



*City of Yellowknife*

# Integrated Parks, Trails and Open Space Development Study

**September 2005**



*Leave Your Mark*

(In reply, please refer to)

**Our File: 04-3978 1000**

September 22, 2005

City of Yellowknife  
PO Box 580  
Yellowknife, NT  
X1A 2N4

Attention: Grant White  
Director, Community Services

**Integrated Parks, Trails and Open Space Development Study  
Copies of Final Submission**

Dear Mr. White:

Dillon Consulting Limited (Dillon), in partnership with Community Development Consultants (CDC) is pleased to provide you with 25 copies of the Integrated Parks, Trails and Open Space Development Study – Policy Document. This document forms part 1 of 3 of our deliverables for this project.

**Part 1: Policy Document**

Part 2: Background Report (no changes, delivered the City on March 18, 2005)


Part 3: Wall sized mapping (attached)

As an attachment to this letter is the approved Implementation Strategy.

It has been a pleasure working with you on this project.

Yours sincerely,

**DILLON CONSULTING LIMITED**

  
Nalini Naidoo, MCIP  
Project Manager  
Encl.



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**Dillon Consulting  
Limited**

Report Reference	Recommendation by Time Frame Implementation	Implement By	Budget Estimate	Remark
<b>Short Term</b>				
	1. Regular Reporting of results and implementation of the Integrated Parks, Trails and Open Space Development Study to the public	On going	Staff Time	
	2. Develop a policy that deals with trail maintenance, coordination and inspection	2005	Staff Time	
(4.1.1)	3. That the City commits long- term resources to implement an acceptable level of parks trails and open space service.	2005	Staff Time	
(6.1.1 -1)	4. That the City builds on this current document by maintaining a green space inventory, assessment, and mapping program for the entire park system.	2005	Staff Time	
	5. Undertake a study that includes an inventory, classification system and multi-seasonal assessment including species at risk.	2006	\$100,000	
(1.1.1 – 1)	6. Recognize established informal snowmobile and cross country skiing routes within the City when planning for new development.	2006	Staff Time	
(1.1.1 – 2)	7. Continue the positive relationship between user groups to address issues of safety on trails through provision of signage and education.	2006	Staff Time	
(1.1.1 – 8)	8. Recognize the established informal pathway system and areas of ecological importance around Tin Can Hill when planning for new development.	2006	Staff Time	
(1.1.1 – 10)	9. Recognize the informal pathway system behind the Racquet Club, which connects the Back Bay Area to the Niven Lake Trail.	2006	Staff Time	
(1.1.1 – 13)	10. Recognize the value of trails available at the Ski Club in both winter and summer months.	2006	Staff Time	
(2.1.1 – 2) (2.3.1 – 1) (2.5.1 – 2) (2.7.1 -1 )	11. Recognize the provision in the Zoning By-law No. 4024 which provides a 50m nature preservation zone around all water bodies.	2006	Staff Time	

(6.2.1 -1)	12. That the City works with the Government of the Northwest Territories to create stronger requirements in the NWT <i>Planning Act</i> to recognize and protect green space.	2006	Staff Time	
(6.2.1 - 2)	13. That the zoning by-law specify developer requirement for useable land for trails and park development.	2006	Staff Time	
(6.2.1 - 3)	14. That the City updates the landscape definition and requirements in the zoning by-law.	2006	Staff Time	
(6.3.1 - 1)	15. That the City establishes a percentage of land within the municipality which is defined as a green space footprint.	2006	Staff Time	
(7.1.1 -1)	16. That the City of Yellowknife provides opportunities for public involvement in green space planning.	2006	Staff Time	
(7.1.1 - 2)	17. That the City of Yellowknife makes use of public open houses, community focus groups and/or public review of development plans for future subdivisions.	2006	Staff Time	
(3.1.1)	18. That the City reviews, update, and adopt the standards set forth in the 1995 community services plan and use these standards to help guide budget commitments and implementation of the Integrated Parks, Trails and Open Space Development Study.	2006	Staff Time	
(2.3.1 - 5) (2.5.1 - 4) (2.7.1 - 2)	19. Ensure garbage receptacles are readily available at convenient locations for public use.	2006	\$1200/can	Steel Wildlife-Proof Containers
(2.3.1 - 6)	20. Regular maintenance and garbage collection is essential for both aesthetics and to control scavenging by wildlife.	2006	Staff Time	
(2.5.1 - 5) (2.7.1 - 3)	21. Enforce refuse storage by-law	2006	Staff Time	
(2.1.1 - 6)	22. Protection of the Ice Falls	2006	Staff Time	
(2.2.1 - 5)	23. Enforce Bylaw on storage of garbage and household refuse, discouraging scavenging by wildlife	2006	Staff Time	
(2.5.1 - 1)	24. Jackfish Lake/Frame Lake - Construct deflective gates on trails to cause wildlife to veer off of path and in order to avoid entering the city core.	2006	\$2,000	Based on two pedestrian access gates

(1.1.1 -3)	25. Develop a safe crossing point at Highway 4 near the entrance to the Legislative Assembly site, which would join the Frame Lake Trail and the Niven Lake Trail. Safe crossing will also be used by snowmobiles and dog mushers in the winter months.	2006	\$5,000	The budget is for painting, standard with base and flashing signs. Depress button to activate pedestrian signals.
(1.1.1 – 5)	26. Establish a safe crossing point at the junction of Highway 4 and Highway 3. This crossing would connect the ski club trails to the Airport Loop Trail. Safe crossing will also be used by snowmobiles in the winter months.	2006	\$5,000	The budget is for painting, standard with base and flashing signs. Depress button to activate pedestrian signals.
(1.1.1 – 6)	27. Establish a safe crossing between the Fred Henne campground and Highway. This crossing would connect the Frame Lake Trail with the Fred Henne Campground and the proposed Airport Loop Trail.	2006	\$5,000	The budget is for painting, standard with base and flashing signs. Depress button to activate pedestrian signals.
(1.1.1 – 7)	28. Establish a safe crossing point at the intersections of Kam Lake Road, Old Airport Road, Taylor Road and Franklin Avenue.	2006	\$650	This is for pedestrian crossing signs at the existing traffic lights. Pedestrian stop and go signs.
(1.1.1 – 14)	29. Plan a downtown green space as part of the Frame Lake Trail system which encompasses the Gerry Murphy site and Soomba. K'e, and Mildred Hall School.	2007	\$400,000	Budget for design and construction

**Mid Term**

(1.2.1 – 1) (2.4.1 – 2) (2.6.1 – 1)	30. That the City recommits itself to the implementation of the Waterfront Plan, as amended.	2008	Staff Time	
(1.2.1 – 2)	31. That the City recognizes the Waterfront Management Plan as an integral part of the Integrated Parks, Trails and Open Space Development Study.	2008	Staff Time	
(2.4.1 – 1)	32. Implementation of parks and trails portion of the Niven Lake Development Scheme	2008	Staff Time	
(6.2.1 – 4) (5.4.1)	33. That the City uses a development scheme approach to all new subdivision developments in order to implement parks, trails and open space standards.	2008	Staff Time	
(6.2.1 – 5)	34. That the City develops and implements a trails usage by-law which consolidates the regulations of the littering and snowmobiling bylaws, and other related by-laws which impact trails.	2008	Staff Time	
(1.1.1 – 12) (5.2.1)	35. Protect a visual and non vehicular connection between the sliding hill (between 51st and 50A Avenue) and Tin can Hill. In order to maintain this connection the park located between Burwash Drive and Con Road must have a formalized trail in the event that this site is developed.	2010	\$14,000	Paved – Multi-Use, including signage
(1.1.1 – 16)	36. Provide signage, including a trails map, between Range Lake Trail and Frame Lake Trail, specifically at the junction of Borden Drive and Old Airport Road indicating the location of the underpass, which connect the trails.	2010	\$650	One large map at the junction with smaller signs (2-3) along the trail.
(1.1.1 – 20)	37. In consultation with the Ski Club and residents of Niven Lake, investigate the suitability of providing trail connections from the Niven Lake Trail, through the subdivision, to the Ski Club. Ecologically important areas around Niven Lake and the Ski Club must be considered in the trail design.	2010	\$15,000	Feasibility study with consultations
(5.3.1)	38. Connections to the community park site on Hordal Road need to be created. Existing snowmobile routes within this NP zone should be recognized and incorporated into the development scheme for this site.	2010	\$10,000	Construction estimate

(2.5.1 – 3)	39. Establish a connection between the Frame Lake trail system and the ski club	2010	\$40,000	Connection Depends on construction of the 'Airport Loop'
(2.1.1 – 7)	40. Where sensitive shoreline habitats occur, the City should adopt a signage program that is common around the lake system and which could be incorporated with the assistance of local landowners, business owners and community groups (signage stewards).	2010	Staff Time	This is recognizing a program, not the production of signs themselves
(2.3.1 – 4) (2.5.1 – 6) (2.7.1 – 4)	41. Use signage to educate public on local wildlife species and nature preservation	2010	\$10,000	20 signs total - Great Slave viewpoints, Rat, Range and Grace Lakes
(2.1.1 – 1)	42. Protect ravine area between Jackfish lake and Back Bay	2010	Staff Time	This is a development planning key
(2.1.1 – 3)	43. Protect wetland area at mouth of Baker Creek	2010	Staff Time	
(2.1.1 – 5)	44. Protection of the historic significance of Back Bay cemetery	2010	Staff Time	
(2.2.1 – 1)	45. Protect Rat Lake and surrounding area to promote use by waterfowl and other aquatic wildlife.	2010	Staff Time	
(2.2.1 – 4)	46. Consider surrounding green space within future developed area, creating a "barrier" to wildlife passage (avoiding the "funnel effect").	2010	Staff Time	This is a development planning key
(2.3.1 – 3)	47. Consider protecting the peat land bog located at end of Kam Lake road	2010	Staff Time	
(2.2.1 -3)	48. Negus Point/Tin Can Hill - Allow for continued multi-use by various user groups (all season trails)	2010	Staff Time	This is a development planning key

**Long Term**

(1.1.1 – 4)	49. Create a multiuse non-vehicular trail around the area known as the “Airport Loop.”	2015	\$670,000	Design and Construction Estimate
(1.1.1 – 9) (5.1.1.)	50. Ensure the proposed trail system for Twin Pine Hill provides for connections to School Draw Avenue and 50 <sup>th</sup> Avenue.	2015	Staff Time	This is a development planning key
(1.1.1 – 11) (2.2.1 – 6)	51. Investigate the feasibility of developing a “Mine to Mine” all-season pathway between Negus Point and Giant Mine, with connections to neighborhoods, and recognition of areas of ecological importance, along the way. Include signage of historical sites and Points of Interest	2015	\$20,000	Feasibility Study – No Construction
(1.1.1 – 15) (2.3.1 – 2)	52. Consider developing a green space and trail system that will allow for travel by pedestrians and preservation of natural areas near Grace Lake. Ecologically important areas around Grace Lake must be considered in the trail design.	2015	\$520,000	Design and construction price
(1.1.1 – 17)	53. Recognize the opportunities to connect future Multiplex site trails with informal trails located between Taylor Road and Ptarmigan Road. This trail would exit on Ptarmigan Road and should include signage and mapping direction to the Tin Can Hill informal trail network. The trail can follow the current informal snowmobile trail in this area.	2015	\$78,000	Formal paved trail system behind Multiplex. These would tie into existing trails.
(1.1.1 – 18)	54. Other proposed Multiplex site trails should be considered for connection into any future development of the Con Mine site once its remediate to acceptable standards.	2015	Staff Time	This is a development planning key
(1.1.1 – 19)	55. Investigate the terrain around Range Lake and the feasibility of completing the trail around the lake. Ecologically important areas around Range Lake must be considered in the trail design.	2015	\$10,000	Feasibility study – no construction.
(1.1.1 – 21)	56. Extend current bike trail along Kam Lake Road to the proposed trail around Grace Lake by providing additional signage along Kam Lake road in order to connect to the proposed Grace Lake trail.	2015	\$500	



(1.1.1 – 22)	57. Investigate the feasibility of designing and constructing a dedicated bike lane along Kam Lake Road which will require road widening and paving.	2015	\$3,000	This is a cost feasibility study – does not reflect the actual design or construction itself.
(2.7.1 – 5)	58. Range Lake and Area - Extend trail system around lake, using boardwalks to protect sensitive shoreline habitat.	2015	Estimate reflective of feasibility study	Actual Construction of the trail system. As opposed to the feasibility study of #52
(2.2.1 – 2)	59. Consider creating a boardwalk along shoreline of Rat Lake, enabling public to access the area without causing harm to the sensitive habitat. Make a formal connection from the boardwalk to the trail system on Tin Can Hill.	2015	\$144,000	Entire perimeter of lake is boardwalk
(2.1.1 – 4)	60. Where appropriate, use boardwalks around wetlands to preserve the integrity of the natural vegetation	2015	Staff Time	This is a development planning key

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Appendix B	2015 Vision Map – What our community can look like in 10 years
Appendix C	Facility Access Map – Proximity to parks and facilities
Appendix D	Non Vehicular (non motorized) Commuter Map
Appendix E	Ecologically Sensitive Areas Map

## **Strategic Direction - Vision 2015**

As we looked forward to the next ten years, we saw that a committed group of people came together to ensure that our park system preserved environmentally sensitive areas, protected lands for the future and helped the citizens of Yellowknife be active in the outdoors year round. City Council, administration and residents teamed up to put policies and guidelines in place to proudly create an integrated parks, trail and open space plan. Our vision is:

1. A development bylaw/agreement that ensures parks are considered as an integral part of community design and that the community has a voice in development decisions;
2. Our citizens can move safely throughout the City to all key points of interest using non-vehicular alternatives. We are leaders in Canada's green commuting plan;
3. The Zoning By-law continues to provide have a 50m setback on all lakes to protect environmentally sensitive areas and to allow public use
4. A wildlife management plan is incorporated into planning for the park system to ensure safety for wildlife and users;
5. A contiguous multi-purpose pathway from Negus Point to Giant Mine is the pride of the City and a big favorite with visitors and tourists;
6. Development standards allow planners to maintain a significant percentage of our land for the green spaces that make our community home to locals and inviting to visitors and tourists;
7. The unique direction we chose balanced the need for green space in the City with the access to wilderness that surrounds us;
8. Our parks are accessible to people of all ages and abilities;
9. An interpretive system allows us to commune with nature and learn about the north;
10. Heritage sites are part of the park system;
11. The Gerry Murphy Site/Samba'ke Park is a favorite gathering place for special events, picnics and outdoor activities;
12. Our design enables users of all types to cooperate and enjoy the park system, and
13. Developers recognize the importance of green space to the City and demonstrate a willingness to incorporate new and interesting elements into their plans.

## **Mission Statement**

To create an environmentally friendly park system that beautifies our City, meets the needs of residents, visitors and tourists and encourages people to be active in the outdoors year round.

**POLICY DIRECTION**

The 2004 General Plan By-law No. 4315 stated that there is a strong public expectation of community growth that balances growth management, green space, recreation and alternate transportation routes/trails that are non-motor vehicular (non-vehicular). One of the guiding principles enshrined in the General Plan is the commitment to developing a more compact city and responsible infill and redevelopment within the existing built-up area of the City. The Plan states that there may be a need to rezone some parcels of land to accommodate residential infill. The 2005 Residential Growth Study materializes this principle. One of the specific proposals in the 2004 General Plan was the development of future proposals for open space, formal and informal trail networks, and neighborhood accessible recreation (active and passive) opportunities.

The City of Yellowknife, through the General Plan process, has committed to consider, as part of the residential design, the inclusion of natural area corridors, playgrounds and protection of significant vegetation and landscapes as important component of the overall design. The City has committed to a balance between open space preservation and development.

This Integrated Parks, Trails and Open Space Development Study builds on policies detailed in the 2004 General Plan, specifically:

1. Create a network of linked open spaces that will provide residents with alternative transportation and recreational routes within the City and provide access to open spaces in proximity to the city.
2. Open space and trail connectivity will be incorporated as part of the evaluation of opportunities for development.
3. The importance of water bodies will be recognized and provide users with the appropriate level of access to this resource through the implementation of the Waterfront Management Plan which provides for improved and enhanced vehicular, pedestrian and water use access; establishes water/land use, development and occupancy policies and controls for the water surface and shoreline of Great Slave Lake; and identifies nature and heritage preservation areas.
4. To provide a hierarchy of community parks which balance objectives for active sports facilities, passive, recreation, and environmental conservation.

Within the implementation strategy of the General Plan one of the primary initiatives was to undertake an Integrated Parks, Trails and Open Space Study.

<b>SCOPE OF STUDY</b>	
<b>Task</b>	<b>Location</b>
Identify, assess and evaluate current information and emerging trends in parks and trail development	Policy Document. Background Report
Generate a plan that addresses the development of green spaces, balanced neighborhoods, and interconnected trails systems throughout the city.	2015 Vision Map Facility Access Map Policy Document
Undertake a document review, public meeting and interview with special interest groups, Mayor, Council and City Administration	Background Report
Recommendations will identify a mechanism to protect and manage parks, trails and undeveloped open space including a strategy for snowmobile trails.	Policy Document 2005 Map 2015 Vision Map
Identify Opportunities and Challenges for the creation of a network of linked parks and open spaces.	Background Report Policy Document Commuter Trails Map
Look at existing and future parks, trails, and open space development including public access to the waterfront, in consideration of the long term plans for residential, commercial and industrial areas, and provide budget projections for recommended developments.	Policy Document 2015 Vision Map
Identify ecologically sensitive areas and unique land feature throughout the City such as wetlands, bedrock, viewpoints, waterfront, etc that many require protection and specific future study.	Background Report Policy Document 2015 Vision Map Ecologically Sensitive Areas Map
Develop a map that inventories all existing parks, playgrounds, sports fields, open space, foot trails, ski trails and snowmobile trails throughout the City	2005 Map
Develop a map identifying proposed parks, playgrounds, sports fields, open space, foot trails, ski trails and snowmobile trails and show how they works with the existing system.	2015 Vision Map

The Terms of Reference for the Integrated Parks, Trails and Open Space Development Study did not include the following areas of research:

- Operation and maintenance cost estimates
- Impact of land selection process
- Impact of Government of the Northwest Territories’ Land Lease Only Policy

## 1 POLITICAL, ADMINISTRATIVE AND PUBLIC COMMITMENT

1. Political Administrative and Public Commitment
2. Ecological Protection
3. Creating and Using Green Space Standards
4. Financial Sustainability
5. Consistency and Collaboration
6. A Supportive Land Use System
7. Meaningful Stakeholder Input
8. Budget Projections and Implementation

A consistent theme identified during the consultation component of this project was a commitment from Council, City Administration and the Public to place a priority on green space within our city. The park system in Yellowknife is the pride of the community, and we work collectively to ensure that it is a high priority in everything we do.

The success of an Integrated Parks, Trails and Open Space Development Study is in the implementation. Three levels of commitment are required to see 'on the ground' results – a political commitment, a commitment by City Administration, and commitment from the public at large.

Residents of Yellowknife are very active and enjoy a common love for the outdoors. It is this appreciation that creates an opportunity for the City to re-create itself as a healthy active community.

Health Canada's strategic plan for health promotion incorporates the concept of healthy communities into an overall plan for health promotion. It includes health as part of everyday living and considers the challenges of reducing inequities, extending the scope of prevention and helping people to cope with their circumstances in order to create environments in which people are better able to take care of themselves. This view of health is grounded in concepts such as the power of freedom to choose, in addition to the valuable role of individuals and communities in creating healthy environments.

Alberta, British Columbia, and Ontario currently have active community programs in place or under development. The remainder of provinces and territories will follow this direction over the next few years. An active community fosters healthy and active lifestyles for its residents. They ensure that a supportive base of opportunities and resources are available within sustainable environments. Through the study and implementation of the Parks, Trails and Open Space



Development Plan, the City of Yellowknife has recognized the importance of green space and healthy living.

Identified below are some of the broad based levels of commitment required to move this project forward.

### **1.1 Non-vehicular Commuter System**

In North America, there is a shift towards increased livability and healthy lifestyles. Livable communities include the use of mass transit and access to other alternative means of mobility. Evidence is mounting that automobile-oriented land use policies reduce transportation choice, adversely affect air quality and safety, and discourage physical activity.

Studies show that mixed land use patterns influence the amount of walking and biking trips by as much as four times. Community parks, trails, and greenways are central to the facilitation of active transportation..

In Yellowknife cross country skiing and snowmobiling compliment the list of other transportation choices. Snowmobiles, specifically, require access to Great Slave Lake. Current informal snowmobile routes allow for this access. At specific points in the City's trail system the snowmobile route intersects with other established trails. The use of signage and open communication has helped alleviate many potential trail conflicts and accidents between users.

The City has a solid foundation for a system, but it needs to make a commitment to completing it. Community direction for a commuting system includes are enshrined below.

#### **1.1.1 Recommendation:**

The City of Yellowknife creates a system of pathways that form a non-motorized commuting system while recognizing the use of snowmobiles in the winter months. Specific recommendations, as detailed in Appendix B Vision 2015 Map are:

1. Recognize established informal snowmobile and cross country skiing routes within the City when planning for new development.
2. Continue the positive relationship between user groups to address issues of safety on trails through provision of signage and education.

3. Develop a safe crossing point at Highway 4 near the entrance to the Legislative Assembly site, which would join the Frame Lake Trail and the Niven Lake Trail. Safe crossing will also be used by snowmobiles and dog mushers in the winter months.
4. Create a multiuse non-vehicular trail around the area known as the "Airport Loop."
5. Establish a safe crossing point at the junction of Highway 4 and Highway 3. This crossing would connect the ski club trails to the Airport Loop Trail. Safe crossing will also be used by snowmobiles in the winter months.
6. Establish a safe crossing between the Fred Henne campground and Highway. This crossing would connect the Frame Lake Trail with the Fred Henne Campground and the proposed Airport Loop Trail.
7. Establish a safe crossing point at the intersections of Kam Lake Road, Old Airport Road, Taylor Road and Franklin Avenue.
8. Recognize the established informal pathway system and areas of ecological importance around Tin Can Hill when planning for new development.
9. Ensure the proposed trail system for Twin Pine Hill provides for connections to School Draw Avenue and 50th Avenue.
10. Recognize the informal pathway system behind the Racquet Club, which connects the Back Bay Area to the Niven Lake Trail.
11. Investigate the feasibility of developing a "Mine to Mine" all-season pathway between Negus Point and Giant Mine, with connections to neighborhoods, and recognition of areas of ecological importance, along the way
12. Protect a visual and non vehicular connection between the sliding hill (between 51st and 50A Avenue) and Tin can Hill. In order to maintain this connection the park located between Burwash Drive and Con Road must have a formalized trail in the event that this site is developed.
13. Recognize the value of trails available at the Ski Club in both winter and summer months.

14. Develop a downtown green space as part of the Frame Lake Trail system which encompasses the Gerry Murphy site and Samba'ke Park, and Mildred Hall School.
15. Develop green space and trail system that will allow for travel by pedestrians and preservation of natural areas near Grace Lake. Ecologically important areas around Grace Lake must be considered in the trail design.
16. Provide signage, including a trails map, between Range Lake Trail and Frame Lake Trail, specifically at the junction of Borden Drive and Old Airport Road indicating the location of the underpass, which connect the trails.
17. Recognize the opportunities to connect future Multiplex site trails with informal trails located between Taylor Road and Ptarmigan Road. This trail would exit on Ptarmigan Road and should include signage and mapping direction to the Tin Can Hill informal trail network. The trail can follow the current informal snowmobile trail in this area.
18. Other proposed Multiplex site trails should be considered for connection into any future development of the Con Mine site once its remediate to acceptable standards.
19. Investigate the terrain around Range Lake and the feasibility of completing the trail around the lake. Ecologically important areas around Range Lake must be considered in the trail design.
20. In consultation with the Ski Club and residents of Niven Lake, investigate the suitability of providing trail connections from the Niven Lake Trail, through the subdivision, to the Ski Club. Ecologically important areas around Niven Lake and the Ski Club must be considered in the trail design.
21. Extend current bike trail along Kam Lake Road to the proposed trail around Grace Lake by providing additional signage along Kam Lake road in order to connect to the proposed Grace Lake trail.
22. Investigate the cost of designing a dedicated bike lane along Kam Lake Road which will require road widening and paving.

## **1.2 Implementation of Waterfront Plan**

Through the development of the waterfront, the City of Yellowknife has the opportunity to create a significant economic, environmental and social impact. By capitalizing on its historical legacy, the waterfront provides the opportunity for the City to attract visitors, new residents and business. It is also an important resource in protecting environmentally important areas, notable views and educating people about the rich history of Yellowknife and its unique characteristics and diverse elements.

Significant work has taken place over the recent past that supports decisions made for access to waterfronts. From a clause in lease agreements to recommendations contained in prior plans, Council and administration have what is needed to ensure that public access to waterfront maintained.

### **1.2.1 Recommendation:**

1. That the City recommits itself to the implementation of the Waterfront Plan and the targeted date of 2008 for completion.
2. That the City recognizes the Waterfront Management Plan as an integral part of the Integrated Parks, Trails and Open Space Development Study.

## 2 ECOLOGICAL PROTECTION

1. Political Administrative and Public Commitment
2. Ecological Protection
3. Creating and Using Green Space Standards
4. Financial Sustainability
5. Consistency and Collaboration
6. A Supportive Land Use System
7. Meaningful Stakeholder Input
8. Budget Projections and Implementation

A key component of this study included the identification of ecologically sensitive areas of our community. Based on both scientific and local knowledge of Yellowknife, seven key areas that require significant protection were recognized.

- Back Bay/Giant Mine Area
- Negus Point/Tin Can Hill Area
- Kam Lake
- Niven Lake
- Jackfish Lake/Frame Lake
- Joliffee Island
- Range Lake

These seven key areas of the community are identified below with specific recommendations for planning, enhancing and protecting these special parts of our City. In addition to these main areas, the Willow Flats area is addressed in the Ecologically Sensitive Areas Map as an ecological preserve, and all shorelines are deemed to be protected already through provisions in the zoning by-law.

One commonality between all seven areas is the presence of a wetland area. Wetlands are rich in nutrients and teem with more life than most people suspect. Wetlands can also be described as ponds, marshes, swamps or peat bogs to name a few. They act like giant sponges, soaking up rain and snowmelt and slowly releasing water in drier seasons, reducing floods and easing the worst effects of drought. They also act as the “kidneys” of the natural environment, and help to remove harmful substances from our water sheds.

Wetlands provide habitat for a wide variety of creatures, ranging from one-celled protozoa to the massive moose. Most importantly, they provide essential habitat to resident and migratory

birds. Wetlands provide habitat to a diverse group of insects and animals, and are key components to a healthy ecosystem.

## **2.1 Back Bay/Giant Mine Area**

Included in this area is the Yellowknife Ski Club, which has secured a 30-year lease on a region adjacent to Highway No. 4 and bordering the Back Bay area. Because of its' close proximity to the city landfill, numerous animals take refuge in this protected area. The ravine extending from Jackfish Lake to Back Bay provides a safe haven for animals such as red fox, snowshoe hare, willow ptarmigan, lynx and coyote. Although this drainage system has only intermittent flows, it provides adequate water to create a lush riparian area with diverse aquatic vegetation and wildlife. The topography at this site provides steep rock cliffs suitable for nesting birds, and also provides a good vantage point for predators. The up draughts created by the cliffs attracts several bird species including ravens.

Aside from the wildlife aspect, there are also several unique landforms located within the ski club lease area. These include volcanic pillows, fault lines, and the ice falls.

The rocky shoreline along Back Bay is reportedly used frequently by numerous California gulls and herring gulls for roosting and staging, especially during the spring season. This area may also be an important feeding ground for water birds, perhaps feeding on emerging fresh-water fish species.

Baker Creek flows into Back Bay, near the pier and boat launch. This creek is known for providing spawning habitat for local sport fish, including northern pike, burbot and Arctic grayling (Dillon, 2002). The nearby wetlands provide prime habitat for aquatic insects, benthic invertebrates and waterfowl.

Fault Lake also lies within this area, and is part of the Yellowknife Cross-country ski trail system. It is a shallow eutrophic lake, providing an extensive littoral region suitable for waterfowl, song birds, amphibians, insectivores and rodents. In addition, large carnivores most likely frequent this area, as it would provide a variety of prey.

### **2.1.1 Recommendation:**

1. Protect ravine area between Jackfish lake and Back Bay
2. Recognize the provision in the Zoning By-law No. 4024 which provides a 50m nature preservation zone around all water bodies.
4. Protect wetland area at mouth of Baker Creek
5. Use boardwalks around wetlands to preserve the integrity of the natural vegetation
6. Protection of Back Bay cemetery
7. Protection of the Ice Falls
8. Where sensitive shoreline habitats occur, the City should adopt a signage program that is common around the lake system and which could be incorporated with the assistance of local landowners, business owners and community groups (signage stewards).

## **2.2 Negus Point/Tin Can Hill**

The Negus and Tin Can Hill area is located in the southeast corner of the city limits between Great Slave Lake and Kam Lake, and is currently largely undeveloped. Several leases exist at Negus Point for residential properties. Recently the City has entered into an agreement with the residents of the Con Mine and Rycon Trailer parks. Presently, there are no formal green spaces, trails or parks. This site has generated the most feedback from the individuals and organizations that took part in the ecological portion of the survey. The general consensus was that this area provides excellent opportunities for hiking, biking, dog-walking and nature appreciation, thus it should be preserved as a green space.

Rat Lake is a shallow, eutrophic lake with a well-vegetated shoreline. It provides aquatic habitat for waterfowl, song-birds, amphibians, rodents and insectivores. A fisheries inventory of the lake does not exist.

The area known as Tin Can Hill is sparsely vegetated, and offers little habitat for larger mammals. However; Environment and Natural Resources staff has identified this area as a known den site for the local fox population. It is speculated that this area cannot provide the "artificially high" fox population with a natural food supply, and that the animals are foraging on unnatural food sources such as human refuse.

There are roughly 6 km of shoreline along the Great Slave Lake at this site. Currently this area is undeveloped (except at Negus Point), and is often used as a travel corridor for black bears. The animals following the shoreline are "funneled" into the city, resulting in human/wildlife encounters.

### **2.2.1 Recommendation:**

1. Protect Rat Lake and surrounding area to promote use by waterfowl and other aquatic wildlife.
2. Create a boardwalk along shoreline of Rat Lake, enabling public to access the area without causing harm to the sensitive habitat. Make a formal connection from the boardwalk to the trail system on Tin Can Hill.
3. Allow for continued multi-use by various user groups (all season trails)
4. Consider surrounding green space within future developed area, creating a “barrier” to wildlife passage (avoiding the “funnel effect”).
5. Enforce Bylaw on storage of garbage and household refuse, discouraging scavenging by wildlife
6. Study the feasibility of developing a walking trail from Negus point to Giant Mine Site, incorporating signage about heritage sites and natural areas. The feasibility study should provide detail on ecological sensitivities of this area.

### **2.3 Kam Lake Area**

The Kam Lake area is located on the far southwest corner of the city limits, and is used as both an industrial park and a residential area. Two main water bodies are included in this site, Kam Lake and Grace Lake. The shoreline of Kam Lake is Government Reserve land and has been set aside as a Natural Preserve. Aside from this allocation, no formal trails or recreation areas exist.

The undeveloped lands within this area are frequented by several wildlife species. Wolves are known to enter the city limits at this site, presumably attracted by the numerous dog kennels. Fox are also very common here, and den sites likely exist in the surrounding undeveloped areas.

Kam Lake is known to contain sport fish, including northern pike, walleye and burbot. The numerous islands and the irregular shaped shoreline provide prime habitat for a myriad of aquatic wildlife and vegetation. Grace Lake is a shallow water body with a vast littoral zone, providing an extension to the habitat provided by Kam Lake. There is a small connective stream between the two water bodies, and they conceivably share the same fish populations. It is likely that Grace Lake provides rearing habitat for juvenile northern pike and walleye.



### **2.3.1 Recommendation:**

1. Recognize the provision in the Zoning By-law No. 4024 which provides a 50m nature preservation zone around all water bodies.
2. Develop a green space and trail system that will allow for travel by pedestrian and preservation of natural areas near Grace Lake.
3. Protect peat land bog located at end of Kam Lake road
4. Use signage to educate public on local wildlife species and nature preservation
5. Ensure garbage receptacles are readily available at convenient locations for public use.
6. Regular maintenance and garbage collection is essential for both aesthetics and to control scavenging by wildlife.

### **2.4 Niven Lake Area**

The Niven Lake area is located on the northwest side of Yellowknife. It is a newly developed residential area, which borders Highway 4, the Yellowknife Ski Club and Back Bay. There are existing areas set aside for trails, natural preserves and parks and recreation.

Niven Lake is often referred to as Yellowknife's best wildlife viewing area by many local naturalists. Throughout May and June, this wetland may attract over 50 species of ducks, geese, gulls, terns and shorebirds which gather in the hundreds. The marsh, surrounding shrublands and forested areas provide habitat for numerous perching birds, muskrats and other typical sub-arctic wildlife (Bastedo, 1996).

The north end of this development borders the land secured by the Yellowknife Ski Club. As mentioned previously, numerous wildlife species inhabit this area which has been designated for parks and recreation. Conflict could arise as the Niven Lake development approaches the border of this protected area.

The shorelines surrounding Niven Lake and Back Bay provide habitat for aquatic wildlife, and add to the scenic beauty of the area. The trail system around Niven Lake provides opportunities for both active and passive activities, including: hiking, biking, wildlife observation, photography, educational programs, and nature appreciation.

#### **2.4.1 Recommendation:**

1. Implementation of the Niven Lake Development Scheme
2. Implementation of the Waterfront Management Plan
3. Continued use of signage to educate public on local wildlife species and nature preservation.
4. Ensure garbage receptacles are readily available at convenient locations for public use, and that garbage is removed regularly.

#### **2.5 Jackfish Lake/Frame Lake**

Jackfish Lake is located at the north end of Yellowknife, where Highway 4 and Highway 3 come meet. The lake is used for cooling purposes of the N.W.T. Power Corporation Jackfish Diesel Plant. The lands around this water body are currently designated as Natural Preserve, and there is a trail system located at the west end of the lake.

Directly to the south of Jackfish Lake lies Frame Lake. The majority of this lake's shoreline is designated Natural Preserve or Parks and Recreation. There is a formal trail system in place, which extends around the entire perimeter of the lake, with connections to Range Lake, Downtown, and Jackfish Lake.

The lakeshores and adjacent terrain around Jackfish and Frame lakes include everything from long stretches of flat sandy beach to rugged bedrock cliffs over thirty meters high. The undulating topography and varied aquatic habitats found here contribute to this area's diversity of plant communities and wildlife (Bastedo, 1996).

Frame Lake provides breeding, staging and feeding habitat for numerous species of waterfowl and shorebirds. Aside from birds, there are several large and small mammals that utilize this area, including muskrat, beaver, snowshoe hare, red fox, wolf and coyote. It should also be noted that frogs inhabit the area in and around Frame Lake. This is of great importance as there are only three species of frogs in the NWT, two of which their status is listed as "sensitive" by NWT Species, 2000.

Environment and Natural Resources staff reported that the majority of wolf and coyotes sightings within the city limits of Yellowknife occur in the Frame Lake area. Wildlife travel from the undeveloped area north of Highway 3, south to the Natural Preserve areas surrounding Jackfish Lake and Frame Lake. The layout of the green spaces in conjunction with the developed areas forms a natural corridor to the downtown area of Yellowknife. Concern was

expressed by Environment and Natural Resources officers that these occurrences may lead to unfavorable encounters between humans and wildlife.

Jackfish and Frame Lake are within the “Capital Area” as demarcated on the maps that accompany this policy document. Lands within the Capital Area are administered under the Capital Area Development Scheme. The Scheme, being an instrument of the *Planning Act* of the Northwest Territories, provides the conceptual and management framework within which future development and preservation of the Capital Area will occur, The Scheme also reinforces the image of the City of Yellowknife as the capital of the Northwest Territories.

In addition to the ecological and political importance of this area, Lakeview cemetery is located off Old Airport Road and between Jackfish and Frame Lakes. The cemetery is defined as a park, as per the Zoning By-law and the Parks and Recreation By-law.

### **2.5.1 Recommendation:**

1. Construct deflective gates on trails to cause wildlife to veer off of path and in order to avoid entering the city core.
2. Recognize the provision in the Zoning By-law No. 4024 which provides a 50m nature preservation zone around all water bodies.
4. Establish a connection between the Frame Lake trail system and the ski club
5. Ensure garbage receptacles are readily available at convenient locations for public use, and that garbage is removed regularly
6. Enforce refuse storage bylaw
7. Continued use of signage to educate public on local wildlife species and nature preservation

### **2.6 Joliffe Island**

Joliffe Island is located in Yellowknife Bay, and while the entire island is classified as ‘Parks and Recreation’ people do live on the island. It has several waterfront attractions, including day-use areas, heritage sites and viewpoints.

Joliffe Island is a common destination for picnicking, bird-watching and rock-hounding. It offers visitors the opportunity to enjoy an abundance of diverse plant-life, small mammals, diving birds, song birds, and waterfowl. The area is used in both summer and winter months, by outdoor enthusiasts and naturalists.

### **2.6.1 Recommendation:**

1. Implementation of the Waterfront Management Plan

## **2.7 Range Lake and Area**

Range Lake is currently designated as a Natural Preservation area, with two adjacent Parks and Recreation areas. This area has been identified as a key migration area for numerous arctic bird species, such as the Golden Plover. The shallow waters and lush shoreline vegetation provide excellent habitat for resident and migratory waterfowl, perching birds and shorebirds. Aside from its importance as a nesting/staging area for birds, it also provides important habitat to amphibians, rodents, insects and other small mammals and aquatic life.

### **2.7.1 Recommendation:**

1. Recognize the provision in the Zoning By-law No. 4024 which provides a 50m nature preservation zone around all water bodies.
2. Ensure garbage receptacles are readily available at convenient locations for public use, and that garbage is removed regularly
3. Enforce refuse storage bylaw
4. Continued use of signage to educate public on local wildlife species and nature preservation
5. Extend trail system around lake, using boardwalks to protect sensitive shoreline habitat.

**3 CREATING AND USING GREEN SPACE STANDARDS**

1. Political Administrative and Public Commitment
2. Ecological Protection
3. Creating and Using Green Space Standards
4. Financial Sustainability
5. Consistency and Collaboration
6. A Supportive Land Use System
7. Meaningful Stakeholder Input
8. Budget Projections and Implementation

An established and approved level of service (a standard) must be defined in order to provide meaningful budget projections as well as operational and maintenance costs. These standards will guide the creation of a park system and help alleviate public uncertainty regarding the City's commitment to green space. A level of park and green space service should identify different types of trails to accommodate different types of users. Detailed below are the specific steps that must be taken to create and use green space standards.

**3.1 Update Existing Standards to be approved by Council**

The standards proposed in the 1995 community services plan have not received formal adoption. As a result there is no clear understanding of the City's plan for developing parks.

In 1995 it was recommended that standards and guidelines will be used by the City to plan for the future and determine parks/facility requirements for new sub-divisions. For example, three levels of park services were identified (described below) and can be use to guide the development of future parks and the impact of park re-zoning.

Neighborhood Parks

Neighborhood Parks generally provide for playground opportunities, informal play areas and passive walkway and seating areas. Neighborhood parks are usually developed in concert with an elementary school and can be defined by the following criteria:

- Catchment area ½ km radius
- 1 site per 1,000 – 2,000 population
- Approximate size 0.8 hectares (2.0 acres) – 2.4 hectares (6 acres)
- 1.2 hectares per 1,000 population or 3 acres per 1,000 population

### Community Parks

Community Parks are areas normally made up of a number of urban neighborhoods. The park would probably be associated with a secondary school and would include playfields, passive open space and community facilities. Community parks can be defined by the following criteria.

- Catchment area ½ or 1½ km radius
- 1 site per 6,000 – 8,000 population
- Approximate size 4 hectares (10 acres) – 6 hectares (15 acres)
- 0.8 hectares per 1,000 population or 2 acres per 1,000 population

### District Parks

District Parks usually provide for high activity sport fields, tennis courts, change facilities and major indoor facilities.

- Catchment area 5 km radius
- 1 site per 15,000 population
- approximate size 4 hectares (10 acres) – 12 hectares (30 acres)
- 2.0 hectares per 1,000 population or 5 acres per 1,000 population

The Facility Access Map (attached) provides a visual representation of each level of park service described above, and shows distance to each from all areas of Yellowknife.

### Natural Area – Open Space

Natural areas include ravines, watersheds and flood plains, which are not suitable for active recreation. Also included in this category are lands protected in order to preserve significant environmental landscape or ecological features. They are maintained largely in their natural state.

### Outdoor Facility Standards

As part of the park development scheme, outdoor facilities also require standards to ensure that the City builds and maintains a good level of amenities that keeps pace with growth.

1995 Definitions

Population	targeted population for each facility
Travel Distance	maximum distance to be traveled
Operational Effectiveness	existing facilities must accomplish the position of operational effectiveness before new facilities are considered existing fields must have reached a minimum of the percentage of prime time use before new facilities are considered

Outdoor Facilities

	Population Ratio	Travel Distance	Operational Effectiveness
Fastball	1 / 7,500	5 km	80% prime time use
Slow pitch Field	1 / 3,000	5 km	80% prime time use
Football Field	1 / 20,000	5 km	80% prime time use
Soccer Field	1 / 5,000	5 km	80% prime time use
Track & Field Stadium	1 / 25,000	City Wide	100% prime time use
Tennis Court	1 / 3,000	5 km	90% prime time use

Maintenance

Class A	high standard of care, substantial horticultural program and irrigation (100%)
Class B	moderate standard of care, average horticultural program and irrigation (90%)
Class C	undeveloped turf maintenance program
Class D	little to no maintenance

**3.1.1 Recommendation:**

That the City reviews, update, and adopt the standards set forth in the 1995 community services plan and use these standards to help guide budget commitments and implementation of the Integrated Parks, Trails and Open Space Development Study.

**4 FINANCIAL SUSTAINABILITY**

- 1. Political Administrative and Public Commitment
- 2. Ecological Protection
- 3. Creating and Using Green Space Standards
- 4. Financial Sustainability
- 5. Consistency and Collaboration
- 6. A Supportive Land Use System
- 7. Meaningful Stakeholder Input
- 8. Budget Projections and Implementation

The level of parks, trails and open space standards identified in the previous section must be financially sustainable in the long term. The following section identifies specific recommendations on the importance of financial sustainability and commitment. Budget projections for the implementation of large scale projects associated with recommendations of this study are presented in Section 8.

**4.1 Financial Commitment to Creating and Maintaining Green Space**

Green space is an important economic contributor. An attractive, well planned green space system offering opportunities for a diversity of experiences; from passive activity such as relaxing and bird watching to active activities like cross country skiing and sports; make a community attractive to new residents and businesses which contribute to economic growth. Green spaces are also important in relation to increasing and maintaining property values. Furthermore, parks and open spaces cost less to operate and maintain than other public infrastructure.

The sustainability of any municipal development is influenced by a number of factors; such as economy, population growth and demographics. Furthermore, the management and operation of green spaces must also be concerned with environmental matters such as trends in climate change, wildlife issues and preservation. A green space system will require the commitment of the City and other stakeholders to be effective. Developing a quality system that can be sustained from a capital and operating cost perspective is critical. Jointly, the City and community need to create a plan that balances needs/wants with the ability to maintain the assets at a high standard into the future.

**4.1.1 Recommendation:**

That the City commits long- term resources to implement an acceptable level of parks, trails and open space service.



**5 CONSISTENCY AND COLLABORATION**

1. Political Administrative and Public Commitment
2. Ecological Protection
3. Creating and Using Green Space Standards
4. Financial Sustainability
5. Consistency and Collaboration
6. A Supportive Land Use System
7. Meaningful Stakeholder Input
8. Budget Projections and Implementation

Members of the consulting team worked with City Administration to ensure that the Parks, Trails and Open Space Study lead by the Community Services Department would enhance the Residential Growth Study currently being undertaken by the Planning and Lands Department. The recommendations in this section only address trail connectivity in and around Yellowknife, not the merits of the actual land development project.

Of particular concern to the Parks, Trails and Open Space Study was the prioritized areas of residential Growth that may eventually result in the re-zoning of lands from parks to residential.

Rank	Site#	Description
The following areas have been identified for development within the next 1-2 years.		
1	1	Twin Pine Hill/Bartam Trailer Court
3	5	Burwash Drive and Con Road
4	9	Balsille Court
The following area has been identified for development within the next 10-15 years		
1	14	Tin Can Hill

### **5.1 Twin Pine Hill/Bartam Trailer Court**

Future development of this area is guided by the intent to reinforce the unique character of Old Town and encourage the rehabilitation and redevelopment of this area. The City's goal is to enhance and respect the area's historical role in the community and preserve its distinct environmental features. As indicated in the Residential Growth Study, a portion of the land area comprising the Bartam Trailer Court site is outlined to be set aside for parks and open space.

In the Parks, Trails and Open Space Study this site is identified as a model for future development. Preliminary trail layout has been submitted to the Planning and Lands Department.

#### **5.1.1 Recommendation:**

Trail connections to School Draw, Franklin Avenue, St. Pat's School, and 52nd Avenue should be created.

### **5.2 Burwash Drive and Con Road**

Trees and bushes cover approximately 50% of this site and the Residential Growth Study indicated that there is evidence of informal trail activity on this site. The flat rock area has potential to provide views of the surrounding neighborhood. The study indicates that blasting and filling will be required for any residential development on this site.

#### **5.2.1 Recommendation:**

Site design should be done through a Development Scheme. Trail connections need to be formalized through this site to maintain a connection between Tin Can Hill and the Sliding Hill between 51st and 50A Avenue. Retaining a portion of this site as park land will maintain the 'neighborhood' access as identified in the Facility Access mapping development for the Parks, Trails and Open Space Study.

### **5.3 Balsille Court**

Green space planning or trail connections were not within the scope of the Residential Growth Study and as such no planning or connections are indicated for this future development area.

### **5.3.1 Recommendation:**

Connections to the community park site on Hordal Road need to be created. Existing snowmobile routes within this NP zone should be maintained and incorporated into the development scheme for this site.

## **5.4 Tin Can Hill**

The Residential Growth study described this Growth Management Zones as rugged bedrock and muskeg with high rock outcrops. This area offers good views of Yellowknife Bay with limited vehicle access. The high rock cliffs along the water can be a good location for a walking trail with viewpoints. The Study indicates that development of this site will require significant blasting to establish roads and services.

The Growth Study also references the Waterfront Management Plan which identified the need to improve accessibility to the shoreline along Tin Can Hill by developing a boat launch, waterfront park and creation of a trail system with viewpoints. The plan outlines that the City will regain public access to the waterfront and that there are measures to protect the natural attribute of this area.

### **5.4.1 Recommendation:**

The Parks, Trail and Open Space Plan identifies Tin Can Hill as a model for development. Existing uses which include: snowshoeing, skiing, off leash dog walking, motorized vehicle use and walking must be incorporated into the development scheme for this area. In addition, the trail connections to School Draw, Rycon, Great Slave Lake, Con and Rycon Trailer Court must be maintained when developing this area. The implementation of the Waterfront Management to ensure consistency with all policy documents.

A development scheme should be used in order to protect the current informal uses of this site and to accommodate for future development of this area. Trail right or ways need to be identified and registered in order to protect trails if more intense development is to occur on Tin Can Hill

**6 A SUPPORTIVE LAND USE PLANNING SYSTEM**

- 1. Political Administrative and Public Commitment
- 2. Ecological Protection
- 3. Creating and Using Green Space Standards
- 4. Financial Sustainability
- 5. Consistency and Collaboration
- 6. A Supportive Land Use System
- 7. Meaningful Stakeholder Input
- 8. Budget Projections and Implementation

In order to move ideas forward, an implementation strategy must combine land use planning and recreation planning. Throughout this document we have ensured consistency with, among other documents, the 2004 General Plan, the 2005 Residential Growth Study, and the 2001 Waterfront Management Plan. Asset identification and protection, strengthening City By-laws, establishing a Green Space Footprint (%), as well as creating a new green space which include the Gerry Murphy site/Samba'ke Park are detailed below as key areas of planning.

**6.1 Asset Identification and Protection**

The City of Yellowknife has the opportunity to take a Smart Growth approach to future development. Smart Growth is an approach or group of policies to manage sprawl and to protect open spaces and maximize the use of existing infrastructure investment, in addition to encouraging a wide range of housing options and costs.

Green infrastructure identification is a vital aspect of smart growth. It provides a framework for strategically planning and protecting green spaces that conserve ecosystem values and functions and provide associated benefits to humans.

As the City grows it will become ever more important for its open space and park assets to be inventoried and mapped.

**6.1.1 Recommendation:**

- 1. That the City builds on this current document by maintaining a green space inventory, assessment, and mapping program for the entire park system.

## 6.2 Strengthening Legislation

For the park system to be developed and maintained at a high standard, updating and enforcement of some existing bylaws are required. Specifically, a trail usage bylaw is needed which brings together current by-laws which address litter and snowmobiling.

Under the current *Planning Act*, Council has the ability to re-zone any parcel of land within the municipal boundary. The City of Yellowknife also has a General Plan which is intended to help guide the City's changing demand for land and services. The City of Yellowknife must work within this framework to protect the public interest as it relates to the provision of high quality recreational opportunities and open space

This current framework provides the City with opportunities to accomplish the goal of an integrated parks, trails and open space plan. The use of a development scheme can bring together various land use interests can implement standards (once approved) in any new developments occurring in the City. Through a development scheme the location of trails, parks and open space can be identified and protected.

### 6.2.1 Recommendation:

1. That the City works with the Government of the Northwest Territories to create stronger requirements in the NWT *Planning Act* to recognize and protect green space.
2. That the zoning by-law specify developer requirement for useable land for trails and park development.
3. That the City updates the landscape definition and requirements in the zoning by-law.
4. That the City uses a development scheme approach to all new subdivision developments in order to implement parks, trails and open standards.
5. That the City develops and implements a trails usage by-law which consolidates the regulations of the littering and snowmobiling bylaws, and other related by-laws which impact trails.

### **6.3 Establish Green Space Footprint (%)**

Reserved green space is becoming an essential aspect of the most livable communities. Green spaces are credited with offering whole communities the opportunity to experience economic, physical, mental and social benefits.

Green space may include parks and preserves, linkages, corridors, green belts, hubs and regional parks. In Canada there are standards addressing the quantity of green space it generally ranges from .7 to 6 hectares/1000 people and averages 2.79 hectares/1000 people), however there are very few standards addressing the quality of green space. Yellowknife's unique geographical situation may also require the consideration of such things as the quality of the landscape, ecological health and biodiversity, appropriate of design for diverse users and activities, interpretive and educational programming and the amount of green space in the surrounding region.

The General Plan indicates that Yellowknife is situated on 13,660 ha (136 km<sup>2</sup>). Residential development covers 40% of this area, 20% is designated for recreational use, 4% institutional/community use, 20% transportation/infrastructure, 4% commercial and 12% is used for industrial purposes. A recent evaluation revealed that 24% of the municipal land is covered by water, leaving a total of 76% of useable land area.

The General Plan also identified a recreation/open space land demand projection with a ratio of 17.5 ha/1000 population as the target. Utilizing this ratio and population projections, the City will require an additional 99 hectares by 2019.

Additionally, the General Plan indicates that approximately 30% of the area within the municipal boundaries is not developable, and as a result could be incorporated into the green space plan as well.

#### **6.3.1 Recommendation:**

1. That the City establishes a percentage of land within the municipality which is defined as a green space footprint.

## **6.4 Samba'ke & Frame Lake Trail Area**

Civic squares are enjoying a strong resurgence in public life. Officials and citizens are realizing and placing value on the vitality that these areas can create. In addition to the social benefits gained through the chance meetings and common experiences that create a sense of community, they provide economic benefits through the inclusion of area institutions and businesses.

Yellowknife residents have indicated the desire for a city centre park that could meet diverse needs such as open space suitable for passive activities, a festival area, interpretive trails and ornamental gardens. The City has an excellent opportunity in the Capital Area to create this vision of a fun, festive, convenient and secure focal point. Encompassing about 330 ha, the Capital Area is Commissioner's land bounded by Highway #3 to the north, downtown to the south, Old Airport Road to the west and the Yellowknife Access Road to the east.

With consideration to seasonal activities and flexible design, the City Green Space could incorporate local organizations such as schools, the old Gerry Murphy Arena site and City Hall which are on Frame Lake adjacent to the Capital Area. This would provide ample opportunity to provide a range of places and activities to draw people throughout the year. This area is governed by the Capital Area Development Scheme and as such would be reflective of the all peoples of the Northwest Territories.

City Green Spaces provide communities with lively, vibrant spaces to showcase local artists and performers. This space helps educate residents and visitors about the area and increases their environmental awareness. They can also provide convenient tranquil places for reflection and reconnection.

People are able to relax, socialize or be entertained within a variety of well thought out spaces.

### **6.4.1 Recommendation:**

1. That the City partner with local organizations to develop a City Green Space that includes the Gerry Murphy Site/Samba'ke Park.

## 7 MEANINGFUL STAKEHOLDER INPUT

1. Political Administrative and Public Commitment
2. Ecological Protection
3. Creating and Using Green Space Standards
4. Financial Sustainability
5. Consistency and Collaboration
6. A Supportive Land Use System
7. Meaningful Stakeholder Input
8. Budget Projections and Implementation

Ongoing community consultation is critical to the future of the park system. Residents and local organizations have a role to play in the planning, building and maintaining of successful green space projects.

### 7.1 Ongoing Stakeholder Involvement in Parks Planning & Development

A review of trends indicates that leading park systems in North America consider public involvement in the development and operation of parks to be a fundamental success factor. Involvement of the general public may include the formation of a park specific advisory group consisting of stakeholders and member of the public at large, user group representation on a planning committee and Town Hall meetings.

Developing a local institution within a green space is a current trend in green space planning. The City of Yellowknife has an opportunity benefit from partnerships with public, not-for-profit and private sector groups to develop the green space system. The Rotary Park is a prime example of positive partnerships in our community. Some additional examples of partnership links include:

#### Boards of Education

For the provision of programs in outdoor activities such as sports, orienteering, environmental education, out door theater performances and winter recreation activities

#### General Public

Members of committees, volunteers, user group involvement



Adopt-A-Park Program

Residents gain a sense of custody and ownership by contributing to the development and maintenance of their local parks

Corporate Sponsorship

Fund development through strategic corporate sponsorship in exchange for an appropriate presence in a park.

**7.1.1 Recommendation:**

1. That the City of Yellowknife provides opportunities for public involvement in green space planning.
2. That the City of Yellowknife makes use of public open houses, community focus groups and public review of development plans for future subdivisions.

## 8 BUDGET PROJECTIONS AND IMPLEMENTATION

1. Political Administrative and Public Commitment
2. Ecological Protection
3. Creating and Using Green Space Standards
4. Financial Sustainability
5. Consistency and Collaboration
6. A Supportive Land Use System
7. Meaningful Stakeholder Input
8. Budget Projections and Implementation

The focus of this plan is twofold; to ensure that there is sufficient green space available to meet the long- term needs of residents and to develop a trail system that enables residents to move freely throughout the community without a vehicle.

The information on the following pages provides budget projections and estimated costs of the major recommendations within this report. All estimations are based on the current assumptions:

- Prices are current at of April 2005
- Estimates are based on input from the City of Yellowknife Administration, local suppliers, and the actual current cost of trail and road development in Yellowknife.
- Detailed specifications and sign design will impact the actual cost
- These estimates are provided to the City as a general idea of the magnitude of costs associated with the recommendations presented in this policy document.

### 8.1 Park Acquisition & Trail Development Costs

Trail Development Costs									
Trail #	Description	length	type	Clearing Width	Tread Width	Surface	\$/m	total cost	
1	Old Town Connection	278	Multi-use	3.5 - 4 m	2.5 m	Paved	\$127.00	\$35,400.00	
2	Niven Lake	699	Multi-use	3.5 - 4 m	2.5 m	Paved	\$127.00	\$89,000.00	
3	Niven Lake	207	Multi-use	3.5 - 4 m	2.5 m	Paved	\$127.00	\$26,300.00	
4	Great Slave Lake	12,178	Natural	3.5 - 4 m	2.5 m	Gravel	\$77.00	\$940,000.00	
5	Joliffe Island	1,249	Interpretive	3.5 - 4 m	2.5 m	Gravel	\$77.00	\$97,000.00	
6	Airport Loop	5,263	Multi-use	3.5 - 4 m	2.5 m	Paved	\$127.00	\$670,000.00	
7	Grace Lake	6,700	Natural	3.5 - 4 m	2.5 m	Gravel	\$77.00	\$520,000.00	
8	Twin Pine Hill	Trail 8 and 9 details are undetermined at this time as they are part of a larger development scheme process							
9	Tin Can Hill								
<b>Total</b>									<b>\$2,377,700.00</b>

Length - Estimate of lengths that would work for the trail system based on actual mapping

Type - Utilized information from the previous master plan and community input

Clearing Width/Tread Width - Based on past experience of successful trail development projects

Surface - Based on past experience of successful trail development projects

\$/lineal meter - Based on actual numbers in Yellowknife

## 8.2 Estimation of Trail Connection Costs

Recommendation	Estimated Cost
Safe crossing point at Highway 4 near the entrance to the Legislative Assembly site <ul style="list-style-type: none"> <li>• pedestrian crossing</li> <li>• overhead signs and flashing light</li> <li>• does not include power supply</li> </ul>	\$5,000.00
Safe crossing point at the junction of Highway 4 and Highway 3. This crossing would connect the ski club trails to the Airport Loop Trails <ul style="list-style-type: none"> <li>• pedestrian and snowmobile crossing</li> <li>• overhead signs and flashing light</li> <li>• does not include power supply</li> </ul>	\$5,000.00
Safe crossing between the Fred Henne campground and Highway. This crossing would connect the Frame Lake Trail with the Fred Henne Campground and the proposed Airport Loop Trail. <ul style="list-style-type: none"> <li>• pedestrian crossing</li> <li>• overhead signs and flashing light</li> <li>• does not include power supply</li> </ul>	\$5000.00
Safe crossing point at the intersections of Kam Lake Road, Old Airport Road, Taylor Road and Franklin Avenue. <ul style="list-style-type: none"> <li>• pedestrian crossing</li> <li>• overhead signs and flashing light</li> <li>• does not include power supply</li> </ul>	\$650.00
Develop a downtown green space as part of the Frame Lake Trail system which encompasses the Gerry Murphy site and Samba'ke Park, and Mildred Hall School.	\$400,000.00
Provide signage, including a trails map, between Range Lake Tail and Frame Lake Trail, specifically at the junction of Borden Drive and Old Airport Road indicating the location of the underpass connecting the two areas of the community.	\$650.00
Recognize the opportunities to connect future Multiplex site trails with informal trails located between Taylor Road and Ptarmigan Road. This trail would exit on Ptarmigan Road and should include signage and mapping direction to the Tin Can Hill informal trail network.	\$650.00
Pre-feasibility study to Investigate the terrain around Range Lake and the feasibility of completing the trail around the lake.	\$10,000.00
Use signage to show a continuation of bike trail on Kam Lake Road in order to connect to the proposed trail around Grace Lake.	\$500.00
Investigate the cost of designing a dedicated bike lane along Kam Lake Road which will require road widening and paving.	\$3,000.00

### 8.3 Comparative Examples of Costs

	Clearing Width	Tread Width	Surface	Cost per lineal meter
Calgary				
Multi-use	5.0 meter	3.0 meter	Asphalt	\$100.00
Interpretive	4.5 meter	2.5 meter	Gravel	\$ 60.00
Natural	4.0 meter	2.0 meter	Wood Chips	\$ 45.00
Edmonton				
Multi-use	5.0 meter	3.0 meter	Asphalt	\$105.00
Interpretive	4.0 meter	2.0 meter	Gravel	\$ 65.00
Natural	4.0 meter	2.0 meter	Wood Chips	\$ 40.00
Ft McMurray				
Multi-use	5.0 meter	3.0 meter	Asphalt	\$175.00
Interpretive	4.5 meter	2.5 meter	Gravel	\$ 80.00
Natural	4.0 meter	2.0 meter	Wood Chips	\$ 60.00

#### 8.4 Support Infrastructure

While amenity costing was not requested as part of this project, the following information may be useful to the City of Yellowknife. Amenities required for the trail system and park spaces will be identified during the detailed design phase of the project. Project costs can be estimated based on prices for the individual elements such as the following:

Other	Unit	Cost
Rest Nodes	per site	\$50,000.00
Boardwalk	per meter at 2.5 width	\$120.00
Boat/snowmobile launch	per site	\$150,000.00
Boat Dock	per site	\$50,000.00
Group Picnic Sites	per site	\$20,000.00
Single Picnic Sites	per site	\$4,000.00
Minor Playground	per site	\$50,000.00
Major Playground	per site	\$100,000.00
Tree Planting	per tree	\$400.00
Picnic Shelters	per shelter	\$30,000.00
Signage	per sign	\$450.00
Light Standards	per standard	\$2,500.00

### 8.5 Required Outdoor Facilities

The standards originally created for the 1992 Master Plan were based on national standards for park development. We utilized the standards in their original form because they were still applicable.

Gap Analysis - Yellowknife Outdoor Facilities March 7, 2005*										
Facility Type	Inventory	Standard	Travel	Op Effectiveness	2005	Variance	2010	Variance	2015	Variance
					18890		20797		23000	
Fastball field	2	1/7500	5 KM	80% prime time use	2	0	3	1	3	1
Slow pitch field	5	1/3000	5 KM	80% prime time use	6	1	7	2	8	3
Soccer field	1 full size 4 mini	1/5000	5 KM	80% prime time use	4	0	4	1	5	2
Tennis Court	5	1/3,000	5 KM	90% prime time use	6	1	7	2	8	3

It is difficult and costly to find land and develop outdoor facilities. Over the term of this plan the City will need the following play fields:

Outdoor Facility	Amount	Cost
Fastball diamond	1	\$300,000
Slow pitch diamond	3	\$420,000
Full size soccer fields	2	\$530,000
Tennis courts	3	\$375,000