TRANSPORTATION MUNICIPAL/ENVIRONMENTAL STRUCTURAL
LAND DEVELOPMENT LANDSCAPE ARCHITECTURE
PLANNING STRATEGIC SERVICES GIS/MAPPING

City of Leduc

Final Report

Telford Lake Master Plan

March, 2010

ISL Engineering and Land Services

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1.0 Introduction

The focus of the Telford Lake Master Plan is to develop a comprehensive plan and strategy for the long term development and management of Telford Lake and the lands that surround it. This project envisions a creative and functional plan that builds on the recommendations of the Telford Lake Recreational Study (2000), the vision of the City and its citizens, and the specific needs of many stakeholder groups. From the initial stages of the project, five key objectives have been continually referenced as the foundation for the planning and future implementation of the Telford Lake Master Plan:

- **Environmental Protection**: The Master Plan must provide for protection of the quality of the Telford Lake environment by protecting water quality, habitat, and vegetation for wildlife and visitors. Based on environmental review and design expertise the plan must provide clear direction on how potential impacts on the lake and shoreline will be mitigated as an integral part of future recreational development.

- **Multiway and Trails**: The Master Plan will clearly illustrate the extension and development of a multiway (multi-use trail with trail amenities) around Telford Lake and define a strategy for its long term implementation as the most important recreational amenity on Telford Lake. The Master Plan must also define a network of trails that is integrated with the City of Leduc trail network, provides a variety of surfaces and experiences to meet the needs of a variety of users, and provides links to existing and proposed facilities.

- **Recreational Open Space and Facilities**: The Master Plan must define and ultimately create a series of integrated recreational spaces that facilitate a wide range of existing and potential activities, recreational amenities, and natural open space areas where residents of Leduc can recreate in a natural setting all around Telford Lake.

- **Paddling Venue**: The Master Plan must provide a clear plan for the development of Telford Lake as a recognized centre for all types of paddling within western Canada. To achieve this, the plan must address the program requirements of all of the stakeholder groups through the design/inclusion of suitable facilities and amenities. The plan must also clearly address how a new and expanded paddling venue fits within the context of the other existing and proposed recreational facilities and more importantly within the objectives of protecting the environmental integrity of the lake.

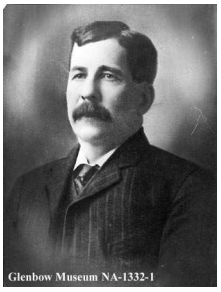
- **Land Acquisition**: The Master Plan will define the overall land use picture around Telford Lake, the land acquisition requirements and processes available to the City, and the relationship between land acquisition and Master Plan implementation. An important result of this will be to forge positive relationships

with land owners and garner support for the vision based on common principles of environmental stewardship, recreational potential and community health.

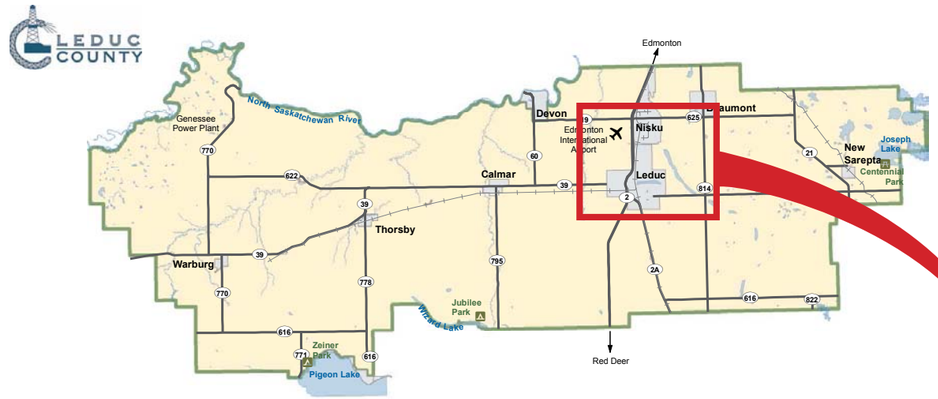
1.1 Telford Lake Context

Telford Lake is an important natural feature and recreational amenity to the City of Leduc and to the citizens that enjoy it throughout the year. The lake is an anchor for some of Leduc's most important recreation facilities including the multiway, Telford House Park, the Cultural Village (Brown Property), and William F. Lede Regional Park. Telford Lake is also an important regional environmental feature, provides important terrestrial and aquatic habitat, and is an important source of surface and ground water. The Lake is a narrow and shallow lake that is approximately 3.0 kilometres in length with a total surface area of 85 ha. Telford Lake is located along the Gwynne drainage channel, which links together several narrow and shallow lakes, and drains eastward into Saunders Lake by way of a water control structure (weir). The overall Master Plan project site of 355.70 ha includes a wide range of land uses including residential, industrial, urban reserve and recreational (Figure 1.1).

Telford Lake is a cornerstone location in the history of the City of Leduc. Originally called Leduc Lake, the Lake was originally settled in 1889 by Robert Taylor Telford, who would later become Mayor of Leduc. He was Leduc's first Member of the Legislative Assembly, first postmaster, first hotelman, first general merchant, first justice of the peace, and first lumberman. Decades after Telford's settlement, the lake was renamed in his honour. Telford Lake has been an important recreational location in Leduc since the early 1900's. During the winter, the Lake was used to host organized hockey tournaments between the Leduc and the Conjuring Creek Hockey teams. This rivalry was annually settled in the Humber Cup tournament, named after a Leduc jeweller who put up the trophy in the early 1900's. According to interviews with local residents, when the organized teams moved into covered rinks, hockey rivalries continued between local residents, who annually cleared hockey on the north and south sides of the lake. In more recent history, Telford Lake has hosted various Alberta Endurance Ice Racing Association and Leduc Motorsports Club events, featuring off-road vehicle racing on cleared ice tracks on the lake.


Glenbow Museum NA-1332-1

Originally settled as agricultural land, the land-uses of areas around Telford Lake have changed as Leduc has grown. North of Telford Lake, an area locally referred to as 'Whiskey Hill', was used for a gravel pit operation for several decades. This land-use has resulted in a variety of land forms and a mix of vegetation communities. Most notably, a man-made pond from gravel operations remains separated from Telford Lake by a thin strip of land. As well, many of the service roads crisscrossing the area in historical air-photos remain as informal pathways used by off-road vehicles and mountain bikes. A few significant forest areas left uncut by the gravel pit operation remain, while formerly cleared areas have begun to regenerate with various plant communities. The Sawridge Lands were the site of Edmonton International Airport's only plane crash in 1973.



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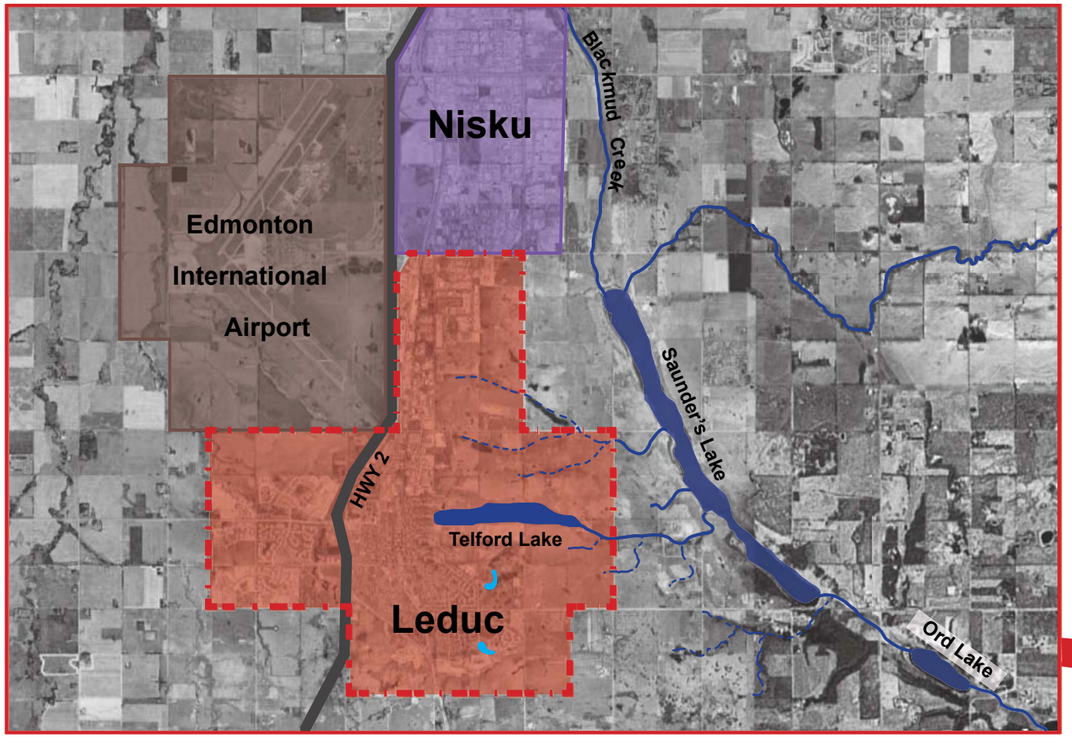
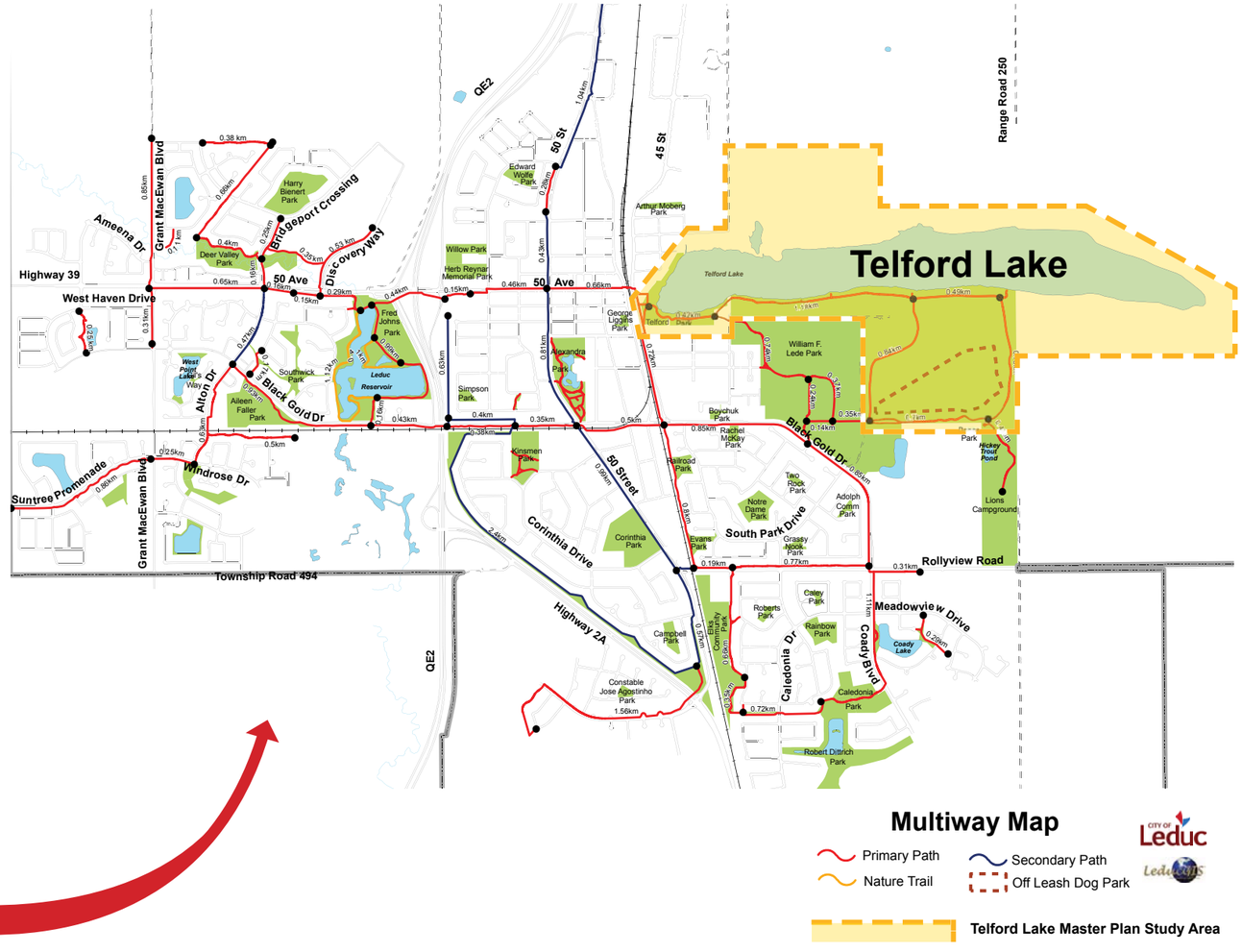


City of Leduc and Surrounding Areas



City of Leduc

Land along the north and south shore of the eastern end of the lake have remained agricultural over the decades. One major change has been the addition of a Ducks Unlimited weir structure during the late eighties, along a drainage channel where water from Telford Lake empties into Saunder's Lake to the east.

Land at the middle of the south shore of the lake is an important area of Telford Lake's land development. This area was formerly used as Leduc's sewage lagoon for many decades. In 1985, the city abandoned these lagoons, when the city connected into a regional sewage collection system. This area was recommended to be developed into a regional park, W.F. Lede Regional Park. As a result, when Telford Lake was dredged in the late eighties/early nineties, dredged material was used to remediate and fill the lagoons. This area has to a large extent remained undeveloped since that time. Directly to the west of the lagoon site, a series of sports field have been developed. This area has recently undergone its own Master Plan process (Lede Park Master Plan, 2009) to develop the site in to a highly refined sporting facility, including a large scale recreational centre, expanded sports fields, and trail connections.

Land to the west end of the Lake is home to the North Telford and South Telford residential communities. As apparent in historical air-photos, these areas began to fill in during the 1940's and were almost fully developed by the 1970's (Figure 1.2). The western tip of the lake has been home to Telford House, an important senior's recreation facility, for several decades. This site was developed as a small community park, Telford House Park, in 1992. A key influence on the zoning of the lands around Telford Lake is the Noise Exposure Forecast (NEF) contours that are defined as part of the Airport Vincinity Protection Area (See Section 2.5).

1.2 Study Process

To meet the requirements of the project and the vision of the City of Leduc, a customized work plan progresses the project in an intelligent, efficient, and creative manner. The following outlines the various elements of the project:

- Background Assessments: These tasks provided baseline information about Telford Lake for the preparation of the Master Plan. This research includes biophysical, lake water/habitat quality, infrastructure and facilities, land use and ownership, recreational use, and paddling programming.

- Stakeholder Consultation: Throughout the process various meetings with stakeholders were held to provide insight into the project. Key consultation strategies include, workshops, steering committee meetings, design presentations, and status report meetings.

- Initial Concept Options: A synthesis of information gathered in the background assessment and stakeholder consultation culminates in three initial concept

options. These options were presented to City staff, the Steering Committee, and stakeholder groups for feedback.

- Preliminary Master Plan: The preferred Initial Concept elements were combined into a preliminary plan and designed to a higher level of detail.

- Public Open House: A public open house was held on October 20, 2009 to present the Preliminary Master Plan to the public to receive feedback for use in further design development.

- Implementation Plan: Capital costs, budgeting, and phasing information was generated to create strategies to implement the Master Plan.

- Final Master Plan: A fully refined and detailed Master Plan was presented to stakeholder groups and City Council for discussion and fine-tuning.

- Final Report: As the culmination of the design process, this report outlines the design process, Final Master Plan, and Implementation Plan. This document provide the necessary information required to understand and implement the Master Plan at a later date.

1.3 Acknowledgements

ISL Engineering and Land Services would like to acknowledge the following individuals and firms for their involvement in the Study and their commitment to the process and results:

Telford Lake Steering Committee
- Judy Archie (Alderman)
- Dominic Mishio (Alderman)
- Andy Tait (Environmental Advisory Board),
- Arlene McWilliam-Protz (Telford Lake Alberta Training Centre Society)
- Neil Hollands (Alberta Environment)
- Nicholaus Moffatt (Leduc County)
- Diane McIntosh (Parks, Recreation and Culture Advisory Board)
- Rick Hill (Telford Lake Alberta Training Centre Society)
- Sean Beveridge (North Telford Resident)
- Bob Gaetz (Landowner)
- Dale Soetart (Ducks Unlimited)

Stakeholder Groups
- Residents of North and South Telford
- Edmonton Regional Airports Authority
- Telford Lake Alberta Training Centre Society
- Off-Leash Dog Park Users
- Community Garden Users
- Alberta Environment

The City of Leduc Project Team
- Darrell Melvie
- Richard Hobson
- Jason Simituk
- Jennifer Cardiff
- Kevin Cole
- Mariann McLaughlin

The ISL Design Team
- ISL Engineering and Land Services
- LandInc
- Spencer Environmental Management Services
- Pisces Environmental

Did you know...Telford Lake has a long history of rival hockey rinks? Many Leduc residents can recall games and grudges between the “Northside” and “Southside” hockey teams.

Did you know...Sawridge Lands was the site of Edmonton International Airport’s only plane crash? On January 2nd,1973, a cargo plane transporting cattle crash landed short of the runway due to poor winter visibility.

Did you know...the pond in the Sawridge Lands is man-made? The pond is a result of a gravel pit that was in operation for many decades.

Did you know...Lede Park was named for William Lede who was the mayor of Leduc from 1968-1980. In 1977, he received a Canadian Silver Jubilee Medal for public service for Leduc.

Did you know...the sewage lagoons shown in this airphoto were filled and remediated using material dredged out of Telford Lake in the late 1980’s?

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Telford Lake Master Plan
City of Leduc

Historical Context

Figure 1.2
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2.0 Background Research

2.1 Previous Studies and Reports

Planning for the future of Telford Lake has included a number of previous studies that provide a strong foundation for future planning and development. These documents include:

- Lede Park Master Plan (EIDOS, 2009)
- Telford Lake Park Opportunity Paper (City of Leduc, 2008)
- City of Leduc Community Visioning Workshop Reports (2007 and 2009)
- Telford Lake Shoreline Buffer Report (Stantec Consulting Inc., 2008)
- City of Leduc Parks, Recreation and Culture Master Plan (CDC, 2006)
- City of Leduc – 2005 Municipal Development Plan
- Edmonton International Airport Vicinity Protection Area Regulation-AR 55/2006 (Government of Alberta, 2006)
- Telford Lake Recreation Study (Earthscape Consultants, 2000)
- Telford Lake Environmental Overview (R.L & L. Environmental Services Ltd., 2000)
- The Telford Lake Dredging and Lagoon Reclamation—Preliminary Engineering Report (Daltam Consulting, 1987)
- The Telford Lake Plan (Edmonton Metropolitan Regional Planning Commission, 1983)

2.2 Biophysical Assessment

Working as part of the project design team, Spencer Environmental Management Services and Pisces Environmental completed a detailed assessment of the biophysical characteristics of the lake and the lands that surround it. Working from previous studies and compiling new data through field surveys and sampling, a terrestrial biophysical assessment and lake water quality and fish habitat assessment were completed. The process, findings and recommendations of the biophysical assessment are provided in Appendix A of this report.

The following is a brief overview of the guidelines that were developed to address the environmental sensitivities of Telford Lake. These guidelines have been used as a frame of reference in the preparation of the Master Plan. Planning and developing the future of Telford Lake in accordance with these guidelines will minimize the impacts to the ecology of the Telford Lake study area:

- Avoid loss of large areas of upland native habitat from areas of existing mature forest during the development of Telford Lake (north and southeast of lake) in order to maintain the diversity of songbird species in those areas.
- Minimize the creation of new trails within areas of mature forest and, if possible, plan all additional trail development to occur on existing trails/areas of disturbance (e.g. disturbed grassland, existing ATV trails on the Sawridge Lands) and along the perimeter for development.
- Establish a 30m shoreline buffer to protect wildlife habitat and reduce human disturbance to breeding and foraging areas of waterfowl and waterbirds on Telford Lake.
- Minimize development in the riparian habitat and narrow forested area around the lake. Retain upland nesting habitat (e.g. grassland areas).
- Avoid increasing the area of manicured grass immediately adjacent to the lakeshore. This will deter Canada geese from nesting in large numbers in the area, an important point considering the Edmonton International Airport's

Runway 12/30 is located immediately above Telford Lake.

- Avoid the loss or alteration of wetland habitat during the development of the Telford Lake area.
- Maintain the vegetated corridor between Telford Lake and Saunders Lake in its current state and retain woodland willow patches at the eastern and northeastern end of the lake for wildlife habitat.
- Schedule project construction and recreational activities (e.g. rowing events) to avoid directly impacting critical waterfowl nesting habitat along the shoreline, particularly in the north-centre, south-central and eastern areas of Telford lake, between April 15 and July 31.
- Schedule lake dredging to coincide with the low water period in late fall to avoid the spawning period of brook stickleback and fathead minnow and the growth period for aquatic macrophytes.
- Avoid the locations of rare plants when constructing physical infrastructure of activities with high levels of concentrated disturbance (e.g. rowing competitions).

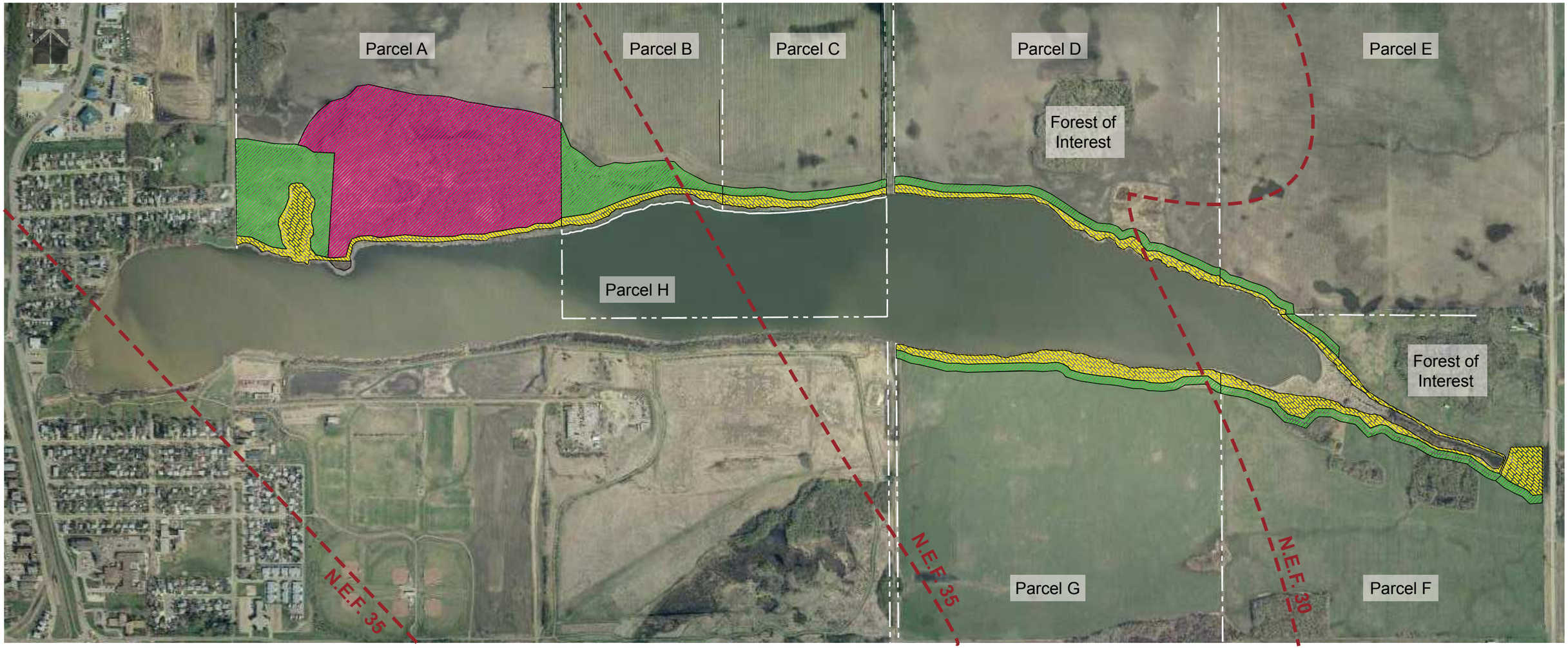
The Telford Lake area comprises diverse plant communities and supports a great diversity of wildlife, both on and off the lake. The study area does not support any environmental features or species that are sensitive to the point that all development should be avoided, however, all areas of sensitive habitat (e.g. emergent vegetation, upland nesting habitat) should be carefully considered in the development plans. The Telford Lake area presents an environment that is biologically diverse, but can also accommodate a certain amount of recreational activity and development that is in balance with the ecology of the area. Assuming certain sensitivities are considered during the planning process, Telford Lake will continue to provide the natural values it does now as well as meet the demand of a diversified recreational area for the public.

2.3 Adjacent Land Use Strategy

There are currently seven privately owned parcels of land surrounding Telford Lake on the north, east and south sides. There is also one privately owned parcel that is completely under the surface of the lake. Since the vision for a multiway around the lake has been identified as a community priority for a long time, one of the key objectives of the Master Plan was to develop a strategy for facilitating this vision. To meet this objective, the design team met on several occasions with the land owners to keep them up to date on the project, to discuss the proposed development program, and to discuss potential options for the future development of the lands adjacent to the lake for recreational use and environmental protection. This section defines the land use and ownership status and the general strategy for land acquisition. Guidelines for the future development of the lands adjacent to the lake are provided in Section 2.3.3.

2.3.1 Land use and Ownership

As defined in the 2005 Municipal Development Plan the lands directly to the north of the centre part of Telford Lake are zoned as Industrial Reserve, and the lands surrounding the east end of the lake (north, east and south) are zoned as Future General Urban Use (predominantly Industrial, Commercial). The greatest influence on land use in the Telford Lake area is the Edmonton Airport Vicinity Protection Area Regulation, which imposes strict limits on the type of development and land uses that may develop along the flight path of the Airport. Given Telford's location under one of the airport's flight paths, Noise Exposure Forecast (NEF) contours in place restrict much of the Telford area to industrial use as illustrated on Figure 2.1. Residential development opportunities are limited to the east end of the lake, beyond the NEF 30 contour.



Environmental Reserve

Municipal Reserve

Additional Land to Acquire

Land Parcel	Shoreline Environmental Reserve (ha.)	Municipal Reserve for Multiway (ha.)	Additional Land to Acquire (ha.)
A	2.4	4.8	19.6
B	0.8	3.5	
C	0.8	0.8	
D	1.5	1.7	
E	0.2	0.4	
F	3.1	1.8	
G	2.2	1.7	

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Telford Lake Master Plan

City of Leduc

Adjacent Land-Use Strategy

Figure 2.1

March 2010

As indicated there are eight privately owned parcels within the study area. The following provides a summary of the size and characteristics of those parcels (refer to Figure 2.1):

- **Parcel A**: SW 36-49-25-W4M – This parcel totals 50.5 ha. (64.7 ha on title with approximately 14.2 ha within the bed and shore of the lake). The key feature of this land is the 26.2 ha (64 acres) of high quality and diverse forest, wetland and open space that is remnant from an old gravel operation. Currently used as an unauthorized hiking and off-road vehicle use area, this forested land has high potential for recreational and nature interpretation development.

- **Parcel B**: Block B, Plan 7921548 – This land totals 53.5 ha and contains a small amount (4.2 ha) of high quality mature forest at the east edge of Parcel A and along the shoreline of Telford Lake. The high quality mature forest in the upland area has a high diversity of habitat and species. Overall, this land has very good interpretive and passive recreational potential.

- **Parcel C**: Block A, Plan 7921548 – The total area of this parcel is 53.2 ha with the majority of the land currently in cultivation. There are no environmentally or recreationally significant features on this land outside of the shoreline area.

- **Parcel D**: SW 31-49-24-W4M – The total area of this parcel is 44.10 ha with the majority in cultivation. There is one significant preserved forest area of 4.3 ha in proximity to the Lake and there is a low, marshy area abutting the shoreline. Both of these features are of interest to future recreational development and environmental management of the lake.

- **Parcel E**: Lot 2, Plan 9023255 – This parcel totals 31.7 ha with the majority of the land currently in cultivation. There are no environmentally significant features outside of the shoreline area.

- **Parcel F**: NE 30-49-24-W4M – This parcel is 53.0 ha with the majority currently in cultivation or used for livestock. The northerly portion of the quarter is predominantly treed and contains the creek corridor that is the outlet for Telford Lake. Controlled by a fixed weir that is owned and managed through a License of Occupation by Ducks Unlimited, the outlet creek for Telford Lake drains east into Saunders Lake. The grazed forest areas north and south of the creek are home to diverse bird species and are of interest to future recreational development and environmental management of the lake.

- **Parcel G**: NW 30-49-24-W4M - The site is 52.2 ha and is currently in cultivation. These lands contain no environmentally significant features outside of the shoreline area.

- **Parcel H**: SE 36-49-25-W4M – This parcel of 16.6 ha is entirely under the surface of Telford Lake. While there is no development potential for this land as the Crown would claim all of the parcel as bed and shore of Telford Lake, there may be implications related to future dredging operations if they were to be approved.

2.3.2 Land Acquisition Strategy

The majority of lands required to accommodate park facilities are to typically acquired as Municipal Reserve (MR) and/or Environmental Reserve (ER) under the provisions of the Municipal Government Act (MGA).

- Environmental Reserve (ER) applies to those lands that are determined to be environmentally sensitive (as defined under the MGA), and may include shoreline areas of water bodies and water courses, and/or areas subject to flooding and subsidence. If adjacent to a water body, the MGA allows for a minimum dedication of 6m width[1]. The Act requires that the land to be retained in its natural state, but also allows for development as a "public park". In the case of Telford Lake, ER is proposed to be applied to those areas in proximity to the shoreline that are characterized by native vegetation, and will vary in width based on local conditions but will exceed 6m in all locations. Preservation and protection of the shoreline riparian area is the key consideration.

- Municipal Reserve (MR) applies to lands determined as required for municipal park and open space purposes. The MGA allows for a maximum dedication of 10% of the gross developable land (gross area less ER) available. The MGA limits the use of these lands to public parks, public recreation areas, schools, or buffers between uses. For the purpose of this Plan, the objective would be to have the MR dedicated in the form of a linear 20m-wide corridor parallel to the shoreline to accommodate multiway development. This 20m would be beyond the shoreline ER (MGA allows for 6m but it will be a minimum of 10m in all locations) to ensure a development buffer exceeding 30m as recommended in the Biophysical Assessment.

In cases where the land required to accommodate future park facilities exceeds the lands available for dedication as MR or ER, then alternative means of acquisition such as purchase will be required. ER and MR lands are acquired by the municipality without compensation to the landowner at the time of subdivision of the subject lands. Due to servicing constraints and the projected pace of development, much of the Telford area lands will not be developed in the foreseeable future.

In order to acquire lands for the development of the multiway around the lake in the near future, the City will need to negotiate with area landowners to acquire lands through the dedication of environmental reserve (ER) and municipal reserve (MR) in advance of development. From the perspective of the landowner, this approach may be advantageous as the net worth of the balance of the land can increase as all or part of the MR obligation will have already been addressed, and an asset will be in place that enhances the development of the property (See Section 5.2.1 for more details on the land acquisition strategy).

Based on the strategy described above of acquiring the ER for shoreline protection and acquiring MR for a 20m wide multiway corridor, it is estimated that the City must acquire approximately 46.25 ha. The specific land acquisition requirements for individual parcels around the land are outlined in Table 2.1 and illustrated on Figure 2.2.

[1] The ER boundary is measured from the edge of the bed and shore of the lake, which is determined by survey. In accordance with Section 3 of the Public Lands Act, the bed and shore of all water bodies are the property of the Crown.

Table 2.1: Estimated Land Acquisition Requirements

Parcel A	Legal:	SW 36-49-25-W4M
	Gross Area:	50.5 ha.
	Estimated ER/MR Required:	**26.8 ha**
	Total ER (incl. pond edges)	2.4 ha
	Total MR on Parcel:	4.8 ha (GDA of 48.1 ha)
	Additional Land to Acquire:	19.6 ha
Parcel B	Legal:	Block B, Plan 7921548
	Gross Area:	53.5 ha
	Estimated ER/MR Required:	**4.3ha**
	Total Shoreline ER:	0.80 ha
	Total MR (10% of GDA):	5.30 ha (GDA of 52.7 ha)
	MR Required for Multiway:	3.50 ha
	Remaining MR on Parcel:	1.80 ha
Parcel C	Legal:	Block A, Plan 7921548
	Gross Area:	53.2 ha
	Estimated ER/MR Required:	**1.6 ha**
	Total Shoreline ER:	0.8
	Total MR (10% of GDA):	5.2 ha (GDA of 52.4 ha)
	MR Required for Multiway:	0.8 ha
	Remaining MR on Parcel:	4.4 ha
Parcel D	Legal:	SW 31-49-24-W4M
	Gross Area:	44.10 ha
	Estimated ER/MR Required:	**3.2 ha**
	Total Shoreline ER:	1.5 ha
	Total MR (10% of GDA):	4.3 ha (GDA of 42.6 ha)
	MR Required for Multiway:	1.7 ha
	Remaining MR on Parcel:	2.6 ha
Parcel E	Legal:	Lot 2, Plan 9023255
	Gross Area:	31.70 ha
	Estimated ER/MR Required:	**0.6 ha**
	Total Shoreline ER:	0.2 ha.
	Total MR (10% of GDA):	3.2 ha (GDA of 31.5 ha)
	MR Required for Multiway:	0.4 ha
	Remaining MR on Parcel:	2.8 ha
Parcel F	Legal:	NE 30-49-24-W4M
	Gross Area:	53.0 ha
	Estimated ER/MR Required:	**6.3 ha**
	Total Shoreline ER:	3.1 ha, including outlet creek.
	Total MR (10% of GDA):	5.0 ha (GDA of 49.9 ha)
	MR Required for Multiway:	1.8 ha
	Remaining MR on Parcel:	3.2 ha
Parcel G	Legal:	NW 30-49-24-W4M
	Gross Area:	52.20 ha
	Estimated ER/MR Required:	**3.9 ha**
	Total Shoreline ER:	2.2 ha
	Total MR (10% of GDA):	5.0 ha (GDA of 50.0 ha)
	MR Required for Multiway:	1.7 ha
	Remaining MR on Parcel:	3.3 ha

2.3.3 Industrial Lands Development Guidelines

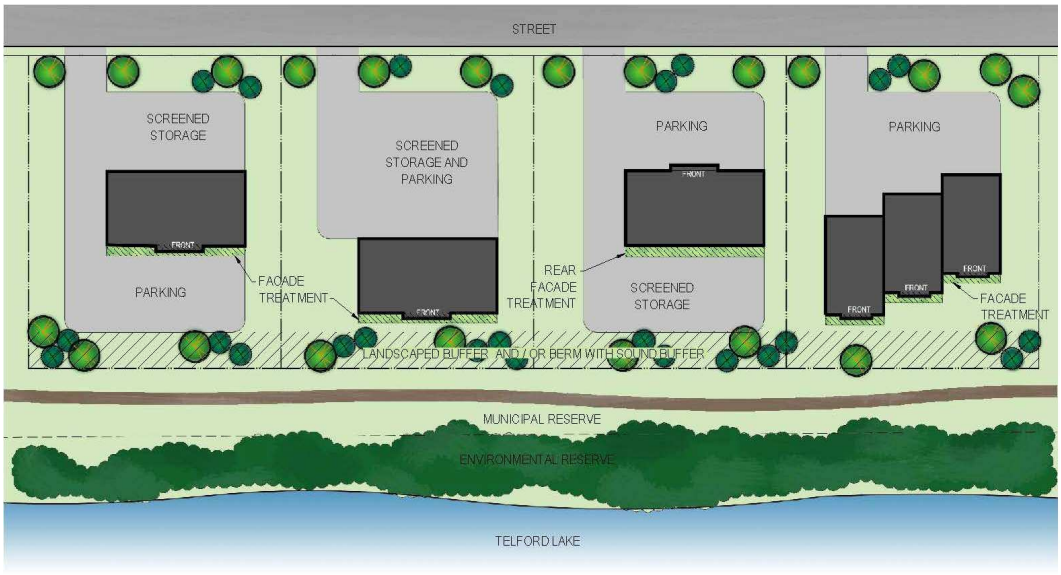
Integral to the long term success of the Master Plan and sustainability of the lake itself is ensuring that the development of the adjacent lands is compatible with the recommended plan. This involves an understanding of the future land use anticipated in the vicinity of the lake, and the establishment of design guidelines that would apply to future development.

There is a need to ensure that future industrial development in proximity to Telford Lake is compatible with the goals of environmental protection and recreational use. In addition, there is a strong desire on the part of the City to ensure that the aesthetics and form of adjacent development be complementary to future park development.
In order to achieve these goals, the following design guidelines are recommended for future industrial development. It is intended that these guidelines be implemented in the future through the enactment of an overlay in the City's Land Use Bylaw.

Proposed Design Guidelines:

- Integrated Design Development: The City should encourage an integrated design process as part of all development projects in the plan area to assist in identifying and developing opportunities for joint efficiency initiatives among developers.

- That the principal building be oriented towards the rear of the lot, facing the multi-way. This will facilitate employee access to the multi-way system, and will improve aesthetics by ensuring that parking and storage areas do not abut the multi-way corridor. Conventional lot development calls for the front yard to face the street, with parking and storage generally confined to the rear of the lot. This guideline encourages the opposite to occur, with the street side of the lot serving the normal rear yard function, and the front yard abutting the multi-way.



- That all parking areas be screened from view from the lake by way of enhanced landscaping. In the event that topographic (and servicing) constraints prevent the principal building from being located to the rear of the lot as noted above, parking areas may be developed on sites abutting the multi-way provided that a high level of landscaping is maintained, and that parking areas are designed to control runoff to predevelopment rates. Encourage common parking areas that

serve multiple businesses, and be accessible to the general public/park users outside of regular business hours.

- Encourage innovation in design standards and consider modified standards that improve ecological performance of municipal and on-site infrastructure. (For example – bio-swales, varied street widths, shared parking facilities).

- That the onsite management of 100% of all stormwater be required: Pursue development of ecologically sustainable practices for stormwater management through the implementation of best management practices to encourage settlement, infiltration and treatment. Locate stormwater management facilities adjacent to the Lake to expand the 30m ER/MR shoreline buffer and the overall recreational corridor.

- That the construction of outdoor storage areas be discouraged on sites abutting the multi-way. In the interests of maintaining aesthetic appeal of lands in proximity to the park system, storage areas are to be confined to the street side of the lot wherever possible. If not possible due to site constraints, a high level of landscaping and fencing will be encouraged.

- That façade treatment be enhanced on the side of the building facing Telford Lake. In order to emphasize overall aesthetics of the corridor, façade treatments needs to be focused on that side of the building that faces the multi-way.

- That on-site landscaping be concentrated on that portion of the lot abutting the multi-way. This measure will enhance the overall aesthetic of the corridor by integrating on-site landscaping with that of the corridor itself.

- To develop a diversity of parcel sizes to attract a variety of business types to increase potential for business interactivity to reduce waste and to facilitate cooperation between businesses by supporting the design and use of shared spaces, facilities, resources and infrastructure.

- To encourage alternative energy development strategies for industrial development.

2.4 Telford Lake as a Paddling Centre

To meet the needs of the study with respect to establishing a vision for expanding the paddling activities on Telford Lake, the landscape architectural firm of LandInc was included on the design team to provide their expertise in paddling venue assessment and design. The following is a summary of the assessment of the current conditions and the development and marketing potential of Telford Lake as a paddling centre for western Canada.

2.4.1 The Telford Lake Experience and Conditions

Through consultation with the Telford Lake Training Centre Society (TLATCS), the following vision for a Paddling Centre on Telford Lake was developed:

> *Vision: "With the implementation of the land and water plans a dynamic, a new centre of excellence will be established in Alberta and the Prairie Provinces. For local user's new recreation and competitive sport opportunities will be available*

for high school students and adults. The integration of the paddling centre with the Lede Park and Telford Lake facilities provides athletes with a broad range of sport activities that will encourage cross-training and fitness development. The City of Leduc will have a truly unique and impressive sport and recreation venue unequalled in Canada."

The beauty of the natural environment surrounding the Telford Lake adds to the appeal of the lake as a paddling facility. Many of the users will be on the water either early in the morning or in the evening. For athletes on the water the experience of the sunrise and the sunset over a calm lake is awe inspiring. People have often commented on the serenity that this experience brings to their lives. The integration of the natural environment with the flat-water centre facilities will create a unique and memorable sense of place.

Telford Lake has two natural advantages. The first is the relative constancy of the water level height. This uniform level provides easy access to the docks with minimum ramp adjustment requirements. The second advantage is the lack of current in the lake. This condition creates virtually uniform conditions for every racing lane, an important consideration when hosting regattas.

There are two constraints to the full development of the paddling centre, namely, water depth and aquatic vegetation. The lake depth is an average of 1.5m and International standards suggest a uniform depth of 3m for the entire course. A significant amount of dredging will be required to meet this standard and a comprehensive environmental assessment will be required to obtain the necessary agency approvals. The low water depth contributes to higher lake temperatures which often can result in extensive aquatic vegetation. This condition can provide safety hazards for small boats with single or double athletes as oars/paddles can be caught in the grasses and disrupt the balance of the boats resulting in capsizing. The grasses can also affect race results as the fins of the shells can collect grasses and slow the hull speed of the boats. Currently, the grass is cut as required; however, this is maintenance intensive and is an ongoing maintenance issue for the City. Dredging to the 3m depth would virtually eliminate this problem.

2.4.2 Paddling Centre Marketing Potential

The City of Leduc has the unique distinction of having the only lake in the Prairie Provinces capable of accommodating a 2000m race course. It has the market potential of attracting competitive high school, university and masters regattas at provincial, national and international levels. The equialents in Canada are the Royal Canadian Henley rowing course in St. Catharine's, Ontario and the Niagara Flat-water Centre in Welland, Ontario. Other cities have hosted world championships on 1000m courses such as the World Championship canoeing event held on Lake Banook in Dartmouth, NS in August 2009. The Olympic Basin in Montreal has hosted several major championships, but lacks

surrounding support facilities and often experiences severe weather conditions that affect the quality of racing.

Telford Lake, in contrast, has a vibrant surrounding community, a lake that is integrated into the community fabric and an orientation and physical form that provides optimal racing conditions. There is also a strong volunteer support base that can rely on students, parents, citizens and athletes from Leduc, Edmonton and the University of Alberta. This reality alone provides a significant base for hosting regattas as there is a substantial amount of work required to pre-plan, administer, implement and de-commission the site.

In addition to the proposed new infrastructure, the city is easily accessible because of its location to the Edmonton International Airport and the QEII Highway. This factor combined with the tourism support infrastructure that exist including hotels, restaurants, shops and medical support facilities make the Telford Lake paddling venue very significant as a regional, national and international centre of excellence. The City of Leduc has the potential to develop a sports marketing programme that will support the local clubs while attracting tourism investment to the city.

A marketing campaign could target the Prairie Provinces, British Columbia, the American prairie states and northwestern states by hosting regional and international regattas on a yearly basis for all types of paddling. The Canadian Dragon Boat Championship and the Canadian Masters Rowing Championships is an example of another event that would be ideally suited for Telford Lake. The lake already has a busy regatta and event schedule with all boat classes participating throughout the summer. The addition of the larger regattas will serve to enhance the profile and image of Telford Lake thereby establishing a new centre of excellence for western Canada.

2.5 Opportunities and Constraints Summary

Based on the background research and assessment, the design team identified a number of opportunities and constraints to recreational development and environmental protection and enhancement of Telford Lake and the lands surrounding it. The following is a summary of the key opportunities and constraints and the relationship to proposed development (Figure 2.2):

- ***Noise Exposure Forecasts (NEF contours)*** – because of Leduc's proximity to the Edmonton International Airport, its land use planning must correspond to Transport Canada NEF standards. New residential developments are restricted within the 30 NEF contour and a large portion of Telford Lake falls within this boundary. As a result, much of the undeveloped land around the lake is restricted to industrial land uses and suitable for use as recreational areas.

- ***Land Acquisition*** – The City of Leduc does not own the majority of the lakeshore lands. In order to develop a strategy that protects the lake-fringe area

and creates a continuous multi-use trail, land acquisition strategies must be developed. In order for the process to be successful, the City will need to work together with land owners to create a mutually beneficial situation.

- ***Existing Neighbourhoods*** – The northwest area of Telford Lake is home to the North Telford community. In order to make a multi-use trail connection around the lake, the trail will need to pass through this neighbourhood. The proposed alignment will need to be sensitive to adjacent properties. As well, residents in both North and South Telford Neighbourhoods have traffic and parking concerns due to the current use of existing recreational facilities (Lede Park) and the potential for increased use with expanded facilities and amenities. The Master Plan will need to incorporate strategies for mitigating vehicular issues.

- ***Wildlife Habitat and Rare Plants*** –Telford Lake is an important area for waterfowl production. Lake fringe areas, especially those located on the east end of the lake, are ecologically sensitive areas that need environmental protection. The Sawridge Lands Pond, though man-made, is home to a provincially designated rare plant species, Ricciocarpos natans (See Appendix A). Development in this area should be designed to minimized impacts on the pond and the extensive habitat provided by the existing forest and shoreline of the Lake.

- ***Stormwater Management*** – Currently, stormwater from neighbouring developments is channelled into the Telford Lake. Sediment from this run-off filters into the lake reducing quality, depth, and clarity. The wetland in Telford House Park mitigates some of this impact, but may need to be expanded to increase its effectiveness. New developments around the lake, such as new impervious parking areas for the Lede Park, may need to be mitigated through the design of new open spaces.

- ***Lede Park Partnership*** – The Lede Park Master Plan may provide opportunities to share facilities and infrastructure with the Telford Lake Master Plan areas. Because of the adjacent nature of these two projects, it will be important to maintain an integrated approach to the implementation of the two plans.

- ***Soil Remediation*** – Because of former land uses, some areas of the site may need to have a thorough environmental investigation to determine any contamination. The site of most concern is the former sewage lagoon areas, which were remediated in the late eighties/early nineties. Depending on the success of the remediation process, these areas may still have building restrictions or require further remediation strategies. A small, former snow dump site near the public services shop may also have damaged soils (high salts) that require remediation

- ***Terrestrial Habitat*** – There are a handful of mature aspen woodlots surrounding the lake. These areas are important habitat for terrestrial and avian creatures. Strategies to protect these forests should be included in the overall environmental vision of the site.

- ***Regional Trail Connections*** – There are many wonderful natural areas, such as Saunder's Lake, in close proximity to Telford Lake. There are opportunities to provide for future regional trail connections into new developments and surrounding areas.

Location of rare plant species (Liverwort)

Current off-road vehicle use and erosion concerns

Existing trails and terrain opportunities for developed mountain bike trails

Shoreline projection removal required for paddling course

Forest of ecological interest

Dredging required for Paddling Course

Protection of shoreline habitat and lake water quality

N.E.F contours limits residential and commercial developments, but provides opportunity for recreational development

Important bird habitat and nesting Sites in East End

Potential for future regional trail connection

Western trail connection may cause concern in North Telford

Current stormwater outfall into Lake generates sediment, which is cause for concern

Lede Park Expansion shared infrastructure

Nearby Cultural Village

Potential traffic / parking concerns to be addressed

Former sewage lagoon site building limitations

Potential Soil remediation concerns

Shoreline modifications for Paddling Venue

Forests of ecological interest

Need acquisition strategy for private land required for Telford Lake Trail

Existing weir and consider potential downstream issues

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Telford Lake Master Plan

City of Leduc

Opportunities and Constraints

Figure 2.2

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- ***Sawridge Lands*** – affectionately known as "Whiskey Hill", this parcel of land contains a wide range of distinct ecological characteristics and topographical features due to its former land use as a gravel pit operation. This has been informally capitalized on by both mountain bike and off-road vehicle users. As a result, there are erosion and safety concerns throughout the Sawridge lands.

- ***Dredging and Shoreline Modification*** – As indicated, dredging of the Lake to a depth of 3.0m is seen as a requirement to allow the paddling venue to achieve the defined vision. Extensive studies and approvals are required before any dredging occurs. In addition, two locations for shoreline modification have been identified to support the paddling venue and paddling course design.

- ***Cultural Village*** – A Master Plan for this site is currently being completed and should be integrated with this plan. There is strong connections in terms of physical futures, programming and common space that must be considered.

- ***Landfill*** – The existing landfill to the east of Telford Lake may expand in the future and could have impacts on the recreational development and enjoyment of trail users.

3.0 Program and Concept Plans

3.1 Development Program

The following program statement serves as the guide for the preparation of the concept plan options and the final concept plan for the future development of Telford Lake. The program is a descriptive list of the potential features and outcomes that are envisioned for a development project. The development program should be based on an overall vision, should respond to site opportunities and constraints, and should reflect the experiential and physical needs of current and future users. The final program description provided below was prepared by the design team with input from the City project team and the Steering Committee. Stakeholders provided input and direction through two evening workshops.

1. Multiway

- Multiway around entire lake
- Future link from Telford Lake multiway to Saunders Lake trails
- Trail links to Telford House Park, William F. Lede Park, Cultural Village, North and South Telford
- Trail loops within new park areas
- Mountain Bike and Cross country ski trails
- Walking and interpretive trails

2. Environment

- Preserve all existing shoreline and upland vegetation around the lake including all existing tree stands and significant forest on Sawridge lands
- Improve nature viewing and interpretation opportunities though development of interpretive viewpoints and interpretive signage
- Provide environmental educational programming including development of a interpretive learning centre designed for school curriculum programming

- Increase the number of park benches and rest stops
- Expand extent of natural forest and wildlife habitat and corridors through naturalization (tree and shrub planting)
- Landscape – enhance key locations within park spaces with ornamental landscaping (trees, shrubs and annual/perennial beds)

3. All Season Recreation

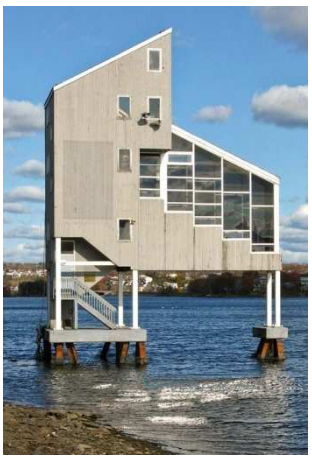
- Enhance recreational opportunities for all seasons through the provision of facilities, amenities and programs
- Picnic – individual picnic sites - some with camp stoves
- Day-use area with bookable picnic shelters
- Playground - regional scale and sports courts

- Define a location for a skating rink on the lake – provide support amenities
- Snowmobile – provide a staging area for winter lake access.
- Sledding hill – designated sledding hill
- Off-Leash Dog Park – maintain size but reorient to facilitate other park development and add amenities such as shelter, fenced training area
- Central park area with open space for passive recreational activities
- Festival lawn with stage for large scale civic and cultural events
- Community Garden – relocate and enhance to include pathways, parking, storage/shelter/washroom, and water line with multiple service points.

4. Paddling

The development of the plans for the paddling centre recognizes the requirement to accommodate daily uses by the various club groups while planning for national and provincial levels of regattas. The Master Plan must recognize the different program requirements for each event, many of which to be provided by the partner groups hosting the events. The requirements for a 2000m rowing event are as follows:

- Daily Use – Land: Boathouse, Washrooms, Water temperature and weather monitoring, Course map, First aid station, Car parking (60), Trailer parking (2).
- Daily Use – Water: Docks, Safety boats, 2000mm, 3-lane minimum buoyed course for training.
- Event Use – Land: Boathouse, first aid station, event tents, meeting rooms, warm up area, water temperature and weather monitoring, course map, finish line/judging tower/video/timing equipment, final results posting area, grandstands (3000 people), awards ceremony area, trailer parking (26 clubs), car parking (500), bus parking (5).



- Event Use – Water: Competition Docks, Officials boats/safety boats dock, 6-8 buoyed lanes with FISA standard buoy spacing/colours, official starting platform, designated warm up area, and boat storage.

5. Park Facilities

- All buildings to be designed as “green” buildings incorporating LEED principles for energy performance, materials, resource use and durability
- Public washrooms – small, stand alone, composting washroom buildings at key locations around the lake
- Park Pavilion - with washrooms, lockers, concession – serviced via existing Public Works Building.

- Public Works Building – convert to clubhouse facility serving all user groups for meetings, storage, training
- Festival Stage – covered stage structure with service and power infrastructure
- City Operations facilities – remove existing public works yard and eco-station
- Paddling Venue – Boathouse – with multipurpose component – washrooms, meeting rooms, warm up space
- Community Gazebo – for small scale performances related to Cultural Village
- Community Garden – building for storage shed, shelter and washroom
- Mobile concession services during peak utilization periods

6. Lake

- Protect shoreline vegetation
- Dredging – deepen lake to facilitate paddling and to improve water quality (requires studies and approvals).
- Improve stormwater management discharge through settlement facilities and infiltration prior to entering the lake
- Wheelchair access such as wheelchair ramps for each dock onto the water
- Multiple access points – viewpoints, boardwalks, birdblinds, canoe/kayak launch, winter access for snowmobiles and ice racing

7. Infrastructure

- Roads – close west end of existing park road eliminating access from South Telford except for service and emergency access. Develop a new main access road from Black Gold Drive. Provide other secondary access roads into the park and to the various park amenities.
- Parking – provide small satellite parking lots at key location to provide parking in support of various key facilities and amenities. Where possible situate parking to service multiple facilities/amenities. Major Lede Park parking lot will provide parking for some Telford Lake facilities.
- Utility Services – water and sanitary services to Pavilion and Boathouse; water service to Community Garden
- Stormwater Management – provision of wetlands and other stormwater best management practices to reduce the rate/quantity and improve the quality of stormwater discharge into the lake. Define a location for a skating rink on the lake – provide support amenities

3.2 Concept Plan Options

In July 2009, three Initial Concept Plans were prepared for discussion with the City and Stakeholder groups. A workshop was held providing participants the opportunity to evaluate and rate components of the plans. Each option included the same general set

of programs elements with differing spatial arrangements. Some of the elements that were generally the same in each concept included the multiway around the lake, the location of the paddling venue (see below), the development of a major community park west of Lede Park and the development of the Sawridge Lands as a passive, trail based recreational and nature appreciation area.

The following describes the key differences between the three concept plan options which are illustrated in Appendix B.

1. **Concept Option 1**: some of the key features of Concept 1 included the location of the community gardens along the future Lede Park access road and parking and a road into the proposed community park that was divided in the centre requiring access from the west and the east into two main parking lots.

2. **Concept Option 2**: this concept featured a new park road that connected the Lede Park road to the proposed Lions Park road. This concept also introduced the idea of developing wetlands and other stormwater management features to reduce harmful discharge into Telford Lake.

3. **Concept Option 3**: in this concept there was no new park road proposed leaving the entire park area west of Lede accessible by trail. This maximized park space but limited ease of access. This concept also featured a reduced community garden but an enlarged off-leash dog park.

Three concepts were also developed for the paddling venue based on the same program for daily use and event use, but in three distinct locations (See Appendix B figures B4 to B6).

1. **Concept A**: the paddling venue was located on the same site that it is currently with the key benefits related to the proximity to finish line and the west end of the lake, as well as access and parking. The real constraint to this site related to event (regatta) programming and the ability to have enough space to for all of the required facilities and amenities while maintaining proper controls and movement of competitors.

2. **Concept B**: directly east of the current site on the community garden lands. The key benefit to this site is related to the space available to accommodate both daily and event programming while creating open space for community use on the existing site. The biggest constraint to this site is that it would require some fairly significant shoreline modification. Based on careful review by the stakeholders and the design team, this site was selected as the preferred site.

3. **Concept C**: this site was located at roughly the centre of the lake along the south shore. One of the key benefits to this site was the location and visibility at the terminus of the future Lede Park access road. This was seen as a potential for raising the awareness of the paddling sports in Leduc. While this site was seen to work well for daily used, there were many identified constraints related to event use that were considered to be too challenging to overcome .

4.0 Master Plan

4.1 Overall Master Plan

Building on the feedback from the stakeholders and the Steering Committee, a preferred concept plan was prepared utilizing components and design ideas from all three concept options. The preferred concept was presented to the Steering Committee and through a workshop exercise the concept was refined. Based on the direction provided by the Committee, the design team prepared the preliminary master plan.

A Public open house was held in October 2009 to present the preliminary master plan. Static displays and two formal presentations were used to present the information and members of the design team, City staff and Steering Committee members were in attendance to answer questions. Overall response to the master plan was very good and there was strong support for the overall plan and the many development components. A number of very specific suggestions were received through the exit survey as well as directly recorded by the staff in attendance. Where possible the suggested changes have been reflected in the final Master Plan. See Appendix C for the summary of Open House feedback.

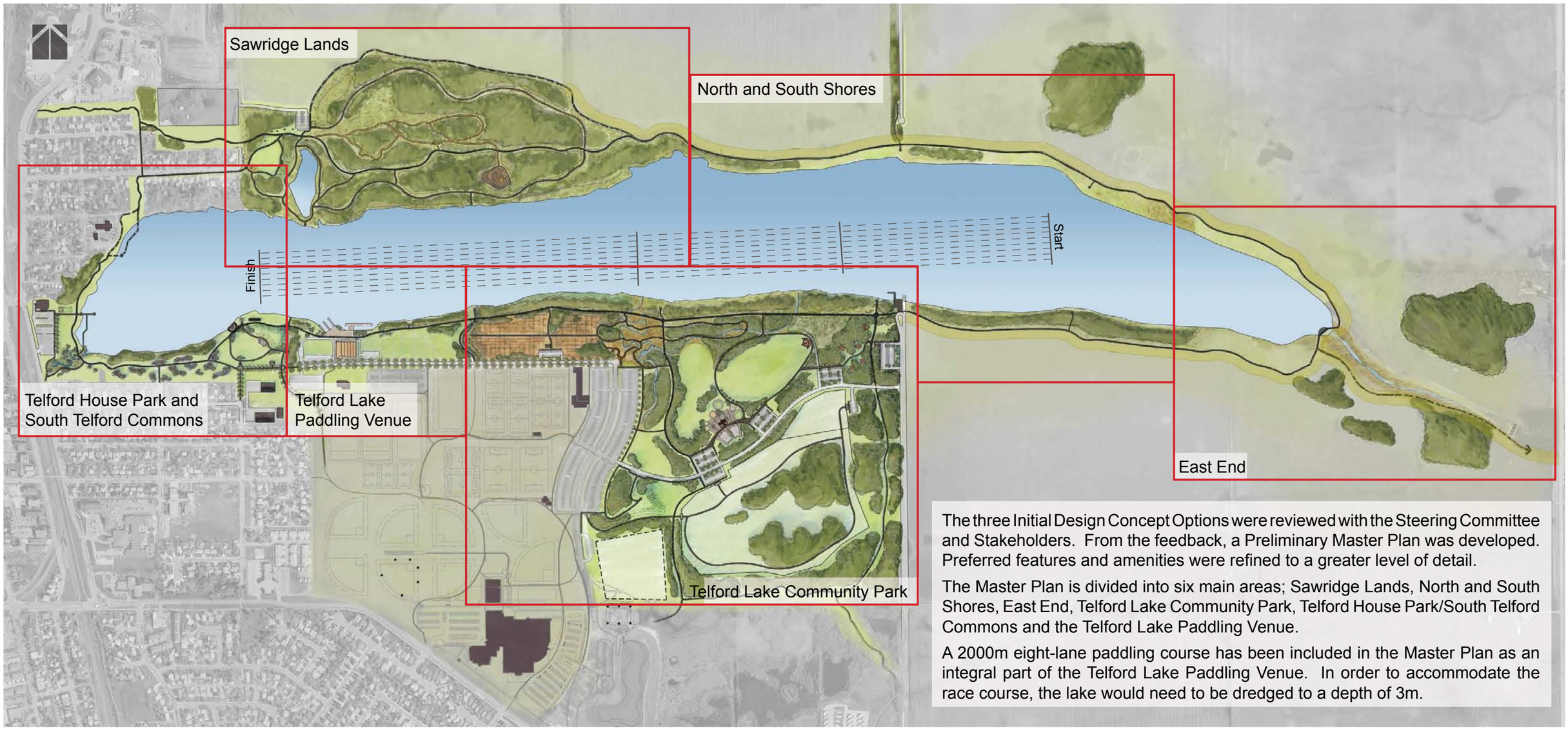
As illustrated on Figure 4.1, the Master Plan defines the development of approximately 120 ha (296 acres) of designated parks and open space. The plan area was ultimately divided into six distinct development zones identified below and described in detail in the following sections and illustrated with character images and on Figures 4.2-4.8.

- Sawridge Lands
- North and South Shores
- East End
- Telford Community Park
- South Telford and Telford House Park
- Telford Lake Paddling Centre

4.2 Sawridge Lands

The Sawridge Lands area is a privately owned parcel that contains a large tract of relatively undisturbed forest covered by a network of informal trails left over from previous gravel extraction operations. These lands provide the perfect setting for a range of informal recreational activities focused on trail use and nature appreciation. As illustrated on Figure 4.2, the following are the key recommended program features of this area:

- Telford Lake Trail (TLT) – a key feature of each of the zones is the provision of a 3.0m wide, asphalt multi-use trail (multiway) that will provide a 7.0 km loop around Telford Lake. Approximately 850m of TLT is located in this zone. Initially the TLT could be developed as a compacted granular trail until the entire trail around the lake is in place, at which time an asphalt surface could be constructed. Amenities along the TLT include rest nodes every 0.75km and interpretive viewpoints at regular intervals. Two options are proposed for the provision of the TLT from Telford House Park to the Sawridge Lands. Each option requires



The three Initial Design Concept Options were reviewed with the Steering Committee and Stakeholders. From the feedback, a Preliminary Master Plan was developed. Preferred features and amenities were refined to a greater level of detail.

The Master Plan is divided into six main areas; Sawridge Lands, North and South Shores, East End, Telford Lake Community Park, Telford House Park/South Telford Commons and the Telford Lake Paddling Venue.

A 2000m eight-lane paddling course has been included in the Master Plan as an integral part of the Telford Lake Paddling Venue. In order to accommodate the race course, the lake would need to be dredged to a depth of 3m.

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Telford Lake Master Plan
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Overall Master Plan
Master Plan Zones

Figure 4.1
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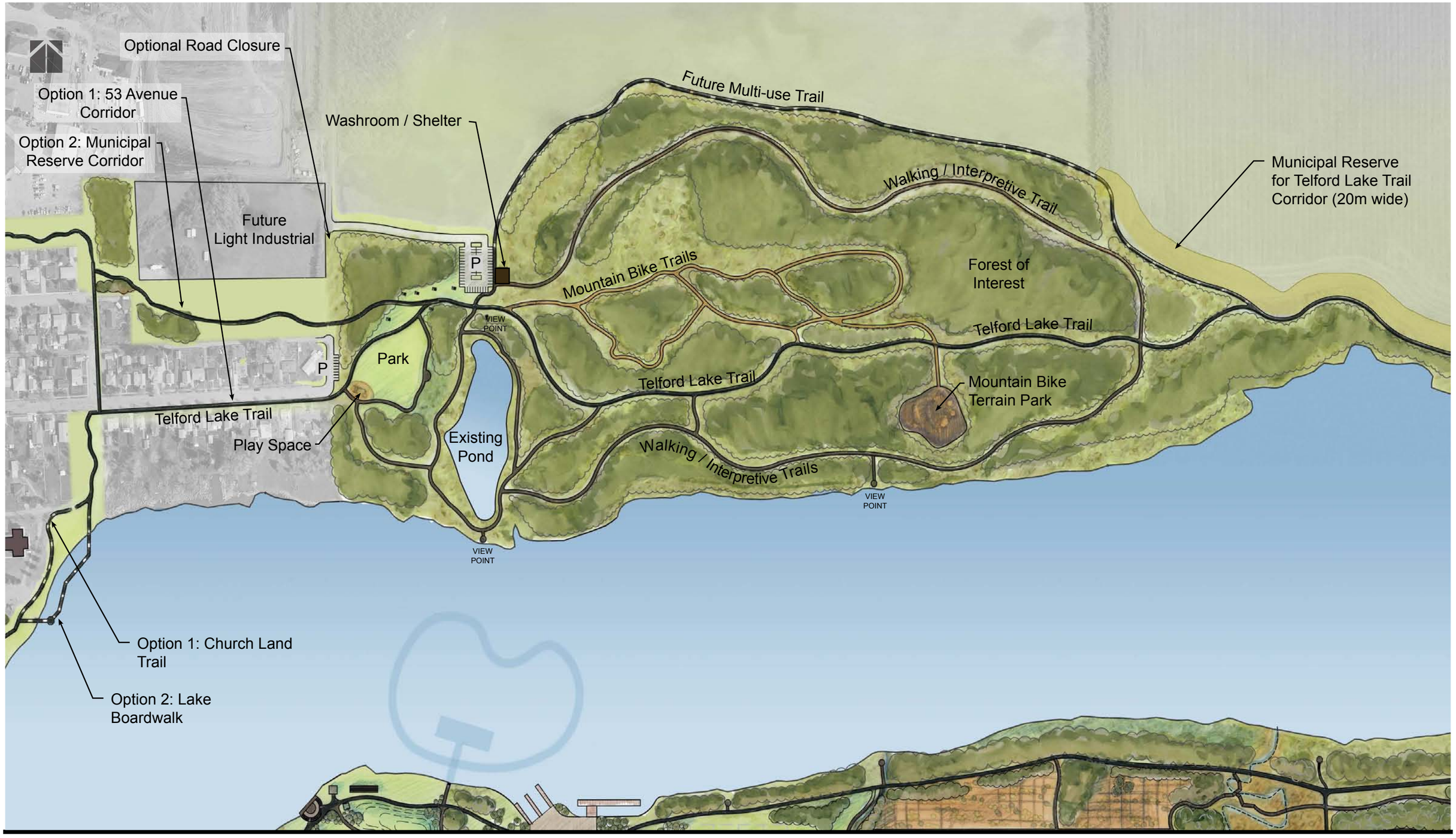

Telford Lake Master Plan

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Sawridge Lands

Figure 4.2

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discussions with land owners and detailed design for evaluating impacts and to determine the most suitable option.

- Mountain Bike and cross country ski trails – 3.5km of granular/dirt trails will be developed using existing corridors, grades, terrain features, and crossing through a range of environments. Directional signage, mapping, erosion controls, physical barriers to protect environmental features, and restoration of disturbed areas will be key aspects of the development program

- Mountain Bike Terrain Park – an existing open space location with a huge variety of existing terrain features provides a perfect setting for the design and development of a terrain park that provides riders with an opportunity to improve both trail and free-riding skills. A professional 'mountain bike park' design consultant should be retained to design this facility in consultation with future users.

- Walking / Interpretive Trails – 3.4 km of granular or wood chip trails (1.5m wide) that travel through a range of distinct ecological areas: wetland, pond-edge, lake-edge, mature forest, and meadow. With rest nodes, interpretive nodes and interpretive viewpoints, these trails will be used by individuals and families to enjoy and learn about nature. The variety of environmental features makes this area ideally suited to be the home for a curriculum based environmental education program for grade 4-5 students.

- Access Road and Parking – a gravel road will provide access to a central parking area (30 cars). Controls such as entrance gates, post-rail fence and bollards will be used to restrict off-road vehicles from entering natural areas. Future plans include closure of the road between the park access road and 52 Avenue to force vehicles to access the site from the industrial area, rather than from the North Telford neighbourhood.

- Washroom and Shelter – a washroom and warm-up shelter will be located adjacent to the parking lot to meet the needs of users throughout the year. The washroom building will be a prefabricated "green" building with no service connections utilizing compositing toilets and solar power.

- Entry Node – an entry node will be created where the Telford Lake Trail (multiway around the lake) and the parking lot meet in the site. This node will provide a main park map, trail maps, and eco-interpretive storylines and group staging for future educational programming.

- Day-use amenities – picnic sites, benches, trash/recycling receptacles and interpretive viewpoints will provide a range of opportunities and settings for individuals, families and groups to take advantage of the scenic location

- A community/neighbourhood park space will be developed at the very west end of the site to provide amenities primarily for the North Telford residents. Open space, picnic tables, picnic shelter and a nature-themed playground will be key features of this park.

4.3 North and South Shore

The focus for both the north and south shore of Telford Lake is the protection of the shoreline and the development of the Telford Lake Trail. As illustrated on Figure 4.3, the following are the key recommended program features of this area:

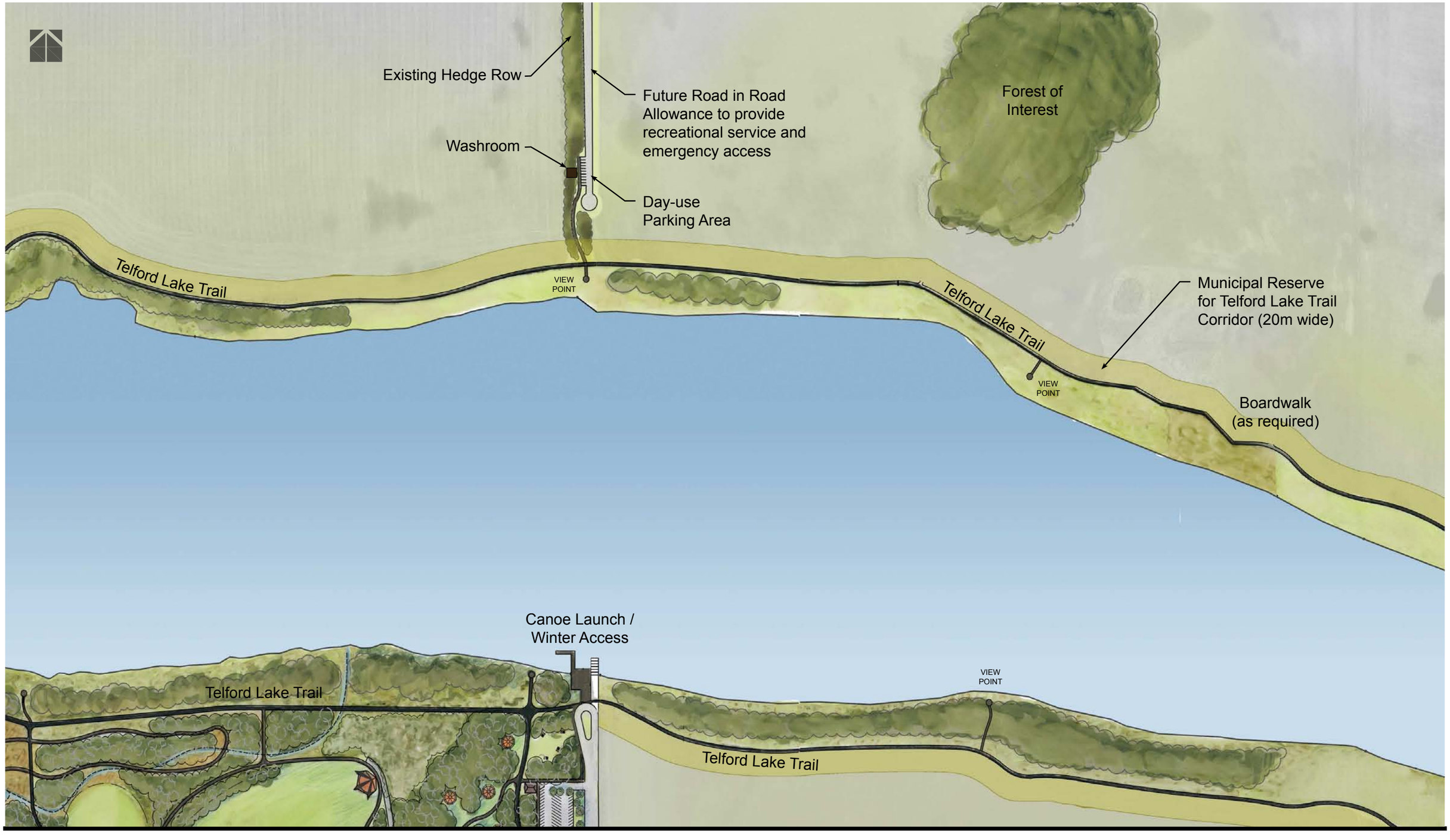
- Maintain and protect lake fringe vegetation and wildlife habitat
- Telford Lake Trail (TLT) – the provision of a 3.0m wide, asphalt multi-use trail (multiway) around the lake. Approximately 1700m of TLT is located within the north and south shore zones. Trail rest nodes and interpretive viewpoints would be part of the TLT development.
- North Shore Access Road and Parking – as development occurs, the existing road allowance for Range Road 250 should be utilized to provide an access road to the north side of the lake. This road, which could also be provided as part of future industrial development would allow for service and emergency access as well as providing a secondary (day-use) parking area with washroom for trail users.

4.4 East End

The focus for the east end of Telford Lake is the protection of the shoreline and the development of the Telford Lake Trail. As illustrated on Figure 4.4, the following are the key recommended program features of this area:

- Maintain and protect lake fringe vegetation and wildlife habitat. Maintain and protect the existing Ducks Unlimited weir for management of the lake.
- Telford Lake Trail (TLT) – the provision of a 3.0m wide, asphalt multi-use trail (multiway) around the lake. Approximately 600m of TLT is located within the east end zone. Trail rest nodes and interpretive viewpoints would be part of the TLT development.

- Boardwalk and Bird Blind – Use a boardwalk in the marsh areas and to cross the creek feeding into Saunders Lake. A bird blind would be developed as a key interpretive feature for bird, wildlife and waterfowl watching. This feature will also frame views down the length of the lake.
- Provide opportunities to development a future trail that will link Telford Lake into a future regional trail system and Saunder's Lake.



Telford Lake Master Plan
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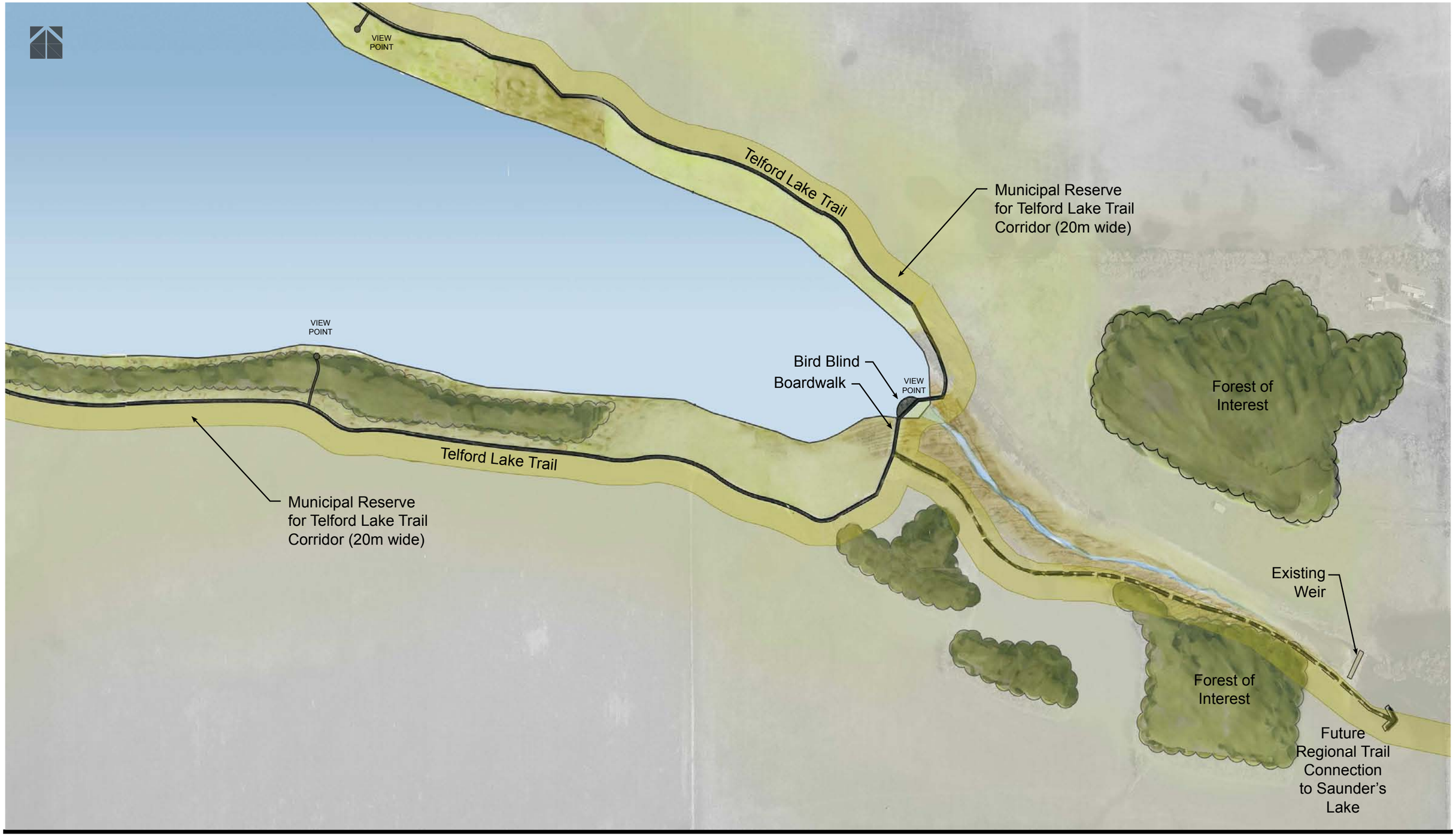
North and South Shores

Figure 4.3
March 2010



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Telford Lake Master Plan

City of Leduc

East End

Figure 4.4

March 2010

4.5 Telford Community Park

Telford Community Park will be Leduc's 'central park' with a wide range of activities and open spaces to meet the recreational and social needs of individuals, families, groups, and the entire community for civic celebrations and events. As illustrated on Figure 4.5, the following are the key recommended program features of this area:

- Central Pavilion and Play Space – a central park pavilion with washroom, gathering area, meeting area and concession will serve as the centre of year-round community events. The pavilion is surrounded by a plaza, large scale play space featuring the latest in play components for all ages and a range of court sports.

- Festival Lawn – a large, modestly sloped lawn space designed for large scale community gatherings, such as festivals and concerts, with an attractive canopy over a concrete plaza to serve as a location for a performance stage. Support infrastructure would include a service access and power provisions for a sound system and stage lighting.

- Lakeside Day-Use Area and Launch – with the extension of RR250, a canoe and kayak launch would be developed to provide a year-round public access to the lake. Day-use amenities would include bookable group picnic sites, parking lot, and a washroom. This site would also serve as a winter day-use area with access to the lake for snowmobile use and ice-racing events.

- Telford Lake Trail (TLT) – through the Park, the existing multiway parallel to the lake would be widened to 4.0m wide, to service growing use in the future. Trail rest nodes every 500m. A series of loop trails (2.0m wide) will provide a range of options for walking, jogging or strolling and will connect the various open spaces, facilities and parking lots.

- Community Gardens – Create a new community gardens space with pathways, water services and a washroom/storage shed/shelter building. A total of 130 garden plots would be developed.

- Open Space – a series of interconnected open spaces for a variety of active and passive uses and group activities.

- Sledding Hill – already in development as part of the Lede Park master plan, a large scale sledding hill will provide a great winter recreation and community gathering area.

- Dog Park – Reorient the Dog Park by moving open space area from west end to a new entry along the proposed park road or to provide for future facility development (high school). Provide a separately fenced dog training area as an extension of the dog park.

- Interpretive Wetland – an interpretive stormwater wetland that manages runoff from the site and the proposed Lede Park parking lot and provides and an significant environmental education and interpretation site within the park.

- Roads and Parking – A new primary park road will be constructed from Black Gold Drive to existing park road behind LRC as per Lede Park Master Plan. Extend Range Road 250 from the entrance to Lions Campground to the lake. Provide east west road connecting main park road to Lions Park Road to provide access to future Community park features. Construct an access to a small parking lot at the north side of the lake along Lions Park Road.

Telford Lake Master Plan
City of Leduc

Telford Lake Community Park

Figure 4.5
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4.6 Telford House Park and South Telford Commons

With the relocation of the paddling venue to the east (see Section 4.7), the existing site can be redeveloped as a community park site on the shore of the lake. Strongly connected, Telford House Park and the proposed South Telford Commons will provide residents and visitors with an ideal spot for an evening stroll, some family activities, a small cultural event and a place to enjoy the sunset. As illustrated on Figure 4.6, the following are the recommended program features of this area:

- Telford Lake Trail (TLT) – through the commons and around to Telford House the existing multiway parallel to the lake would be widened to 4.0m wide, to service growing use in the future. Trail rest nodes. A trail connection from Telford House Park to the Sawridge Lands is required to complete the multiway around the lake. Two options have been proposed to provide access along the shoreline, past the Church and through the KIN Park MR. Both options require development of at lease some boardwalk which can be a complimentary development to the existing boardwalk at Telford House Park. North of Kin Park, the TLT will either need to be provided along 52 Avenue or some land acquisition will be required east of Arthur Moberg Park.

- Telford House Park – create an expanded “front” lawn area adjacent to the building and the lake for designated seniors outdoor activities. Provide expanded parking (20 stalls) to increase access to the facility and the trail system.

- Close Park Road – close the existing park road at the Cultural Village entrance and at the new Paddling Venue entrance to eliminate traffic through the South Telford Neighbourhood. Provide a wide pedestrian walk and gates for service/emergency access.

- Stormwater Management – improve stormwater runoff into the lake by creating a stormwater wetland to slow runoff and reduce sedimentation.

- Volunteer Gardens – build on the City of Leduc volunteer recognition program by developing extensive planting beds for ornamental gardens to recognize volunteer work in the community.

- South Telford Commons – an attractive waterfront plaza and green space for social gathering, passive activities, cultural performances and sunset watching. The commons will also serve as an important open space during paddling events with a berm and bleachers for veiwing, a judging tower and open space for a variety for tents (vendors, shelter, food and drink etc.)

4.7 Telford Lake Paddling Venue

As described in Section 2.4, Telford Lake has the potential to become a centre of excellence in western Canada for all paddling disciplines. Working in consultation with the Telford Lake Alberta Training Centre Society, three initial concepts for the paddling venue were developed (Appendix B) and a detailed program of facilities and amenities was prepared to meet the daily and event needs of all of the paddling groups. The following sections and associated plans and graphics outline the key site development components, the overall lake and shoreline modification requirements, the program vision and the proposed boathouse development.

4.7.1 Site Development

As illustrated on Figure 4.7, the following are the key site development components for the paddling venue:

- Boathouse – see Section 4.8.4
- Apron and Docks – a large gravel apron providing a location for preparation of boats and access to the arrival and departure docks. The docks would be floating docks and would range from 20m to 73m long by 3-5m wide.
- Telford Lake Trail (TLT) – across the apron and 4.0m wide asphalt trail would provide access through the paddling venue on a daily basis and then a bypass trail along the road would provide access around the paddling venue during events.
- Storage Yard and Parking – a fenced grass or gravel yard with area for storage of equipment, trailers, and fuel. The extent of the enclosure would need to be determined based on the needs of the various clubs at the time of development. Initially a 40-50 stall parking lot would be developed to meet the daily needs of the facility. There is space provided for expansion of the yard and parking over time.
- Event Trailer Parking – to the east of the boathouse a large area will be set aside for trailer parking (26 trailers) for events. This will be an open grass area most of the time but will be available for paddling events as well as other sports tournaments taking place in Lede Park.

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Telford Lake Master Plan
City of Leduc

Telford House Park and South Telford Commons

Figure 4.6
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LANDinc

Telford Lake Master Plan

City of Leduc

Telford Lake Paddling Venue

Figure 4.7

March 2010

4.7.2 Boathouse

The programming for the boathouse considers the existing needs of the various user groups and their projections for future expansion. An evaluation of the different racing boat sizes and weights indicates that the boathouse planning must allow for storage flexibility. Rowing shells can be stacked up to eight racks high whereas dragon boats and outriggers have limited ability to be stored in this manner. There is also the consideration that some boats will be left outdoors all summer thereby requiring storage for the winter only. A review of the individual boat classes and their expansion needs indicates that a boathouse with four boat bays is required to meet long term needs. In addition, there is a need for a boat repair bay which is proposed to have the same dimensions as the boat bays.

Boathouses are very large buildings with strong massing. Consideration should be given to variations in the roof line and the articulation of the walls through the design of windows and doors. Natural light should be brought into the boat house through roof light wells, clerestory strips and the use of windows on the elevations. All boat bays and the second floor rooms should also be provided with artificial lighting. Boathouses can be places of high humidity and require efficient ventilation using natural systems.

The concept for the boathouse is illustrated on Figure 4.8, with the key components described as follows:

- **Main Boathouse** (Layout) – Four boat storage bays (920sq.m/9900 sq.ft) and one repair bay are recommended to meet the anticipated long term program vision. A minimum width of 25' column centre to centre is desirable which will allow for an aisle space of approx. 21'. In consideration of the optimum length of the boathouse, having the ability to store eight and four oared shells on the same rack alignment is very efficient and results in a length dimension of 120'. For convenience and safety reasons it is recommended that rowing storage racks not be higher than four to five tiers. This space will also be adequate to store up to six dragon boats side by side or five outrigger canoes. All boat bay doors should have a standard ten foot width with a height of eight feet. Separate pedestrian access doors can be located at each end of the boathouse with a main entrance located centrally on the building. Vertical oar storage is proposed along the front wall of the boathouse.

- **The Telford Lake Paddling Centre** – At the west end of the boathouse is the main Paddling Centre building which is envisioned as a two story facility providing a strong architectural presence and sense of place from all around the west end of Telford Lake. The main floor would include washrooms, change rooms and the coaches office, as well as storage. The second floor would include a Regatta (multiple purpose) room, training area, and washrooms. Every day use and special event regattas have a need for a common room whether it is for team meetings, officials and/or coaches meetings. The space proposed is on the lake side overlooking the regatta course with an outdoor terrace to provide a special vantage point to the finish line. The second floor would also contain a separate weigh-in room. Access to the second floor is provided by two sets of stairs and an elevator located in the entrance tower that is prominently sited on the south east corner of the boathouse and highly visible from the access road ('Regatta Row'). The tower could be a festive place with nautical flags and regatta banners while indicating wind speeds and directions.

- **Coach Boat and Regatta Storage** – Rigging, coach boat, regatta storage area, coaches office (576sq.m or 6200sq.ft.). Currently the clubs own four coach boats

and it can be anticipated that the number of coach boats will at least double in number. It is recommended that separate storage bays be provided for the daily use boats and the pontoon boat. In addition, a separate area for the stowing of regatta equipment is recommended. This would include cables, buoys, starting docks, flags etc. A gasoline storage facility is required on-site in close proximity to the boathouse.

4.7.3 Lake and Shoreline

In order to achieve the vision for developing a paddling centre capable of hosting national events, dredging the center part of the lake bottom will be required to accommodate a more formal paddling venue. Shoreline modification on the north shore to accommodate provide more room for the race course and on the south shore to facilitate the apron and dock developments will also be required.

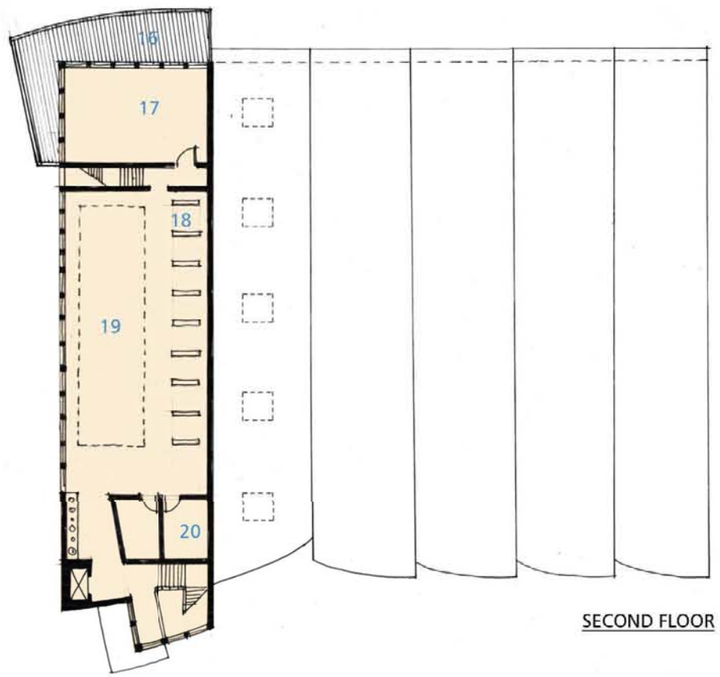
Currently the lake is approximately 1.5 – 2m deep and international standards suggest a uniform depth of 3.0m for the entire course (2000m long x 104 m wide to accommodate an 8-lane course). A significant amount of dredging will be required to meet this standard and a comprehensive environmental assessment will be required to obtain the necessary agency approvals.

As defined in the Biophysical Assessment (Appendix A), further information is required to determine the status of the regional hydrological regime in the Telford Lake area. A detailed hydrological evaluation should be conducted to determine how lake water levels will be impacted by the proposed dredging and how those predicted water levels will impact the ecosystem. If dredging does occur, it should be conducted under low flow conditions (eg. Late fall). Based on the presence of the weir on the east end of the lake, it is expected that over time, water levels will not change from their natural range of variability after dredging the lake and emergent vegetation should not be adversely impacted. A change in lake depth may slightly improve the overwintering potential for coarse fish in the lake and may discourage weed growth in the lake. While there is not any specific data indicating that lake bottom materials are contaminated, release of contaminated materials into the water column during dredging could adversely impact water quality and fish and wildlife habitat.

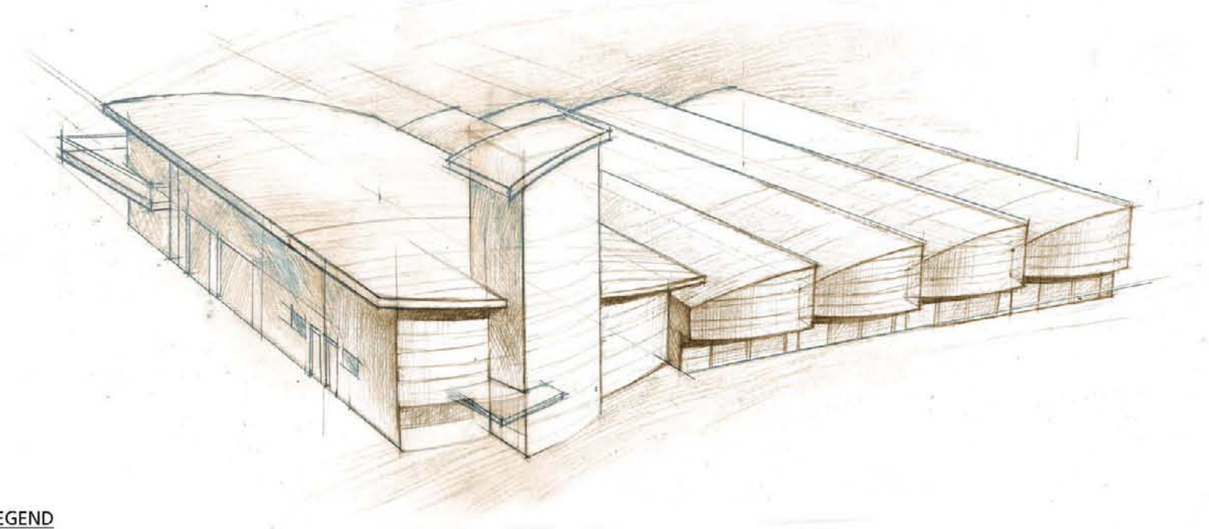
It is recommended that the City undertake a pilot-scale dredging program, prior to initiating any full-scale dredging operations, in order to collect more information that would allow a better understanding of the technical feasibility, economics, and environmental implications of dredging Telford Lake. They should retain the services of an engineering consulting firm to execute a short duration, but high production capacity, sediment dredging and processing operation that would allow for sufficient data to be collected. The consultant will be able to evaluate the technical feasibility of a potential full-scale dredging program and the impacts of dredging, dredging rates, environmental impacts, process and implications for on-site sediment dewatering, and off-site solids disposal constraints.

Prior to any dredging work being undertaken, a number of approvals would be required with each application supported by very specific studies. A number of the approvals would be required under the Canadian Fisheries Act (Department of Fisheries and Oceans, the Navigable Waters Protection Act, the Alberta Water Act and the Alberta Public Lands Act. Dredging has been assessed and approved in other jurisdictions. No unique issues have been identified during this study that would complicate an application for dredging.

GROUND FLOOR



SECOND FLOOR



LEGEND

1.	Boathouse Entrance
2,3,4.	Offices
5,6,7,8.	Boat Bays
9.	Repair (Rigging)
10.	Coaches Office
11,12.	Storage (Pontoon boat, Coach boats)
13,14.	Washrooms / Changerooms
15.	Main Entrance and Elevator
16.	Terrace
17.	Multipurpose (Regatta Officials, Weigh in, Coaches Meetings, General Meetings)
18.	Ergometers
19.	Weight Room
20.	Washrooms
	Winterized Space

5.0 Master Plan Implementation

5.1 Implementation Factors

A number of key factors were considered by the Steering Committee with respect to establishing specific priorities and determining a practical and achievable implementation plan. In determining which of the features and areas proposed in the Master Plan should be developed in the short to medium term, all of the factors outlined below were considered:

- ***Community Priorities*** – based on input received throughout the project and specifically during the stakeholder workshop and public open house, the one clear priority was the development of the multiway around the lake. This was not a surprise as this multiway has been identified in previous documents and during the City's Community Visioning workshops. The other identified community priorities included the development of the Sawridge lands, the paddling venue and the Community Gardens.

- ***Land Acquisition*** – clearly to meet the some of the Community priorities will require the City to acquire land from private owners. As defined in the Land Strategy in Section 2.4, there are some lands that will require purchase (i.e. Sawridge Lands), some lands that can be acquired through the subdivision development process and some lands that may require other approaches in order to be acquired in advance of future subdivision development.

- ***Additional Planning and Design*** – all of the proposed development may require some level of additional assessment, planning and design before implementation can occur. If this planning work is significant, for example the background studies to be completed in advance of any dredging works, then they should be included in the short term implementation plan.

- ***Easy to Implement/Momentum Builders*** – once the Master Plan is approved, the citizens of Leduc will have some expectation that development will proceed in a reasonable timeframe. In order to demonstrate commitment to the plan and in an effort to build community support and development momentum, the City should look to implement a few smaller projects such as trail links, landscape projects that don't require significant cost or advance planning.

- ***Construction Staging*** – related to the implementation of a few smaller capital projects is the removal/relocation of some of the existing facilities in order to make land available for proposed new features. An example is the relocation of the community garden to make space for the new paddling venue (boathouse) which needs to be built before the existing shop and yard are removed.

- ***Available Capital Budget*** – the City has a number of major capital priorities that have been identified for the next three years and it may be a challenge to find capital budget for development of major projects around Telford Lake in the short term. This highlights the importance of planning for major projects, using smaller projects as momentum builders, and preparing for development through construction staging.

- ***Partnerships*** – the City needs to look to establish partnerships with a couple of key groups to facilitate development. Most importantly is the Telford Lake Alberta Training Centre Society who have a business plan and are prepared to contribute

time and financial resources to assist in developing the vision for the paddling venue. Other potential partners include Ducks Unlimited, the Cultural Village, sports groups, naturalists, Community Garden users and dog park users.

5.2 Telford Lake Ten Year Plan

Based on the overall estimated capital costs of approximately $31.0 million (See Section 5.3) for all of the proposed development, it is realistic that the total implementation of the Telford Lake Master Plan could take upwards of 25 years to be fully realized. Based on consideration of the factors outlined above, the Steering Committee made the decision that an initial ten-year implementation plan would be a realistic timeframe to balance the challenges of capital budget and land acquisition, with the needs and expectations of the City, the stakeholders and all of the users of Telford Lake.

The following is the recommended 10-year implementation plan components and the suggested timeframe for implementation. Since sequencing is important, and there are unknowns with respect to when initial actions can be completed, there is some flexibility built into the plan. As indicated previously, the key priorities are the development of the multiway around the lake, the first phase of the paddling venue and the development of the Sawridge Lands. To facilitate this development requires land acquisition, studies related to dredging of the lake and of course, identification of funding sources and approval of capital budgets. The estimated capital budget for the 10-year plan is $11.4 million, which includes all capital, land contingency as well as an allowance for fees for detailed studies and design.

5.2.1 Land Acquisition (Year 2-3)

If the vision for a multiway around Telford Lake is to be achieved in advance of the projected land development timelines (20-40 years), then the City will need to acquire land from the existing land owners. Since it is not feasible to expect that the City would purchase all of the required lands, different options have been proposed and have been discussed with the landowners. The following provides a brief overview of what is being proposed - details are not included in the interests of maintaining confidentiality during discussions and ultimately negotiations:

- ***Shoreline Trail Corridor*** – the City has met with landowners and has proposed a model that would see landowners pre-dedicate future reserves to the City to facilitate the development of the multiway parallel to the lake. If accepted, individual landowners would pre-dedicate shoreline environmental reserve (ER) and a 20 metre wide corridor of municipal reserve (MR) to the City. The City would fence the corridor and ultimately construct the multiway. This model has been used by the City of Leduc as well as in other municipalities as a means to acquire land in advance of subdivision.

- ***West end*** – two options have been proposed to facilitate a trail corridor along the west shore of Telford Lake from Telford House Park to provide connection to the Sawridge Lands. The recommended option is for the City to negotiate a lease with the Church to develop a combination of boardwalk and surface trail along the shoreline connecting to Kin Park. Beyond the ten year horizon, future land for a formal multiway connection would need to be acquired.

- ***Sawridge Lands*** – the City has met with the owners to discuss the purchase of the land in its entirety or in part, to gain ownership of the entire forest area for both conservation and recreational (trail) development. In the discussions, consideration is being given to the extent of land purchased, the price, the

potential environmental and municipal reserve dedications and other factors that may influence the purchase price.

5.2.2 Multiway Around the Lake (Year 2-10)

Provided that the City is able to acquire the lands, the development of the multiway around the lake should proceed on an incremental basis with trail development as land is acquired. It is recommended that budget be allocated to facilitate multiway development every year starting in the second year of the plan. It is also recommended that the multiway initially be developed as a 3.0 m wide compacted granular trail in an effort to reduce overall capital costs and long term maintenance costs. Grants for trail development, and partnerships with a local, regional or national trail organization for funding or volunteer construction support, may be means to reduce direct cost to the City. The total estimated cost of a compacted granular multiway around the lake including all amenities and naturalization is $2.5 million. The following summarizes the development components by area:

- ***Sawridge Lands*** – a multiway through the Sawridge lands would be easily accommodated along an existing pathway corridor remaining from previous gravel operations. Development would include approximately 850m of trail, two interpretive viewpoints, two trail rest nodes, restoration and naturalization. Estimated capital cost of $210,600.

- ***North Shore*** – development would include approximately 1700m of trail, two interpretive viewpoints, two trail rest nodes, restoration and naturalization. Estimated capital cost of $536,400. The road access and parking would be developed in the future in conjunction with land development in the area

- ***East End*** – development would include approximately 600m of trail, 160m of boardwalk, a bird viewing blind/ interpretive viewpoint, a trail rest node, restoration and naturalization. Estimated capital cost of $513,200. Development of the regional trail connection towards Saunders Lake is not included in this phase.

- ***South Shore*** – development would include approximately 1200m of trail, an interpretive viewpoint, a trail rest node, restoration and naturalization. Estimated capital cost of $339,400.

- ***West End*** – development would include approximately 380m of granular trail, 130m of boardwalk, an interpretive viewpoint, a trail rest node, restoration and naturalization. Estimated capital cost of $403,400. The removal of the Kin Park playground is recommended as part of this phase (See item 5 for replacement of the playground).

5.2.3 Community Garden Relocation (Year 2-3)

In order to facilitate development of a new paddling venue, approximately half of the existing community garden site must be removed and approximately half of the proposed Community Garden must be developed (See Figure 5.1). Capital costs for this work is estimated at $436,000, and includes testing, relocation/enhancement of soils, installation of water line and service points, pathways, parking and storage building/shelter. Washrooms would be developed in the future.

5.2.4 Paddling Venue Phase 1 (Year 5-7)

Once the community garden is relocated, the first phase of the paddling venue can be developed including modification of the shoreline, construction of a 3-bay boathouse, and associated, apron, dock, yard and parking development. The total estimated capital cost including contingency and fees for the development of the paddling venue is $2.6 million and includes the following components.

- Dredging and Shoreline Modification Studies – several required studies to be completed to facilitate review and approvals. Also includes pilot dredging program to accurately confirm the scope and cost of the dredging. Estimated cost of all studies is $300,000. The dredging works, if approved, have not been included in the ten-year implementation plan.

- Boathouse – construction of a three bay boathouse to meet the short and medium term needs of the Telford Lake Alberta Training Centre Society. This first phase of the boathouse would not include the proposed fourth storage bay, the repair bay or the two storey storage/multipurpose facility with washrooms. It is recommended that space be allocated in one of the bays for a washroom to meet the needs of users. The estimated capital cost for this phase of $1,040,000 would include the provision of water and sanitary services to the building.

- Site Preparation and Shoreline Modification – based on approval from Alberta Environment and Public Lands, the shoreline modification should be completed to facilitate lake access and the installation of the docks. Estimated capital cost for this work is $310,000

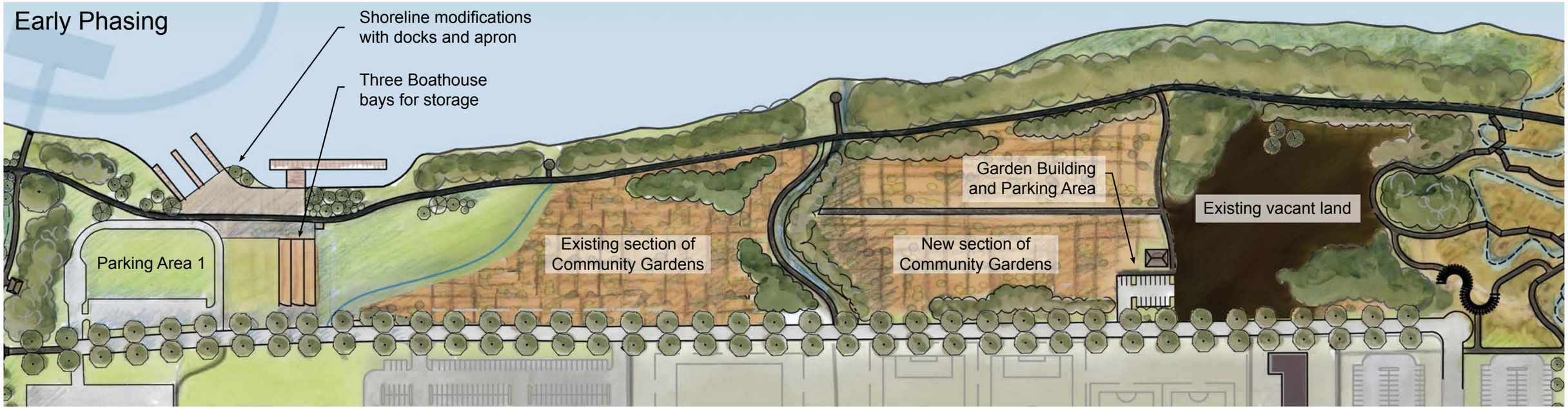
- Apron, Docks, Yard, Trail and Parking – gravel and grass apron, floating docks (approx 110 m), fenced storage yard with access and trailer storage, and 44 stall gravel parking lot. Estimated capital cost of $720,000.

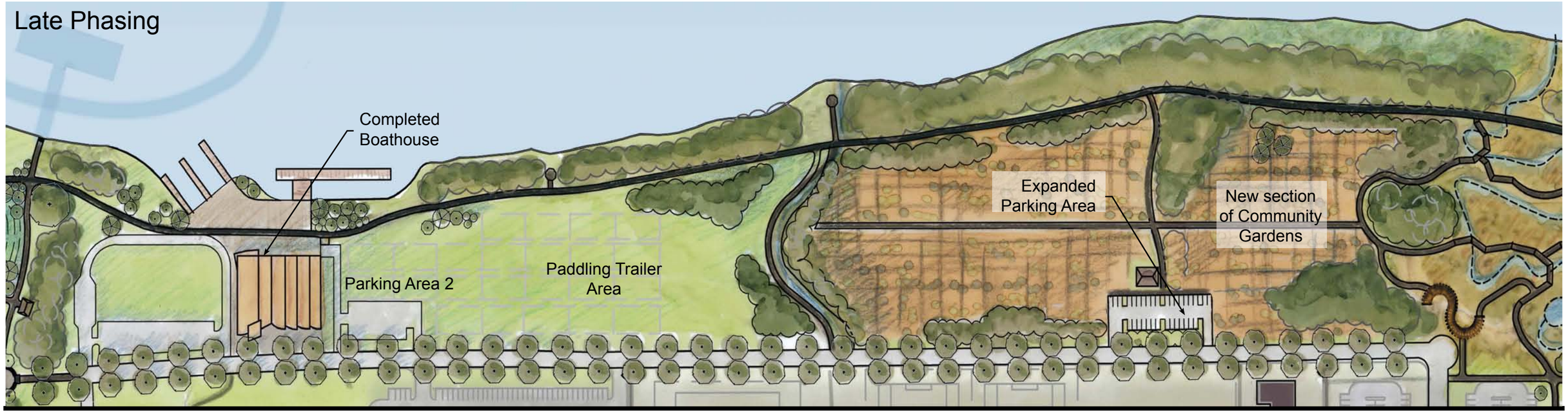
- Restoration and Landscaping – includes tree planting, topsoil and seeding, furnishings and signage. Estimated capital cost of $190,000

- Removal of Existing Building and Yard – once the new paddling venue is constructed, the existing building, storage, facilities and yard should be removed and the land restored to grassed open space. The estimated cost for this work is has not been included as a cost within the plan and the overall development of the area into a new Community Commons as per the Master Plan would not be part of the ten-year plan.

5.2.5 Sawridge Lands (Year 8-10)

As indicated previously, the development of the Sawridge Lands into an outdoor recreation and nature interpretive area will focus on conserving the existing natural features and developing a network of low impact trails along existing remnant corridors. All of the features illustrated in the master plan are proposed for development in the ten-year implementation plan. This includes a neighbourhood nature playground, 3.4km of walking trails, 2 interpretive viewpoints, 3.5km of mountain bike/cross country ski trails, mountain bike terrain park, gravel access road and parking, control gates/bollards, shelter/washroom, picnic sites, restoration and naturalization. The estimated capital cost for the proposed development is $2.4 million. Note that the multiway through the site is included with the overall multiway costs.





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Telford Lake Master Plan
City of Leduc

Phase 1 Paddling Venue and Community Gardens

Figure 5.1
March 2010

5.3 Overall Capital Costs

The following table provides an estimate of capital costs for each of the recommended program elements by development area. The table includes a description of the items included in the unit rate for each item. The total estimated capital cost of the project in 2009 dollars is $31.3 million which includes a 25% contingency. An allowance of $4.0 million has been included for land acquisition in the overall Master Plan Total but has not been assigned to any of the specific development areas. Inflation has not been included in the estimate and would need to be added at the time of development.

Item	Description	Notes	Units		Unit Price	Total
1.00	**Sawridge Lands**					
1.01	Site Preparation	Clearing and common excavation	Sq .m.	13000	$ 6	$ 78,000
1.02	Gravel Access Road	10 m wide, rural cross section	Sq. m.	1300	$ 110	$ 143,000
1.03	Gravel Parking Areas	Base, compacted gravel, curb stops	Sq. m.	1500	$ 80	$ 120,000
1.04	Access Controls	Entry gates, bollards, signs	Allowance	1	$ 25,000	$ 25,000
1.05	Walking/Interpretive Trails	2.0 m wide granular or wood chip	Lin. m.	3400	$ 65	$ 221,000
1.06	Mountain Bike Trails	1.0 m wide granual/dirt, erosion controls	Lin. m.	3500	$ 45	$ 157,500
1.07	Interpretive Viewpoints	10x10 Wood, bench, trash, interp sign	Each	2	$ 35,000	$ 70,000
1.08	Interpretive Nodes	Gravel pad, interp sign	Each	20	$ 1,800	$ 36,000
1.09	Washroom/Shelter	Prefab., Composting, warm-up shelter	Lump Sum	1	$ 85,000	$ 85,000
1.10	Day-use Picnic Sites	Picnic Table on Gravel Pad (no grill)	Each	7	$ 1,400	$ 9,800
1.11	Neighborhood Playground	Nature themed playground	Lump Sum	1	$ 240,000	$ 240,000
1.12	Mtn. Bike Terrain Park	Grading, ramps/jumps, rest area	Sq. m.	2800	$ 140	$ 392,000
1.13	Trail Corridor Restoration	1m each side-Seeding/erosion controls	Sq.M	9200	$ 8	$ 73,600
1.14	Meadow Restoration	Topsoil & Seeding	Sq. m.	1	$ 60,000	$ 60,000
1.15	Tree Planting	Caliper Trees in open area	Each	100	$ 600	$ 60,000
1.16	Playground Site Seeding	Topsoil & Seeding	Sq. m.	5900	$ 3	$ 17,700
1.17	Site Furnishings	Benches, Trash Receptacles, signs	Allowance	1	$ 28,000	$ 28,000
1.18	Power/Lighting	LED Lighting - Road & Parking	Lump Sum	1	$ 95,000	$ 95,000
					Sawridge Lands Subtotal	**$ 1,911,600**
					25% Contingency & Fees	$ 477,900
					Sawridge Lands TOTAL	**$ 2,389,500**

Continued next page

Section 5.3 Continued

Item	Description	Notes	Units		Unit Price	Total
2.00	**Telford Lake Trail (TLT)**					
2.10	**TLT Sawridge Lands**					
2.11	Telford Lake Trail	3.0 m wide - Grading/base/asphalt	Lin. m.	850	$ 140	$ 119,000
2.12	Interpretive Viewpoints	10x10 Wood, bench, trash, interp sign	Each	2	$ 35,000	$ 70,000
2.13	Trail Rest Nodes	Ashpalt pad, Bench & Trash	Each	2	$ 4,000	$ 8,000
2.14	Trail Corridor Restoration	1m each side-Seeding/erosion controls	Sq. m.	1700	$ 8	$ 13,600
				2.1 TLT Sawridge Lands		**$ 210,600**
2.20	**TLT North Shore**					
2.21	Parking Area	not including roadway	Sq. m.	150	$ 80	$ 12,000
2.22	Telford Lake Trail	3.0 m wide - Grading/base/asphalt	Lin. m.	1700	$ 140	$ 238,000
2.23	Interpretive Viewpoints	10x10 Wood, bench, trash, interp sign	Each	3	$ 35,000	$ 105,000
2.24	Trail Rest Nodes	Ashpalt pad, Bench & Trash	Each	2	$ 4,000	$ 8,000
2.25	Trail Corridor Restoration	17m wide - seeding/Seedlings/erosion cont.	Sq. m.	28900	$ 6	$ 173,400
				2.2 TLT North Shore Subtotal		**$ 536,400**
2.30	**TLT East End**					
2.31	Telford Lake Trail	3.0 m wide - Grading/base/asphalt	Lin. m.	600	$ 160	$ 96,000
2.32	Boardwalk/BirdBlind	2.4 m wide wood, bird blind, benches, signs	Lin. m.	160	$ 2,200	$ 352,000
2.33	Trail Rest Nodes	Ashpalt pad, Bench & Trash	Each	1	$ 4,000	$ 4,000
2.34	Trail Corridor Restoration	17m wide - seeding/Seedlings/erosion cont.	Sq. m.	10200	$ 6	$ 61,200
				2.3 TLT East End Subtotal		**$ 513,200**
2.40	**TLT South Shore**					
2.41	Telford Lake Trail	3.0 m wide - Grading/base/asphalt	Lin. m.	1200	$ 140	$ 168,000
2.42	Interpretive Viewpoints	10x10 Wood, bench, trash, interp sign	Each	1	$ 45,000	$ 45,000
2.43	Trail Rest Nodes	Ashpalt pad, Bench & Trash	Each	1	$ 4,000	$ 4,000
2.44	Trail Corridor Restoration	17m wide - seeding/Seedlings/erosion cont.	Sq. m.	20400	$ 6	$ 122,400
				2.4 TLT South Shore Subtotal		**$ 339,400**
2.50	**TLT West End**					
2.51	Telford Lake Trail	3.0 m wide - Grading/base/asphalt	Lin. m.	380	$ 140	$ 53,200
2.52	Boardwalk	2.4 m wide wood	Lin. m.	130	$ 2,200	$ 286,000
2.53	Interpretive Viewpoints	10x10 Wood, bench, trash, interp sign	Each	1	$ 45,000	$ 45,000
2.54	Trail Rest Nodes	Ashpalt pad, Bench & Trash	Each	1	$ 4,000	$ 4,000
2.55	Trail Corridor Restoration	1m each side-Seeding/erosion controls	Sq. m.	760	$ 20	$ 15,200
				2.5 TLT West End Subtotal		**$ 403,400**

Telford Lake Trail Total	**$ 2,003,000**
25% Contingency & Fees	$ 500,800
Telford Lake Trail TOTAL	**$ 2,503,800**

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Section 5.3 Continued

Item	Description	Notes	Units		Unit Price	Total
3.00	**Telford Community Park**					
3.10	**Lions Park Road Day-Use Area**					
3.11	Site Preparation	Mobilization, clearing, common excavation	Lump Sum	1	$ 150,000	$ 150,000
3.12	Lions Park Road Extension	10 m wide, rural cross section, asphalt	Sq. m.	11000	$ 200	$ 2,200,000
3.13	Parking Area	Base, compacted gravel, curb stops	Sq. m.	2500	$ 70	$ 175,000
3.13	Access Controls	Entry gates, bollards, signs	Allowance	1	$ 50,000	$ 50,000
3.14	Asphalt Loop Trails	2.0 m wide - Grading/base/asphalt	Lin. m.	230	$ 150	$ 34,500
3.15	Washroom/Shelter	Prefab., Composting, warm-up shelter	Lump Sum	1	$ 85,000	$ 85,000
3.16	Canoe Launch and Dock	Concrete Ramp, floating docks, shoreline	Lump Sum	1	$ 170,000	$ 170,000
3.17	Group Picnic Sites	5m Prefab Shelter, conc pad, 10 picnic	Each	5	$ 55,000	$ 275,000
3.18	Individual Picinic Sites	Concrete Pad, Grill and Picnic Table	Each	4	$ 3,500	$ 14,000
3.19	Tree Planting/Naturalization	Native Caliper and seedling trees & shrubs	Allowance	1	$ 125,000	$ 125,000
3.20	Seeding	Topsoil prep and seeding of open space	Sq. m.	6820	$ 5	$ 30,690
3.21	Power and Lighting	LED Lighting - Road & Parking	Lump Sum	1	$ 210,000	$ 210,000
					Day Use Area Subtotal	**$ 3,519,190**
3.25	**Central Park Site**					
3.26	Site Preparation	Mobilization, clearing, common excavation	Lump Sum	1	$ 450,000	$ 450,000
3.27	Park Road	10m wide, gravel, rural cross section	Sq. m.	7800	$ 110	$ 858,000
3.28	Parking Areas	Asphalt, curb stops, line painting	Sq. m.	7500	$ 80	$ 600,000
3.28	Telford Lake Trail	Widen Ex. Trail to 4.0m asphalt	Lin. m.	1400	$ 190	$ 266,000
3.29	Asphalt Loop Trails	2.0 m wide - Grading/base/asphalt	Lin. m.	1890	$ 130	$ 245,700
3.29	Trail Rest Nodes	Ashpalt pad, Bench & Trash	Each	6	$ 4,000	$ 24,000
3.30	Festival Stage	Concrete Pad for flatbed, overhead	Lump Sum	1	$ 240,000	$ 240,000
3.31	Pavillion and Washroom	Multipurpose Bldg, washroom, change, mtg	Sq. m.	280	$ 2,500	$ 700,000
3.32	Pavillion Plaza	Patterned concrete	Sq. m.	2980	$ 80	$ 238,400
3.33	Pavillion Play Spaces	Vareity of specialized play features	Lump Sum	1	$ 1,200,000	$ 1,200,000
3.34	Pavillion Game Courts	Variety of court sports with surfacing	Lump Sum	1	$ 350,000	$ 350,000
3.35	Picnic Sites w/ grill	Concrete Pad, Grill and Picnic Table	Each	20	$ 3,500	$ 70,000
3.36	Picnic Sites w/o grill	Picnic Table on Gravel Pad (no grill)	Each	40	$ 1,400	$ 56,000
3.37	Natural Landscaping	Native tree & shrub seedlings in beds	Sq. m.	34,000	$ 15	$ 510,000
3.38	Tree Planting	Native & Ornamental Caliper Trees	Each	250	$ 600	$ 150,000
3.39	Ornamental Landscaping	Ornamental Planting beds	Allowance	1	$ 70,000	$ 70,000
3.40	Grass Seeding	Seed on topsoil (stockpiled) all open space	Sq. m.	78300	$ 3	$ 234,900
3.41	Site Furnishings	Benches, trash, bike rack	Allowance	1	$ 90,000	$ 90,000
3.42	Park Signage	Driectional, welcome, safety, bylaw	Allowance	1	$ 60,000	$ 60,000
3.43	Water and Sanitary Services	Extend water, sanitry, gas from City shop	Lump Sum	1	$ 250,000	$ 250,000
3.44	Power and Lighting	LED Lighting - roads, parking, plaza	Lump Sum	1	$ 150,000	$ 150,000
					Central Park Site Subtotal	**$ 6,813,000**

Continued next page

Section 5.3 Continued

Item	Description	Notes	Units		Unit Price	Total
3.50	**Dog Park**					
3.51	Dog Park Parking Areas	Base, compacted gravel, curb stops	Sq. m.	390	$ 140	$ 54,600
3.52	Walking Trails	2.0 m wide granular or wood chip	Lin. m.	1400	$ 65	$ 91,000
3.53	Grass Seeding	Seed on ex. topsoil all new open space	Sq. m.	13000	$ 3	$ 39,000
3.54	Dog Park Fencing and Gates	1.0m high chain link fence	Lin. m.	550	$ 85	$ 46,750
					Dog Park Subtotal	**$ 231,350**
3.60	**Sliding Hill**					
3.61	Sliding Hill	Final grading and contouring	Lump Sum	1	$ 25,000	$ 25,000
3.62	Walking Trails	2.0 m wide granular or wood chip	Lin. m.	200	$ 65	$ 13,000
3.63	Natural Landscaping	Native tree & shrub seedlings in beds	Sq. m.	32000	$ 15	$ 480,000
3.64	Tree Planting	Native & Ornamental Caliper Trees	Each	30	$ 600	$ 18,000
3.65	Grass Seeding	Grading/topsoil/seeding of all open space	Sq. m.	6130	$ 4	$ 24,520
3.66	Power and Lighting	LED lighting trail and hill	Lump Sum	1	$ 75,000	$ 75,000
					Sliding Hill Subtotal	**$ 635,520**
3.70	**Interpretive Wetland**					
3.71	Site Preparation	Mobilization, common excavation	Sq. m.	42400	$ 4	$ 169,600
3.72	Wetland Grading	Excavation, fine grading, controls	Cu. m.	25160	$ 4	$ 100,640
3.73	Interpetive Boardwalk	2.4 m wide wood, benches, signs	Lin. m.	150	$ 2,200	$ 330,000
3.74	Walking/Interpretive Trails	2.0 m wide granular or wood chip	Lin. m.	1240	$ 65	$ 80,600
3.75	Interpretive Nodes	Gravel pad, interp sign	Each	8	$ 1,800	$ 14,400
3.76	Interpretive Wetland Pavillion	Wood or Metal open air pavillion/feature	Lump Sum	1	$ 140,000	$ 140,000
3.77	Natural Landscaping	Native Tree/Shurb Seedlings, Wetland	Sq. m.	22000	$ 15	$ 330,000
					Interpretive Wetland Subtotal	**$ 1,165,240**
3.80	**Community Garden**					
3.81	Soil Placement/Conditioning	Add/remove/remediate/enhance soils	Sq. m.	22000	$ 6	$ 132,000
3.82	Parking	Gravel parking, curb stops	Sq. m.	1150	$ 80	$ 92,000
3.83	Access Controls	Entry gates, bollards, signs	Allowance	1	$ 15,000	$ 15,000
3.84	Site Fence	3' High Chain link	Lin. M	830	$ 70	$ 58,100
3.85	Washroom/Storage	Prefab., Composting, storage shed/shelter	Sq. m.	100	$ 1,500	$ 150,000
3.86	Tree Planting	Caliper Trees	Each	50	$ 600	$ 30,000
3.87	Water Service & Connections	Extend Service from Lede Park Fields	Lump Sum	1	$ 150,000	$ 150,000
3.88	Power and Lighting	Power to building, parking lot/site LED	Lump Sum	1	$ 65,000	$ 65,000
					Community Gardens Subtotal	**$ 692,100**

Telford Community Park SubTotal	**$ 13,056,400**
25% Contingency & Fees	$ 3,264,100
Telford Community Park TOTAL	**$ 16,320,500**

Continued next page

Section 5.3 Continued

Item	Description	Notes	Units	Quantity	Unit Price	Total
4.00	**South Telford & Telford House Park**					
4.10	**South Telford Community Commons**					
4.11	Site Preparation	Mobilization, common excavation	Sq. m.	19800	$ 6	$ 118,800
4.12	Remove Existing Building	Remove PW shop & other buildings/debris	Lump Sum	1	$ 35,000	$ 35,000
4.13	Spectator Berm	Material from Shoreline Modification	Lump Sum	1	$ 25,000	$ 25,000
4.14	Telford Lake Trail	Widen to 4.0 m asphalt	Lin. m.	160	$ 220	$ 35,200
4.15	Asphalt Loop Trails	2.0 m wide - Grading/base/asphalt	Lin. m.	640	$ 150	$ 96,000
4.16	Washroom	Prefab., Composting	Lump Sum	1	$ 35,000	$ 35,000
4.17	Picnic Shelter	Prefabricated Metal shelter w/ concrete pad	Lump Sum	1	$ 55,000	$ 55,000
4.18	Judges Tower	10m high, 3 level shelter, metal structure	Lump Sum	1	$ 85,000	$ 85,000
4.19	Ceremonial Plaza	Concrete plaza, walls, railings	Sq. m.	380	$ 300	$ 114,000
4.20	Amphiteatre Plaza	Concrete plaza, walls, railings	Sq. m.	210	$ 300	$ 63,000
4.21	Entry Plazas	Concrete Plaza, signage	Sq. m.	140	$ 180	$ 25,200
4.22	Spectator Bleacher	90 person	Each	2	$ 15,000	$ 30,000
4.23	Tree Planting	Ornamental Caliper Trees	Each	40	$ 600	$ 24,000
4.24	Ornamental Landscaping	Ornamental Planting beds	Allowance	1	$ 60,000	$ 60,000
4.25	Grass Seeding	Seed on topsoil (stockpiled) all open space	Sq m.	13600	$ 3	$ 40,800
4.26	Site Furnishings	Benches, Trash, bike racks	Allowance	1	$ 20,000	$ 20,000
4.27	Power and Lighting	LED Lighitng, power for speaker systems	Lump Sum	1	$ 75,000	$ 75,000
				South Telford Commons Subtotal		**$ 937,000**
4.30	**Telford House Park**					
4.31	Site Preparation	Mobilization, common excavation	Sq. m.	3420	$ 6	$ 20,520
4.32	Wetland Grading	Excavation and fine grading	Cu. m.	2000	$ 15	$ 30,000
4.32	Parking Expansion	Grading, base, asphalt, lines, curb stops	Sq. m.	720	$ 140	$ 100,800
4.33	Asphalt Loop Trails	2.0 m wide - Grading/base/asphalt	Lin. m.	350	$ 150	$ 52,500
4.34	Trail Rest Nodes	Ashpalt pad, Bench & Trash	Each	2	$ 4,000	$ 8,000
4.35	Tree Planting	Ornamental Caliper Trees	Each	40	$ 600	$ 24,000
4.36	Ornamental Landscaping	Ornamental Planting beds	Sq. m.	2000	$ 25	$ 50,000
4.37	Grass Seeding	Seed on topsoil (stockpiled) all open space	Sq m.	2700	$ 5	$ 12,150
4.38	Site Furnishings	Benches, trash, bike racks	Allowance	1	$ 9,000	$ 9,000
				Telford House Park Subtotal		**$ 306,970**

South/Telford House SubTotal	**$ 1,243,970**
25% Contingency & Fees	$ 311,000
South/Telford House TOTAL	**$ 1,554,970**

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Section 5.3 Continued

Item	Description	Notes	Units		Unit Price	Total
5.00	**Paddling Venue**					
5.01	Site Preparation	Mobilization, clearing, common excavation	Sq m.	37800	$ 6	$ 226,800
5.02	Shoreline Modification	Excavation of North & South shores	Lump Sum	1	$ 90,000	$ 90,000
5.03	Gravel Parking/Entry Roads	Base, compacted gravel, curb stops	Sq. m.	3400	$ 80	$ 272,000
5.04	Telford Lake Trail Through site	New 4.0m wide asphalt	Lin. m.	200	$ 240	$ 48,000
5.05	Boathouse	5 Bay plus two storey storage/multipurpose	Sq. m.	1820	$ 1,200	$ 2,184,000
5.06	Gravel Apron	Base, compacted gravel, bollards	Sq. m.	1780	$ 65	$ 115,700
5.07	Entry Plaza & Walks	Patterned Concret	Sq. m.	780	$ 80	$ 62,400
5.08	Tree Planting	Caliper Trees	Each	25	$ 600	$ 15,000
5.09	Grass Seeding	Grading/topsoil/seeding of all open space	Sq. m.	24000	$ 4	$ 96,000
5.10	Chain Link Fencing and Gates	Fence around yard area	Lin m.	220	$ 85	$ 18,700
5.11	Site Furnishings	Benches, Trash, Bike Racks	Allowance	1	$ 12,000	$ 12,000
5.12	Site Signage	Welcome sign, safety signs	Allowance	1	$ 20,000	$ 20,000
5.13	Water and Sanitary Services	Extend services from ……?	Lump Sum	1	$ 150,000	$ 150,000
5.14	Power and Lighting	LED lighting of yard and apron	Lump Sum	1	$ 70,000	$ 70,000
					Paddling Venue SubTotal	**$ 3,640,600**
					25% Contingency & Fees	$ 910,200
					Paddling Venue TOTAL	**$ 4,550,800**

Overall Capital Costs Summary

Telford Lake Trail	$ 2,503,800
Sawridge Lands Development	$ 2,389,500
Paddling Venue	$ 4,550,800
Telford Community Park	$ 16,320,500
South Telford/Telford House Park	$ 1,554,970
Land Acquisition Allowance	$ 4,000,000
Overall Master Plan Total	**$ 31,319,570**

6.0 Final Recommendations

The Telford Lake Master Plan describes a clear and comprehensive plan for the long term development of Telford Lake as a recreational resource for the citizens of Leduc, and the protection of the lake as a significant regional environmental feature. The Master Plan recommends development features and amenities within six distinct zones around the lake and provides a ten-year capital plan for the first phase of development. In addition to the development and implementation recommendations defined in Sections 4.0 and 5.0, it is recommended that the City of Leduc consider the following actions to assist with the long term implementation of the Telford Lake Master Plan:

- The Master Plan should be revisited after five years to review the implementation and phasing recommendations within the context of current capital budgets and changing development opportunities and priorities.
- As detailed design and development proceeds the City will need to assess and defined the associated operations and maintenance requirements in terms of resource and budget allocation.
- The proposed 10-year plan should be integrated into the City long term capital plan
- The Master Plan recommendations should be integrated with other existing planning and statutory documents such as the Lede Park Master Plan, Municipal Development Plan and Open Space Master Plan.
- The City should work to develop/enhance partnerships to provide advocacy within the community and to all levels of government and to support the staged implementation of the Master Plan.