$250,000	\$250,000	Landscape
16.0	Canoe and Kayak Dock	budget	1	\$350,000	\$350,000	Landscape
17.0	Wildflower Hill Pavilion	m2	180	\$4,300	\$774,000	Architecture
18.0	Maintenance Building (South of Pearl Parking Lot)	m2	220	\$2,700	\$594,000	Architecture
19.0	Pedestrian Bridges	each	2	\$120,000	\$240,000	Landscape
20.0	Habitat Pond Improvements	budget	1	\$50,000	\$50,000	Landscape
21.0	Beach Construction	linear m	1	TBD	TBD	
22.0	Wayfinding Signage	each	40	\$2,500	\$100,000	Signage
23.0	Entrance and Interpretive Signage	each	18	\$5,000	\$90,000	Signage
24.0	Site Furnishing (benches, trash bins, bike rings, bollards and etc.)	budget	1	\$270,000	\$270,000	Landscape

Costing Summary

Exterior and Landscape Improvements		Units	Quantity	Unit price (\$)	Total Cost (\$)	Type of Work
25.0	Pool 6 Building Renovation + Expansion					
25.1	Existing Building Renovation	m2	860	\$1,650	\$1,419,000	Interior / Architecture
25.2	Expansion	m2	500	\$3,300	\$1,650,000	Architecture
26.0	Three Hills					
26.1	Hill Construction	budget	1	\$750,000	\$750,000	Landscape
26.2	Channel Circuit	linear m	500	\$1,500	\$750,000	Landscape
26.3	Bike Trail (1.8m, packed mineral soil and clay, aggregate, rock and boardwalks)	linear m	750	\$100	\$75,000	Landscape
26.4	Bridges	each	3	\$40,000	\$120,000	Landscape
26.5	Cyclist's Pavilion	m2	500	\$2,700	\$1,350,000	Architecture
	Naturalization					
26.6	Trees	each	350	\$750	\$262,500	Landscape
26.7	Terraseed	m2	17,600	\$5	\$79,200	Landscape
26.8	Planting	m2	4,400	\$180	\$792,000	Landscape
27.0	Nordic Spring					
27.1	Private Investment					
29.0	Trestle Improvements					
29.1	Trestle Renovation (incl. structure and landscape)	budget	1	\$200,000	\$200,000	Landscape
29.2	Ramp	budget	1	\$150,000	\$150,000	Landscape
30.0	East Point Lookout Improvements					
30.1	Lookout Renovation (incl. landscape, handrails, furnishing and boardwalk)	budget	1	\$200,000	\$200,000	Landscape
30.2	Medicine Wheel Structure	budget	1	\$200,000	\$200,000	Landscape
31.0	Cultural Campus					
31.1	Orchard	budget	1	\$30,000	\$30,000	Architecture
31.2	Trail	linear m	75	\$165	\$12,375	Architecture
32.0	Naturalization					
32.1	Trees	each	50	\$750	\$37,500	Landscape
32.2	Terraseed	m2	13,000	\$5	\$58,500	Landscape
32.3	Planting (tall grasses, shrubs and wildflowers)	m2	1,500	\$180	\$270,000	Landscape

Exterior and Landscape Improvements		Costing Summary				
		Units	Quantity	Unit price (\$)	Total Cost (\$)	Type of Work
33.0	Civil Infrastructure					
33.1	Grading Allowance for Pool 6 Site	allowance	1	\$1,000,000	\$1,000,000	Infrastructure
33.2	Fire Hydrants	each	4	\$5,000	\$20,000	Infrastructure
33.3	High Voltage Distribution Transformer (2m x 2m)	each	1	\$100,000	\$100,000	Infrastructure
33.4	Outdoor Electrical Panels at Pool 6 (1m x 2m)	each	4	\$37,000	\$148,000	Infrastructure
33.5	Stormceptor, at Habitat Pond (3m x 4.5m)	each	1	\$40,000	\$40,000	Infrastructure
33.6	New Drainage ditch on West side of berms to direct runoff to stormceptor	linear m	370	\$50	\$18,500	Infrastructure
33.7	Class D costing for Storm / Siltation Pond (south of Wilson Headland)	lump	1	\$300,000	\$300,000	Infrastructure
33.8	Gas Supply to Pool 6 Lands	lump	1	\$20,000	\$20,000	Infrastructure
33.11	Phone and Cable Supply to Pool 6 Lands	linear m	1,000	\$150	\$150,000	Infrastructure
33.12	Water Supply to Pool 6 (including 3 washrooms and a Spa, including pools)	linear m	750	\$300	\$225,000	Infrastructure
33.13	Waste Water to Pool 6 (including 3 washrooms and a Spa, including pools)	linear m	750	\$300	\$225,000	Infrastructure
33.14	Fire Line Supply at Cruise Ship Dock	linear m	200	\$250	\$50,000	Infrastructure
33.15	Power supply at Cruise Ship Dock	linear m	250	\$150	\$37,500	Infrastructure
33.16	Water Supply at Cruise Ship Dock	linear m	50	\$150	\$7,500	Infrastructure
33.17	Electrical Supply to Street Lighting (incl. fixtures)	linear m	1,500	\$250	\$375,000	Infrastructure
33.18	Electrical Supply to Trail Lighting (incl. fixtures)	linear m	1,000	\$230	\$230,000	Infrastructure
33.20	Parking Lot Lighting (11 dual fixture poles & 10 single fixture poles, incl. fixture)	lump	1	\$120,000	\$140,000	Infrastructure
33.19	Rural Road Cross Section (road and ditch)	linear m	700	\$520	\$364,000	Infrastructure
33.21	Cost for Septic (Option 2 to Servicing)	each	3	\$15,000	\$45,000	Infrastructure

Total Site Development Expenditures	\$27,727,175
Permitting and Consulting (15%)	\$4,159,076
Contingency (30%)	\$9,565,875
Total Estimated Cost	\$41,452,127

Notes

- * does not include municipal or agency approvals, geotechnical, survey and remediation measures if required
- * taxes not included
- * servicing of Pool 6 area includes tie-ins to nearby Hydro poles only and does not include high voltage switches or connections to site primary loop system. To be further discussed with TBH
- * electrical work for buildings not included

*** This costing has been prepared for project planning purposes, it is high level and has been developed through assumed unit costs. Ultimate costs will need to be further refined through the detailed design process.**

Note: Ministry Approvals are not included in this estimate.

