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1.0 Introduction

1.1 Context

A well-developed trail and pathway system can greatly add to the quality of life in a community. With over 140 km of designated trails though Waskasoo Park, other major parks and recreation areas, and through neighbourhood parks, the city of Red Deer already has an extensive and well used trail network. In support of this recreational and leisure network, Red Deer also has 32 km of designated sidewalk trails along major roads which provide key connections for pedestrians, cyclists and other users between their homes and important recreational, institutional, cultural and commercial destinations.

The goal of the **Red Deer Trails Master Plan** (RDTMP) is to provide a detailed long range plan which will facilitate the further expansion and integration of this network throughout the city. In undertaking the preparation of this Master Plan, The City recognizes that a more integrated, easily accessible and safe trail network will result in increased recreational use as well as encouraging the use of trails as a means for "Active Transportation" within the city.

The following report describes the process, input, findings and recommendations which have been developed during this study. The reader is directed to the separate ***Executive Summary Report*** for an overview of the findings and recommendations of the study. The RDTMP has been managed by a Steering Committee made up of representatives of the Recreation & Parks Board, City staff, Parkland Community Planning Services, and citizens. The City retained ISL to provide the necessary consulting expertise to undertake and complete the study.

A key part of the master plan was the involvement of the public, stakeholders, City staff and the Committee throughout the process to provide critical input, innovative ideas and to validate recommendations. The RDTMP has also been prepared to support and integrate with previous planning documents and existing statutory plans. Through this process the RDTMP has been prepared to serve The City and the community as a critical tool for the long term development and operation of the Red Deer Trail Network.

1.2 Study Objectives

The Terms of Reference for the RDTMP identified four objectives as the framework for defining both the process and ultimate success of the study. These original objectives and the defined results are provided below;

- **Establish Principles to Guide Trail Development** – This objective was designed to enable The City to adopt and implement a single, comprehensive set of trail design principles. During the preparation of the RDTMP, the value of trails, trail principles and new development standards have been prepared through consultation with the Committee, stakeholders and the public.

- **Identify User Groups and Their Needs** - The needs and ideas of all groups of users are clearly defined within the Master Plan and form the basis of planning implementation decisions. The study relied on an extensive public consultation process including stakeholder interviews, an intercept survey of trail users, a stakeholder workshop and public open house to assist in meeting this objective.

- **Research and Evaluation** – This objective focused on evaluating the strengths and weaknesses of the existing network, as a framework for developing recommendations related to upgrading, and future development of new trails. The evaluation process revealed that the city of Red Deer has a very good, integrated and well used trail network, which can be improved and enhanced through implementation of this master plan.

- **Future Development and Subsequent Implications** – This objective was framed to ensure that the potential future trail links throughout the city have been identified, explored and selected, and an implementation plan has been identified. An implementation plan has been prepared, which considers development implications, capital costs, development responsibility, development priorities and a fifteen year implementation schedule.

1.3 Study Process

A detailed methodology for the Red Deer Trails Master Plan (RDTMP) is presented below.

- **Project Initiation Meeting -** A project initiation meeting with the Committee was held on May 19, 2004. This initial meeting allowed ISL and committee members to present and discuss key questions, issues and ideas related to the study process and products. See Section 2.2 for details of the committee input.

- **Background Research -** Analysis and synthesis of all previous studies, reports and mapping related to the Red Deer trail network as well as other City regulatory documents and standards were undertaken. See Section 2.1 for analysis results.

- **Intercept Survey -** An Intercept Survey was completed to gather information on issues and ideas from trail users. The survey was administered over two weeks in June, 2004 to catch both commuter users and the recreational users. A total of 745 surveys were completed. All feedback received was documented, analyzed and synthesized. See section 2.3 for a synopsis of the intercept survey and Appendix B for a more detailed summary of the results.

- **Stakeholder Interviews -** In-depth phone interviews with 31 stakeholders identified by the Committee were conducted, in September 2004, to gather issues and ideas for the Trails Master Plan. See Section 2.4 for a synopsis of the stakeholder interviews and Appendix C for the complete summary.

- **Research Phase Committee Meeting -** Once the background research was completed, a meeting was held with the Committee to present and discuss the findings.

- **Trail Network Inventory & Mapping -** Working from an electronic base plan and digital air photo mapping provided by The City, an inventory and map of the existing trail network was prepared. The trail inventory was reviewed and expanded by City staff and by trail users during the public consultation events throughout the study.

- **Trail Standards -** specific standards were developed which reflect the level of existing trail development in Red Deer, the objectives of The City and the expressed needs of the users. See Section 4.3 for information on the proposed trail standards.

- **Trail Network Evaluation -** an evaluation of the existing trail network was completed, which included findings from the Intercept Survey, the Stakeholder Interviews, as well as team member observations from touring the trails (technical evaluation). This technical evaluation considered three broad evaluation categories: Design, Maintenance and Amenities. See Section 3.5 for more detail on this phase of the study.

- **Evaluation Phase Committee Meeting** – On August 25, 2004, a committee meeting was held to present the comprehensive trail map, the proposed trail development standards and the evaluation of the strengths and weaknesses of the existing trail network.

- **Trail Network Design -** a comprehensive map of all potential future trails and trail links was prepared based on information from previous designs and studies, statutory plans, field reconnaissance, as well as input from committee team members, City staff and the public. See Section 5.0 for maps and a description of the proposed future trail network.

- **Investigation Phase Committee Meeting** – a Committee meeting on September 21, 2004 was used to present and discuss the trail network design. During this meeting plans were finalized for the Stakeholder Workshop and Public Open House.

- **Stakeholder Workshop -** a Stakeholder Workshop was held on November 16, 2004, to gather feedback on the long range trail development master plan. The workshop involved a presentation of findings and recommendations followed by a group exercise to focus stakeholder discussion on development and capital priorities. A summary of the workshop results can be found in Section 6.3.1 and Appendix J.

- **Public Open House -** an Open House was held on November 30, 2004, to gather feedback on the future development of the Red Deer trail network. See Section 2.5 for a summary of results and Appendix D for detailed information.

- **Trail Network Implementation Plan -** After completing a draft of the future trail network design an implementation plan was prepared and submitted with the draft report. The implementation plan defines the implications of the various trail development options, capital and maintenance costs, development priorities and a development schedule. See Section 6.0 for the RDTMP implementation plan.

- **Report Presentations and Approvals** - Once approved by the Steering Committee, the Final Master Plan report was presented to the Recreation and Parks Board. The Board in turn advised City Council of their support for the RDTMP and its recommendations. The Final Master Plan was presented to Council by the Consultant.

1.4 Acknowledgements

Throughout the study, the project team has received tremendous input and support from The City, the Steering Committee, stakeholders and the public. In particular, ISL wishes to acknowledge the following individuals who have contributed their time and expertise to ensure that the Red Deer Trails Master Plan is a practical and valuable document for The City of Red Deer.

Project Steering Committee

Frank Colosimo, Kristine Dugas, Doug Evans, Bob Johnstone, Tony Lindhout, David Matthews, Grant Moir and Greg Scott.

Trail Intercept Survey

Candace Berard, Diane Chadwick, Julie Chadwick, Peter Chadwick, Vern Glover, Don Moore, Marlis McClintick, Lloyd McMurdo, Murray Parker, and Don Wilson.

ISL Project Team

Pat Butler, Jocelyn Chorney, Randy Heaps, Peter Heppleston and Marcel Huculak.

1.5 Key Terms

For the purpose of this report the key terms are defined as follows:

- **Amenities:** Something that conduces to creating comfort or convenience, e.g. benches, waste receptacles, signs, maps.

- **Arterial Road:** A main roadway that carries large volumes of all types of traffic moving at medium to high speeds. These roadways serve the major traffic flows between the principle areas of traffic generation and connect to rural highways and collectors. (from Design Guidelines, 2004 edition, City of Red Deer Engineering Services)

- **CARTS:** Central Alberta Regional Trails Society, a group representing the local region which is responsible for providing opportunities for the promotion, designation, development and utilization of an inter-community trail system in Central Alberta (Central Alberta Regional Trail Initiative, Master Plan)

- **Collector Road:** The function of collector roadways is to carry traffic between local and arterial roadways. (from Design Guidelines, 2004 edition, City of Red Deer Engineering Services)

- **Corridor:** A tract of land connecting one point to another, e.g. a PUL (public utility lot). A creek can also be considered a natural corridor.

- **Desire Lines:** Paths that have been created by users, where no paths, sidewalks or trails were originally delineated. These are un-maintained, un-designed access ways.

- **Network:** An interconnected group of trails which allow people to travel, by non-automobile methods. A network connects various communities, neighbourhoods, recreation or points of interest. (Central Alberta Regional Trail Initiative, Master Plan)

- **Neighbourhood Park Ecological Reserve:** The City of Red Deer, Recreation Parks & Culture, and Ecological Services Area is developing a program to

protect municipal reserve sites that contain natural features. These natural areas, which are located throughout the city in residential neighbourhoods, industrial and commercial areas, are composed of natural forest stands, wetlands or a combination of both. All of these independent natural sites will be designated as Neighbourhood Park Ecological Reserves (See Section 4.3.5).

- **Pathway:** This term is used interchangeably with the definition of trails.
- **Pararamps:** Occurs where sidewalks and / or trails meet roads. An accessible ramp that enables the user to easily access the street level, without stepping down.
- **Regional Trails:** Regional refers to areas outside the city of Red Deer. i.e. Regional trails links refer to future trails that will occur outside of the City.
- **ROW:** Right of way
- **Sidewalk:** A walkway, made of concrete, located within the road right-of -way. In this study some sidewalks are part of the trail network.
- **Sightlines:** From a certain vantage point, the point of view that allows pedestrian, bicycle or vehicular traffic to visually assess other pedestrian or vehicular traffic. This area is usually instinctively scanned, for safety and security. Objects that might affect sightlines include: poles, large shrubs, a steep bend in the road, or large signs.
- **Stakeholder:** One who has a share or an interest in the development of Red Deer or its trails.
- **TAC Guidelines:** Guidelines prepared by the Transportation Association of Canada.
- **Trans Canada Trail (TCT):** Trans Canada Trail is a multi-purpose recreational trail that crosses Canada connecting the Pacific, Atlantic and Arctic Oceans. There are both east / west and north / south routes throughout the Province of Alberta. (Central Alberta Regional Trail Initiative, Master Plan)

- **Trail:** A linear outdoor recreation facility, which is marked, mapped and maintained, for non- motorized travel. (Central Alberta Regional Trail Initiative, Master Plan)

- **Trail Network:** An interconnected group of trails which allows people to travel, by non-automobile methods. A trail network connects various communities, neighbourhoods, recreation facilities and / or points of interest.

2.0 Background Research

2.1 Previous Studies & Reports

As an important feature of the city of Red Deer, the development and operation of trails are defined in a wide variety of previous reports, studies and statutory plans. All of the following background documents were reviewed as part of the evaluation phase of the project and information, references, standards and guidelines have been integrated into the RDTMP where appropriate. Summaries of some of the key background documents are listed below. A list of all work cited is provided in Appendix A.

City of Red Deer 2002-2005 Strategic Plan

(City of Red Deer, 2002 Strategic Plan Review Committee, 2002)

This document serves as a guide in developing both municipal programs and services for the citizens of Red Deer. Within the scope of Community Development, a major goal that relates to transportation was, "To maintain an effective and sustainable transportation system that responds to the changing needs of our citizens." The following strategy was included, "Provided roadway, trail, and other systems that address the need for safe transportation in our City." Transportation System refers to all types of transportation including public transit, walking and cycling routes, roads and others.

City of Red Deer Municipal Development Plan

(Parkland Community Planning Services, Lovatt Planning Consultants, April 1998)

This document "contains broad policies for guiding growth and change in the City of Red Deer." The scope of this development plan includes a diversity of topics; Quality of life, Community Life, Development and the Natural Environment, Public Participation, Downtown, Balanced Growth, Land Use, Land Development, Transportation and Utilities, Future urban growth areas, and Cooperation. These echo similar values associated with the development of trails.

The following recommendations pertained to trails development:

- The City shall continue to consider new bicycle and pedestrian routes: as integral components of the transportation system; to serve recreation and transportation systems; to link existing parks, recreation and education facilities

to form an integrated open space network (Bicycle Master Plan); to improve bicycle and pedestrian access to Downtown (Downtown Concept Plan).

- The City shall attempt to partner with other local government and community groups to develop a regional trail network.

Riverlands Community Plan, Area Redevelopment Plan & Development Design Criteria

(John Hull, Architect and Urban Plans Inc., December 2003)

The purpose of this study was "to guide future growth and development in the Riverlands area of Downtown Red Deer." One of the main objectives of this study was to provide "significant pedestrian and open space linkages to the City's existing park / trail network and accommodate the envisioned 48th Street (Alexander Way) promenade concept." The document discusses both pedestrian and bicycle circulation throughout the downtown area. This document echoes the Greater Downtown Action Plan with emphasizes creating a 'Pedestrian First' environment in the downtown area. This document also recommends "that The City undertake a feasibility study regarding the future construction of a new pedestrian bridge over the Red Deer River connecting Riverlands to Bower Ponds."

City of Red Deer: Greater Downtown Action Plan

(John Hull, Urban Plans, Carlyle and Associates. August 2000)

The purpose of this study was to "identify action steps for future development within the Downtown Area." The document recommends that these central planning principles are adopted:

- Pedestrian First – Creating a more walkable Downtown area
- Build on Strengths – focus on building on Red Deer's strengths
- Strengthen Area Identities – Smaller areas or Neighbourhoods have different identities, which should be highlighted and strengthened.

These notions can also be applied to the building of trails throughout the city of Red Deer. This document contains a Downtown Bicycle Route map which was further consulted and analyzed, in order to make recommendations for bicycle transportation within the Downtown area. The Greater Downtown Action Plan also discusses the pedestrian environment in detail; in particular, it discusses creating a 'Pedestrian First' environment, creating more linkages to trails, reinforcing existing pedestrian pathways throughout the downtown area, and the creation of the 48th Street Promenade.

Red Deer Community Culture Master Plan

(Community Culture Master Plan Steering Committee/ Randall Conrad & Associates, Sept. 2001)

The purpose of this study was to provide recommendations that will heighten the awareness of culture and the provisions of culture services within the city of Red Deer. Identified in this report are Spaces and Places that have been identified as 'primary locations for further cultural growth'. These include: City Centre Hub (an area that includes the Downtown core), Rotary Recreation Park Hub (an area that includes the Golden Circle Seniors Resource Centre, Red Deer & District Museum and Archives, the Recreation Centre, Rotary Park and Heritage Square), and Riverlands Hub (the western edge of the Downtown area, bound by the City Yards). As these become important cultural locations, further trails will need to be built in order to connect them. Although many of the recommendations deal with built form that support the arts community, there is some discussion of creating places to display outdoor public art in the above mentioned hubs.

Red Deer Rotary Recreation Park: Facilities Study

(Simpson Roberts Architecture Interior Design Inc., Carson McCulloch and Associates, Lord Cultural Resources Inc., Read Jones Christofferson, 2000)

The purpose of this study was to identify a variety of recommendations for the Rotary Recreation Park. The investigation concentrated on four major components of this area: the Park, the Museum/Archives, the Recreation Centre, and the Golden Circle. Identified within this report is the notion that better integration is needed between the park, the buildings and the surrounding community. This can be accomplished by creating connecting trail linkages including links to future 48th Street/Alexander Way, a link to the Seniors Centre, and a link that connects the recreation centre to the arena.

City of Red Deer Bicycle Master Plan Update

(Reid Crowther & Partners, April 2000)

The purpose of this study was to 'develop and expand a comprehensive non-motorized transportation system throughout the city that links residential areas with existing parks, recreational, entertainment and educational facilities, the downtown core area and other places of major employment'. Included within the plan:

- a review of all major transportation routes to determine possible bicycle facilities
- a map showing all existing bicycle facilities in the city

- updated standards, guidelines and responsibilities
- integration with the Regional Trails Initiative, and the Trans-Canada Trail through the city of Red Deer

A review and analysis of this Bicycle Master plan has been essential to further development of the Red Deer Trail network.

City of Red Deer 2003/2004 Transportation Plan Update

(Stantec Consulting Ltd. May 2004)

The purpose of this study was 'to assess the current arterial and collector roadway network'. Some recommendations regarding pedestrian and cyclist requirements are presented within this document. These were further analyzed in conjunction with the Bicycle Master Plan.

Red Deer REACT: Environmental Action Plan

(City of Red Deer: Development Services, Recreation, Parks and Culture, and the Environmental Advisory Board, February 1995)

The purpose of this study was to identify, outline and define policies and programs as they relate to achieving or maintaining environmental integrity. As well the report identifies the priorities of proposed policies and standards, therefore creating an implementation strategy. Included in the Action Plan is the proposed scheduling and financing as it relates to a variety of environmental concerns. The action plan involved investigating the following specific issues which pertain to the development and promotion of Red Deer Trails:

- Public transportation and Vehicle Inspection (promoting pedestrian/bicycle use)
- Preservation legislation, Policies and Bylaws
- Sustainable Development Strategy
- Environmental Pro-active and Re-active Policies
- Environmental education programs

Red Deer Growing Smarter: Design Elements and Ideas for New Residential Neighbourhoods

(Parkland Community Planning Services, November 2002)

The focus of this report was the analysis of current development standards and the implication on fiscal, environmental and social growth. Recommendations and strategies were suggested that could be used in a variety of residential developments, be it new development, infill projects or redevelopment sites in

'older' neighbourhoods. A recommendation was the importance of continuous trail linkages throughout neighbourhoods and linking adjacent neighbourhoods.

Community Services Action Plans, 2003 to 2006: ….Open Spaces and Facilities Action Plan

(City of Red Deer, Community Services Division, 2003)

"The focus of this Action Plan is to outline commitments and future directions for the land and facilities which the Community Services Departments and agencies are responsible." The following recommendations are those that pertain to trails throughout the city of Red Deer:

- **River Bend -** Retain as a multi-use recreational area that includes the golf course, Discovery Canyon, skiing and hiking trails.
- ***Riverside Park -*** Endeavor to acquire the balance of private land immediately West of the River Bend Golf Course & Recreation Area. Explore opportunities to link this area to McKenzie Recreational Area through the trail network.
- ***Fort Normendeau Trail*** - Provide a link between Fort Normendeau and Heritage Ranch to extend Waskasoo Park Trail. Pursue an easement agreement for a strip of land or easement along the Red Deer River between Fort Normandeau and Heritage Ranch.
- ***Highland Green Escarpment*** (along Riverview Avenue West of 54 Ave.) - Plan for bicycle trail development, extending from Taylor Drive to 52nd Ave.
- ***Maskepetoon Natural Area -*** Explore the potential development of formal low impact gravel footpaths and interpretive signs for this area.
- ***Mountain Bike Park*** (North of 77 Street, East of Gaetz Ave.) - Facilitate the development of park north of 77 Street, according to Mountain Bike Plan. This development has occurred.
- ***North Bank Trail*** (North along Red Deer River from Heritage Ranch to Three Mile Bend).Retain as an important part of the trail system.
- ***Pines Escarpment*** (East edge of Pines Neighbourhood, from 67 St. to 77 St.) - Retain existing natural area with low-key trails for hiking and cross-country skiing. Explore the potential for developing the formal trail north from 77th St. through to new Mountain Bike Park.

Neighbourhood Planning and Design Guidelines & Standards

(City of Red Deer, Community Services Division, December 2002)

The purpose of this document was 'to provide guidelines and standards for the planning and design of neighbourhoods including parks, public facilities/amenities in the City of Red Deer.' Within this document are Guidelines and Standards that relate to Trail and Trail Links, circulation and connections.

Guidelines:

- Bicycle and pedestrian routes should be considered and developed as integral components of the transportation system.
- All new neighbourhoods should be linked to the Waskasoo Park system by a linear park or trail network, separate from the road infrastructure as much as possible.
- Trail crossings of arterial roadways should be minimized for improved trail safety.

Standards:

- The planning of neighbourhood trail networks, as well as the collector and arterial road plan, will be completed within the Major Area Structure Plan and precede any additional detailed development of Neighbourhood Area Structure Plans. Neighbourhood Area Structure Plans will include detailed planning of all parkettes, linear park or trail networks and buffer areas.
- The purpose and priority of trail linkages in/out of neighbourhoods shall be described within the Major Area Structure Plan, in order to assist developers in preparing acceptable neighbourhood trail designs.
- Paved trails running through and connecting neighbourhoods shall be developed as part of the City transportation system.
- Paved trails should be integrated through neighbourhoods and efficiently connect with sidewalks to minimize walking distance and provide accessibility to the transit service.

(Note: Recently this document has been revised; Neighbourhood Planning Guidelines and Standards, August 2005. This current document references the trail guidelines and standards outlined in this plan.)

Central Alberta Regional Trails Initiative: Final Report

(Deb Comfort with Central Alberta Regional Trail Society, April 1999)

This report investigates the "potential for recreational trail linkages throughout the counties of Red Deer and Lacombe." The document outlines the process, issues,

and budgetary considerations, while defining and assessing feasibility of regional trail route Master Plan.

2.2 Committee Input

On May 18, 2004 a Project initiation meeting was held with representatives from the project Steering Committee and the ISL project team. During the meeting the Committee members were asked to identify some of the issues, concerns, ideas and opportunities which they considered to be important in the preparation of the Red Deer Trails Master Plan and in the future development of the trail network. The input generated at the meeting is summarized below:

- **Integration with Previous/Other Plans** - One of the key considerations the Trails Master Plan needs to address is the integration of the Transportation Master Plan and the Bicycle Master Plan.

- **Construction of Trails** - The Trails Master Plan shall address how new trails will be constructed. In particular the RDTMP will examine: centre lines on trails, maintenance, materials (asphalt vs. shale), construction, widening or twinning.

- **Identifying Routes/ Linkages/ Connections -** The RDTMP will identify missing linkages, connections and future route development. The investigation will focus attention on creating linkages to various areas throughout Red Deer, including: Downtown and Waskasoo Park, industrial areas, regional trails, schools, and Red Deer College. The RDTMP should also look at the possibility of creating Major E-W and N-S routes. The RDTMP shall also investigate the use of utility corridors which can be used in different ways.

- **Transition zones** - shall also be investigated, including the transition from Neighbourhood to collector to arterial. As well, one should look at how to negotiate the berms, mid block crossings, and the separation between bike, car and pedestrian.

- **Creating Safe Trails** - Red Deer's Trail network must be safe for multi use. The RDTMP should look at dealing with crime prevention and perceived safety through environmental design (CPTED) principles.

- **Creating User Profile** - The RDTMP will attempt to address the following questions: Who are the users? Who should we be designing for? What types of trails are needed based on the users' needs? Where are they going? Are there more people who use it for recreation, commuting or other purposes.

- **Assessing Value of Trails** - From the intercept survey the RDTMP can assess why people are using the trails, and what they like about the trails. By further understanding and articulating the value and importance of trails, capital funding for future development will be more easily accessible.

- **Education and Trail Etiquette** - Lack of education or trail etiquette can cause safety concerns or accidents especially on busier, more hectic trails. Some of the questions raised, while discussing this issue, included: How can trail users be informed of issues relating to trail etiquette and safety measures? Should information signs be posted in hectic areas? What are the busy areas that would benefit the most from this type of signage? Another possibility for trail education is in the schools with the bike safety program.

- **Amenity Standards** - Part of the investigation of the trail network will include an analysis of the various amenities available to trail users, this includes: washroom facilities, water fountains, benches, garbage receptacles, and recycling receptacles.

- **Implementing the Development of Trails** - The results from the RDTMP shall include recommendations of how changing the development standards should be implemented in regards to both City departments and Developers.

2.3 Intercept Survey

An intercept survey was completed during June of 2004, to gather information on issues and ideas from trail users. The survey was administered over 6 days (June 19, 20, 22, 24, 26, and 27th) in order to gather information from both the weekend recreational user and the weekday commuter. Various locations were chosen throughout the city of Red Deer including the CPR Bridge, Kerry Wood Nature Centre, Bower Ponds, Heritage Ranch, 45 Ave. /Ross St., Kin Kanyon, Dawe Centre, and Collicutt Centre. The survey was also posted on The City of Red Deer's

website. The public response was overwhelming with a grand total of 745 surveys received.

The survey results provided a tremendous foundation of information for the evaluation of the trail network, trail user profiles and ideas for future trail development. A summary of the survey and results can be found in Appendix B. The questions and the top responses are provided below.

1. **How many days a week do you, on average, use the Trails?**
   198 responded that they use the trails more than 5 times a week. The second largest group (187 responses) use the trails 1 to 2 times per week.

2. **Is most of your trail use during weekdays, weekends, both?**
   628 responded that they use the trails both weekdays and weekends.

3. **In which months do you generally use the Trails?**
   The majority of use occurred during the spring, summer and fall months. However, 300 individuals responded that they use the trails during December, January and February.

4. **What is your primary use of the Trails? (choose 2)**
   The top responses were walking (517), biking (473), jogging/running (143) in-line skating (112) and cross-country skiing (40). This question also allowed respondents to indicate why they enjoyed the trails: 401 responded for exercise, 330 for leisure, 309 for recreation/fun, and 124 responses indicated that they used the trails for dog walking.

5. **What do you like best about the Trails?**
   The following were the top 3 categories: Being in nature (experiencing a variety of plants, wildlife, the river, scenery and terrain), the maintenance of the trails (condition, paved, clean) and the accessibility/placement of the Trails (trails cover the city, length, accessibility, away from traffic, good transportation, close to downtown). This answer indicates that the Waskasoo, Devonian and other park and river edge trails are the most popular and that keeping the trails well maintained is an important factor for trail users.

6. **As a trail user please identify any specific concerns or issues that you would like to see addressed.**
   The top three answers were Maintenance (74), Cleanliness (58) and Safety (50). However, when related responses were grouped, the highest total of responses

had to do with safety concerns (including trail etiquette, education). The answers to this question clearly showed that the main concerns that trail users have are safety and maintenance. These are often two overlapping issues since maintaining and upgrading the trails will also increase safety in some locations.

7. If you had money to spend on trails, what would you spend it on?

The top three answers were More Trails (190), Maintenance (58) and winter – plowing/ice removal (43). As with the previous question, if related answers are grouped, they prioritize as follows: Maintenance and Operations (287), Future Development/More Trails (287), Amenities (127) and Safety (92). It is important to note that in Question 6, safety was a top concern but in this question respondents did not rank it high in terms of a spending priority. This may be due to the fact that safety is more difficult to quantify, or that maintenance issues such as repairs, widening, re-paving are identified as ways to affect the safety of the trail.

8. Please identify the locations of two or three specific trail routes or links you would like to see developed or improved.

Respondents identified potential trail links throughout the city with the top five areas being Heritage Ranch (30), Bower Ponds (25), New Areas/Subdivisions (23), Three Mile Bend (22), and South Red Deer (21).

9. Other Comments or Suggestions

Most general comments and suggestions supported responses to other questions. In general responses were very positive – "Excellent", "Beautiful", "Awesome", "Keep up the good work", "Great job". A high number of other general comments dealt with: trail etiquette issues and safety. Safety was particularly a concern at night and on bridges. Lighting and police patrols were proposed solutions for this problem.

10. Please indicate your age and sex

The majority (41%) who responded to the survey were between the ages of 18-49 which reflects Red Deer's relatively young population. There was an almost even split between males (52%) and females (48%) filling out the survey.

11. What neighbourhood / community do you live in?

The top three answers were Riverside Meadows (50), Out of Town (37) and Oriole Park (32). It is interesting to note that 5% of the respondents were from out of town.

2.4 Stakeholder Interviews

The project Steering Committee identified 31 stakeholders to provide input to the RDTMP. In-depth phone interviews were conducted with the stakeholders who included representatives from Parks maintenance staff, Parks Facility operators, the Red Deer Bicycle Club and Runners Clubs, the Environmental Advisory Board, Red Deer River Naturalists, Utility operators, developers and others.

Stakeholders were asked 4-5 specific questions related to their involvement in the trail network from a capital, development or maintenance perspective, the issues/challenges they face in meeting those responsibilities, and whether they collaborate with other departments, groups or agencies. Stakeholders were also asked to identify safety concerns, environmental issues, use requirements and program needs/opportunities related to Red Deer's trail network. The stakeholder input has been grouped and summarized below. A detailed summary by question is provided in Appendix C.

- **Maintenance -** Many stakeholders identified the need for snow clearance during the winter months. Other maintenance issues which were identified included lifting of concrete edges and mitigating tree root upheaval.

- **Amenities -** Comments included the need for trailhead locators, way-finding signage, washrooms, parking, garbage receptacles, and more rest / turnout areas.

- **Specific User Needs** - Two specific comments related in particular to preferred types of trails: "Runners like the shale trails with shade the best", "Cycling [mainly occurs] on paved trails with some shale trail [usage] to access other trails". Comments also related to other users such as cross-country skiers, bird watchers, and dog owners. Each of these groups has specific concerns, i.e. ski trail maintenance, snow clearing, and increased number of waste receptacles.

- **Trail Traffic and Trail Etiquette -** Comments related to the importance and promotion of trail etiquette and sharing the trails with a variety of users, i.e. walkers, runners, cyclists, roller-bladders, cross-country skiers. A suggestion to mitigate this issue was to post more signage related to sharing the trail with

others. There were also many comments that related specifically to the need for a center line; the addition of this would increase safety and "it would remind users that the 'keep to the right' rule applies to the trails too." It was also noted that "if all trails cannot be painted due to budget considerations then perhaps the blind corners and down hills could be done at the very least."

- **Construction and Technical Information** - From one of the construction companies in Red Deer we heard, "Our construction equipment is built for the 2.5m and 3m [trail] width. With narrower trails, we still require a minimum 3 metre width for our equipment and truck access. Narrower trails are more difficult to pave and the quality of pavement is more difficult to achieve."

- **Trail Width** – stakeholders indicated that a minimum 2.5 meter width is best for the amount of traffic that these trails experience. Trail width for the various types of trails is defined as part of the proposed trail standards in Section 4.0

- **Safety Concerns** - Some of the stakeholder comments regarding safety issues included: maintaining sightlines, removing physical obstructions at intersections, major road crossings, maintenance of trails, and more lighting in hidden areas. While some promoted the addition of lights to increase safety others indicate "extra lighting on trails may draw people to the trails and create a false sense of security." The issue of safety and the issue of trails are discussed in Section 3.5.

- **Suggested Trail Routes** –A number of potential trail routes or trail links were mentioned in response to which trail locations need specific attention. Most of these suggestions were considered during the evaluation of existing trails and in the preparation of the Future Trail Network map (Section 5.0).

2.5 Public Open House

An open house was held on November 30, 2004 to give the public an opportunity to review the results of the Intercept Trail Survey, to learn more about the proposed trail development standards, and to provide input on priorities for future trail development. 78 participants rotated through the exhibits, with 66 participants filling out the exit survey. Display boards detailed the results of the intercept survey and

the proposed changes to the standards. There were also three boards designed to facilitate direct feedback (see results below) from the public on development priorities. See Appendix D for copies of the presentation Boards.

1. **The Red Dot Exercise: 'Choose the first two trails that you would like to see developed, by placing a red dot beside the description':** The top three choices were:
   - East Bank Trail (28),
   - River Crossing between Riverlands and Bower Ponds (21)
   - Trails within the Maskepetoon Natural Area (20).

2. **The Yellow Dot Exercise: 'If you think that more amenities are needed on the trails, place a yellow dot beside your top two choice'.** The top three choices were:
   - Public Art (16)[1]
   - Washroom Facility (16), and
   - Interpretive Signs (15).

3. **Draw a New Trail** – respondents were encouraged to draw on a map and identify where a trail was needed in their neighbourhood or anywhere in the city. All identified trails were incorporated into the future trails map.

Questions that were on the public open house exit survey dealt with key issues that were raised during the Intercept Survey. A summary of these results is provided below:

1. **'In reviewing the Trail Survey summary, were there any results that you found particularly interesting or that surprised you?'** The top three answers to this question were:
   - Were surprised in the category of spending priorities, many saw a discrepancy: Plants and Wildlife ranked number 1 and Scenery ranked number 2 in the Favorite aspects of Trails, however, in the spending priorities, Landscaping - addition of more trees and shrubs was 13 on the list, and preserving nature was number 28. It is possible that this

[1] The Steering Committee felt that this result was not necessarily representative of an overall public/user view.

result reflects the fact that much of the Waskasoo trail system already provides great access to natural forests and wildlife habitat.

- Responded that they were surprised to see safety ranked so high (4)
- Were surprised by the number 1 ranking of Plant / Wildlife as their favourite aspect of the trails (3)

2. Many survey respondents indicated that safety was a concern when using the trails. **'If safety is a concern to you, can you suggest two things which could be done to make you feel safer on the trails?'** The top three answers to this question were:
   - Lights (15)
   - Patrols (14)
   - Centerline (9)

3. Many survey respondents indicated that trail user etiquette could be better. **'Can you suggest unique ways to encourage / educate trail users on proper trail etiquette?'** The top three answers to this question were:
   - Signage (23)
   - Education (10)
   - Centrelines (6)

4. **'Can you suggest ways to encourage more people (current non-users) to use Red Deer's Trail network?'** The top answers to this question were:
   - School programs / education (8)
   - Trail events (8)
   - Create efficient trails / commuter trails (5)
   - Free maps (5)

5. **'Would you like to see a centreline on the major Waskasoo Trails? Yes__ No__.'** The answers to this question were:
   - 37 respondents (56%) indicated that they would like to see a centreline on Major Waskasoo trails
   - 17 respondents (25%) indicated that they wouldn't like to see a centreline
   - 12 respondents (19%) did not indicate any answer.

6. **'Would you support the removal of all offset gates? Yes__ No __ and Why?'** The answers to this question were:

- 13 Respondents (19%) indicated that they support the removal of the Offset gates
- 39 Respondents (59%) indicated that they did not support the removal of the offset gates
- 14 Respondents (22%) did not indicate whether they support or didn't support the removal of the offset gates.

In response to 'Why?' the answers were:

- No - They serve as a barrier to keep traffic off trails (8)
- No - They slow down cyclists (7)
- Yes - They are a nuisance (4)

7. Currently the Arterial Road Sidewalks / Trails are cleared in the winter. **'Do you support the clearing of some designated Waskasoo Trails for winter use? Yes__ No__ If yes, can you suggest a suitable trail route which could be cleared'.** The answers to this question were:

- 48 Respondents (74%) agreed that some Waskasoo trails should be cleared during the winter months.
- 10 Responded (15%) that trails should not be cleared during winter.
- 7 (10%) did not respond to this question.

In response to **'suggest a suitable trail to be cleared'** the answers were**:**

- Bower Ponds (8)
- Downtown / Central (7)
- Taylor Bridge to 67 St. Bridge (4)

8. **'Please identify any environmental concerns that you may have regarding the use of existing trails or the development of new trails in Red Deer'.** The answers to this question were:

- Keep trails away from sensitive areas i.e. wildlife habitat and corridors (8)
- "Un-official" trails degrade natural areas, i.e. mountain bikers along river banks (8)
- Garbage, install more receptacles, provide more pick-up etc. (7)

3.0 Red Deer's Trail Network

3.1 Existing Trail Network

The City of Red Deer has an extensive trail network of designated trails, sidewalks and on-street cycling routes. One of the early and then ongoing activities of this study was to inventory and map all of the existing trails in the city. An initial electronic base file which included some of the existing trails was provided to the consultant and then this map was updated to include all existing trails. A map of the primary sidewalks including width and surface condition was also provided by The City. The process of inventory and mapping required field reconnaissance by the project team but more importantly relied on the input of City staff, stakeholders and the public. The map was continually updated and refined throughout the process of meetings and public events to ensure that all existing trails (and proposed routes) were documented.

The Red Deer Visitor and Convention Bureau currently produces a trails map which is available through The City and at most recreation facilities and destination sites (eg. Heritage Ranch). The City also manages a website which allows potential users to select trails by activity type and print out a specific route to meet their needs.

The trails which are included on the current map are divided into five categories:

- Hard Surface Trails - 47 km
- Shale Trails - 76 km
- Dirt Trails - 6 km
- Equestrian Trails - 8 km
- On Street Cycling Routes – 5 km

As indicated, there are also over 30 km of sidewalks along arterial and collector roads which are key routes for providing access and connection between neighbourhoods and important community recreational, institutional and commercial facilities.

3.2 Trail User Profile

The intercept survey and the conversations with the public and stakeholders were used to develop a profile of the trail users in Red Deer. Most trail users were between ages 18-49, which reflects the young population of Red Deer. Although this age group made up the majority of trail users, the data also indicates that people of all ages are using the trails. Respondents indicated that they used the trails primarily for exercise, recreation and dog walking and that the primary modes of use were walking, biking, and running/jogging. An opportunity to see and appreciate nature was the aspect that people liked most about the Red Deer trail network. This profile would be typical for most municipalities in Alberta where recreation is the primary reason why people use trails.

From this profile and with additional input from the intercept survey it is possible to extrapolate some important design information. Clearly, having more trails which access nature and are designed primarily for walking, is important. These trails should be designed as primarily low impact in terms of surface material and passive in terms of grade/level of difficulty. Runners also indicated that they prefer softer shale or wood chip trails. The extensive multi-use, asphalt trail network in Red Deer accommodates the needs of most users for recreation and exercise whether walking, jogging, biking or in-line skating. These trails provide loops of various distance, they are easily accessible and they provide variety in terms of sights, facilities and level of difficulty.

While dog walking was the fourth most common activity on the trail, there was significant concern expressed about safety issues related to dogs (particularly off-leash) on the trails. To accommodate dogs and dog owners the City maintains an off-leash area at Three Mile Bend. Survey respondents indicated that more waste receptacles and water fountains could be placed throughout the trail network; however, it would be better to encourage more off trail use by dog walkers by having more than one designated off-leash area. As with all forms of trail use, it is important the users learn proper trail etiquette.

3.3 Existing Trail Standards

Development standards provide a critical framework for the development (new construction), upgrading and operation of municipal infrastructure. Trail development standards usually define trail width, surface material, safety zones and the location of specific classes of trails. Related or supporting standards will usually define trail amenities, control features (eg. gates or bollards), and overall planning requirements. One of the objectives of this study is to define a set of trail standards which can be applied consistently by all departments and by contractors working for The City. As a framework for developing new standards, The City's existing trail standards are defined in the following sections.

3.3.1 Existing Parks Standards

Red Deer's Recreation, Parks & Culture department does not currently have a comprehensive set of trail development standards which is a primary reason for the preparation of the RDTMP. Department staff currently use a variety of previous work and more recent formal directives as the framework for making trail development decisions. Some of the current standards used by the department include:

- 3.0 m wide Asphalt Trails, 1.5 m wide hiking trails, and 2.5 m concrete sidewalks along key collector roads
- Trails Classification – Hard Surface Trail, Shale Trail, Dirt Trail, Equestrian Trail, On Street Cycling Route
- Construction Details – from Waskasoo Park Master Plan (1983-1990)
- Original Classification (1987) – Class 1, 2 & 3 Bikeways

3.3.2 Existing Engineering Guidelines (2004)

In the 2004 City of Red Deer Engineering Services Design Guidelines there are several specific guidelines defined to guide trail development. They include:

- Expressways & Arterial roads – a 3.0 m wide separate sidewalk will be constructed on one side of road.
- Residential Collector Roads – the required 1.5 m wide separate sidewalk will be increased to 2.5 m on one side if designated (by Parks) as part of Bicycle Path system
- Berms – berms will be constructed along major collectors and arterial roads for noise/visual screen. Pedestrian access is provided through the berms using sound walls.

- Off-set Gates – are installed at intersection of collector roads and trails paralleling arterials.

3.3.3 Existing Planning Standards (2002)

In the City of Red Deer Neighbourhood Planning and Design Guidelines & Standards (2002/03), there are several specific standards defined to guide the planning and development of trails in new neighbourhoods. They include:

- The planning of neighbourhood trail networks, as well as the collector and arterial road plan, will be completed within the Major Area Structure Plan and precede any additional detailed development of Neighbourhood Area Structure Plans. Neighbourhood Area Structure Plans will include detailed planning of all parkettes, linear park or trail networks and buffer areas.
- The purpose and priority of trail linkages in/out of neighbourhoods shall be described within the Major Area Structure Plan, in order to assist developers in preparing acceptable neighbourhood trail designs.
- Paved trails running through and connecting neighbourhoods shall be developed as part of the City transportation system.
- Paved trails should be integrated through neighbourhoods and efficiently connect with sidewalks to minimize walking distance and provide accessibility to the transit service.

(Note: Recently this document has been revised; Neighbourhood Planning Guidelines and Standards, August 2005. The current document refers to the trail standards outlined in the remainder of this plan.)

3.4 Existing Trail Maintenance

Trail maintenance and operations in Red Deer is primarily the responsibility of the Park Facilities (PF) section of Recreation Parks & Culture, with some duties performed by the Parks Maintenance (PM) section. The Recreation Parks & Culture Department has an annual trails budget of approximately $300,000, of which $250,000 is for repairs and maintenance and $50,000 is for overlays. In the past this budget has been supplemented by grant money which is often specifically designated for trail overlays (see below). The primary objective of The City's trail maintenance program is to extend the life of the trails through regular maintenance, with the focus being on the designated asphalt trail throughout Waskasoo Park. Although maintenance was identified as an issue by the public and stakeholders,

the project team agreed that the Parks Facilities and Parks Maintenance staff are doing a very good job with the available budget.

The Public Works (PW) department also has responsibilities for trail maintenance, specifically signage repairs and replacement and the sweeping/clearing/repairs to trails (sidewalks) along arterial roads. The following is a description of the trail maintenance activities with the section responsible indicated in brackets:

- **Trail Sweeping** (PF) – completed approx. 3 times per year including an initial clean-up of all trails every spring. The work is done by a single machine and operator.
- **Sidewalk Sweeping** (PW) – Public Works sweeps sidewalks along arterial roads in the spring of each year.
- **Crack Filling** (PF & PW) – this work is actually subcontracted on a yearly basis, and is the cheapest and most effective way of extending the life of the trails and sidewalks. Crack filling compound is used to keep small cracks from growing by keeping out dirt, weeds, moisture, etc. Crack filling was identified in the survey as a safety concern because the compound can be a trip/slip hazard particularly for in-line skaters.
- **Overlays** (PF & PW) – complete asphalt overlays of sections of the trail are done to about 1-2% of the Waskasoo trails each year depending on available (remaining) budget. This work is contracted on an annual basis. PW does some sidewalk repairs (skin patching) using part of their overall maintenance budget. They also contract out sidewalk overlays and replacement of all types of sidewalks and complete these repairs based on a priority list established annually.
- **Root Control** (PF) – this activity involves the installation of a pvc root barrier (approx. 450mm deep) along the edges of the trail to prevent roots from undermining the trail surface. This activity is done both as a preventative measure and also in reaction to ongoing root damage at a particular location. In forested areas the installation of a root barrier should become part of the standard detail for trail construction.
- **Garbage Removal** (PF) – removing garbage and monitoring the trails and parks is a full time job for one staff member from April through October. Respondents to the survey indicated that more garbage receptacles were needed but did not identify garbage removal as an issue.

- **Amenity Repairs** (PF) – this activity includes the repair and replacement of furniture, garbage receptacles, and barriers.
- **Mowing** (PM) – Parks Maintenance is responsible for mowing a 1.0 m edge along both sides of all trails where conditions allow.
- **Vegetation Clearing** (PM) – where conditions allow, a 0.6 m clear zone on both sides of the trail as well as a 2.0 m high clear zone above the trail is maintained by clearing away vegetation.
- **Signage Repairs** (PW) – the repair and replacement of trail signs is the responsibility of the Meters & Sign section of the Public Works department. However, the budget for this work is part of the Recreation, Parks & Culture trail maintenance budget (approx. $22,000/year).
- **Bikeway Stencils** (PW)– Public Works repaints bikeway stencils (on roads) generally on a three year cycle.
- **Snow Clearing** (PW) - Public Works removes snow from all sidewalks along arterial roads throughout the winter with an objective of having all sidewalks cleared within 48 hours of a major snowfall. There is currently no snow clearing completed on any of the designated asphalt (Waskasoo) trails.

Some of the issues and challenges faced by Parks Facilities and Public Works in maintaining the trails and sidewalks include:

- **Budget** – as indicated the trails/sidewalk maintenance objective is to extend the life of the trails through regular maintenance. As costs increase (eg. price of oil related to crack filling/overlays), less money is available for these preventative maintenance activities.
- **Extent** – related to budget is the growing extent of trails and sidewalks as the City grows. Maintenance staff, budget and resources (equipment) need to grow at a relative rate.
- **Coordination** – with three groups responsible for maintenance there can be coordination issues particularly with respect to logging and properly directing calls from citizens or stakeholders who have identified maintenance concerns.
- **User Impacts –** user impacts include things like vandalism, unregulated use by motorized vehicles and diversified use (ie. shale trails used by cyclists). All of these impacts can result in increased, unscheduled and unbudgeted maintenance.

3.5 Trail Network Evaluation

This phase of work involved a technical evaluation of the strengths and weaknesses of the Red Deer trail network by the project team. A key component of the evaluation was input provided by the committee, the public and stakeholders throughout the study. This community input provided direction to team members, supplemented collected information, and often supported the observations of the team.

The technical evaluation was done by senior project team members who rode the majority of Red Deer's trails over 4 days in June. It is important to note that the evaluation did not involve a metre by metre review of all trails, although a majority of the major trails and all of the arterial road routes were reviewed. A list of trail criteria was used to evaluate the trails based on three major categories: Design, Amenities, and Maintenance. In the future, operations staff can use the criteria to monitor trail condition and identify specific locations that require upgrading.

Red Deer Trails Master Plan
Trail System Evaluation Criteria
(mark on plan/make notes as required)

A	**DESIGN**
A.1	Inadequate Trail Width
A.2	Intersection Radius Too Small
A.3	Intersection Unsafe
A.4	Controlled Crossing Required
A.5	Curb Cuts/Ramps Required
A.6	Desire Lines/Cross Cutting
A.7	Poor Sightlines
A.8	Steep Gradient
A.9	Trail Link/Route Required
A.10	On-Street Link/Route Required
A.11	OTHER DESIGN ISSUE
B	**AMENITIES**
B.1	Bike Rack Required
B.2	Trash Can Required
B.3	Bench Required
B.4	Pavement Markings Required
B.5	Traffic Signage Required
B.6	Directional Signage Required
B.7	Possible Viewpoint Location
B.8	Lighting Suggested
B.9	Barrier/Bollard Required
B.10	Landscaping Suggested
B.11	OTHER AMENITY ISSUE
C	**MAINTENANCE**
C.1	Surface Repairs Required
C.2	Trail Edge Repairs Required
C.3	Vegetation Clearing Required
C.4	Turf Repairs Required
C.5	Amenity Repairs Required
C.6	Erosion Repair Required
C.7	OTHER MAINTENANCE ISSUE

The observations of team members were documented using photographs, map notations, and reflections following the field review. The conclusions regarding the strengths and weaknesses of the trails were general in nature, and not based on frequency or precise location. Notes regarding the mitigation and remediation of problematic trails were also included. A summary of some of the key findings, including public input is provided in the following sections. The field work information is provided in Appendix E.

3.5.1 Design

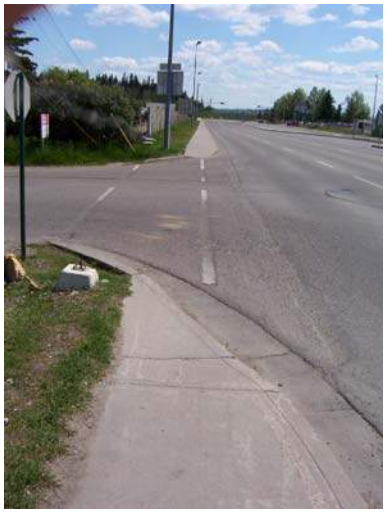
The design of trails includes a wide variety of topics that range from broad (for example, trail network connectivity) to very specific, such as the detailed design of intersections or ramps. The evaluators all agreed that the layout and extent of existing trails provides good access to most parts of the city and to existing

recreational facilities and natural features. The team also agreed that integration with the street system is satisfactory but some intersection configurations make it difficult to create good, strong, clear connections. In some areas such as the downtown, way finding needs to be improved.

Most survey respondents enjoyed the trail network, both its extensive range and beauty, but would like more trails throughout the city. As well some respondents identified the need for widening certain trails, creating better access, having separate bike and walking trails, and paving some of the soft surface trails.

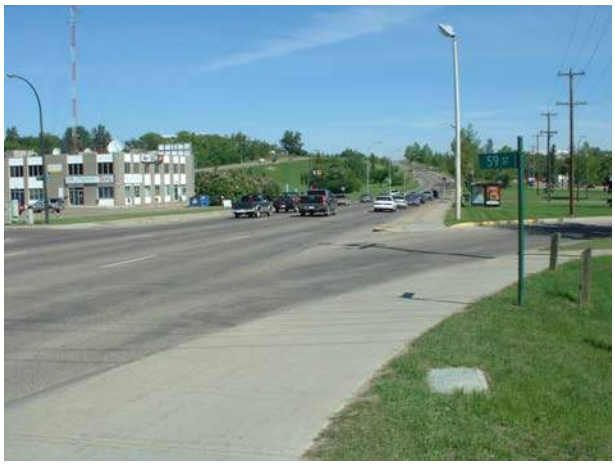
A summary of the key evaluation findings for each criteria category are provided on the following pages along with recommendations on issues and action items that should be addressed by new or modified standards.

- **Inadequate Trail Width** – most of the existing asphalt trails are 2-2.5m wide and most current standards (eg. Transportation Association of Canada) recommend a 3.0 m width for multi-use trails. Since The City of Red Deer has already adopted this 3.0 m standard for new trail construction, the evaluation focused primarily on the narrow sidewalks (1.2-1.5m) along arterial roads which are designated as trail routes. Some of these walks are further restricted by light and power poles. In Section 4.0 and 5.0 of this report, it is recommended that sidewalks along designated arterial road trail routes be widened to 3.0 m.



- **Intersection Radius too Small** – This relates to locations where two trails meet and a suitable radius (2-3m) and/or widened intersection has not been provided. The result is usually cross cutting causing erosion, damage to turf and sometimes dangerous pot holes off the trail. Only a few of these locations were identified but it is an issue for City field staff to be aware of. All future asphalt trails should include minimum turn radius of 3.0 m at intersections between trails (See Section 4.0).

- **Intersection Unsafe** – most evaluation within this criteria focused on trail/road intersections. Evaluators identified problems related to having awkward angles of approach (difficult to see traffic), small awkward pararamps, small islands with poles in them, uneven surfaces and manholes on the trail. Some of these situations occur at locations where the intersection layout may not properly accommodate the trail/road intersection due to site constraints such as utilities and road right-of-way width.



Best practices related to crosswalks are defined in the TAC Geometric Design Guide. This manual provides guidelines for the size and location of waiting areas, signage, sight lines and accommodation for persons with disabilities. The City of Red Deer 2004 Engineering Standards provides standards for a detail for trail road intersections which reflect these guidelines.

- **Controlled Crossing Required** – no locations for pedestrian controlled crossings (lights) were identified by the project team or by the public. The City of Red Deer Engineering has a defined list of existing and potential future signalized crossings and has provided input into the proposed locations of trail routes to ensure that future trails avoid channeling pedestrians and cyclists to mid-block locations and to locations which are not likely to meet the warrant for future signalization.

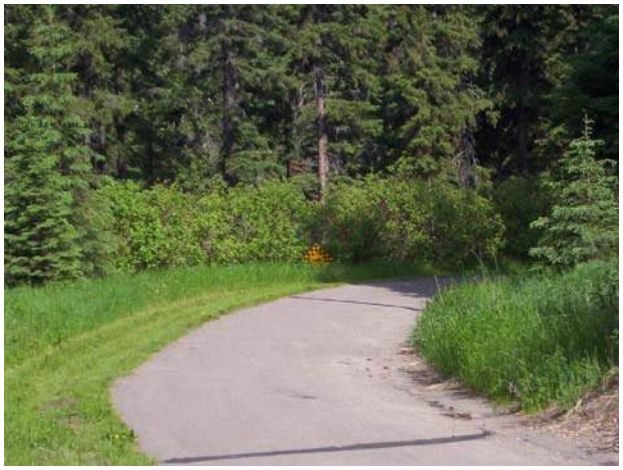
- **Curb Cuts/Ramps Required** – It was noted that the design of some ramps was problematic in terms of alignment, radii or size. As well, in many locations access to the ramps or visibility from the ramps is restricted by poles and other amenities. The TAC Geometric Design Guide provides guidelines for ramp design.

- **Desire Lines/ Cross Cutting -** Desire lines are fairly obvious throughout the trail network. These are paths of downtrodden grass, or dirt that were created by pedestrians or cyclists. One of the questions was raised, “Are desire lines problematic?” There are two possibilities to mitigate desire lines. Desire lines

could be incorporated into the trail network by formalizing them into trails, or to prevent the use of desire lines, fences, retaining walls, or shrub beds could be added to deter users. *It is recommended that the Parks Maintenance and Parks Facilities sections evaluate desire lines on a case by case basis and formalize desire lines (i.e. construct a trail link) in locations where there is a clear desire for use related to access or connection to other trails or community facilities and where increased maintenance, environmental impacts and/or safety issues would not result.*

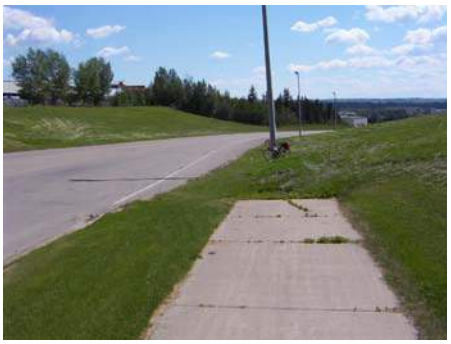
- **Poor Sightlines** – one of the noted sightline issues related to locations where the vegetation adjacent to the trail caused restricted visibility along the trail or it created a blind corner. Vegetation clearing is part of The City's regular maintenance activities. There are no specific standards or best practices for trail sightlines and so it is up to maintenance staff to ensure that vegetation does not encroach on the trail and to try and create clear sightlines in locations where safety may be an issue.

- **Steep Gradient** – In trail development, any grade above 12% is considered to be a steep grade and measures such as switchbacks or stairs are used to provide safer access. Trails should also not have a cross fall of greater than 5% which is an important consideration in the design of driveway crossings along major sidewalk trails. In some locations, where alternative access points are not available, municipalities chose to construct steep trails because it is important to the continuity of overall trail network or access to a specific feature or location. In these locations barrier free access may not be



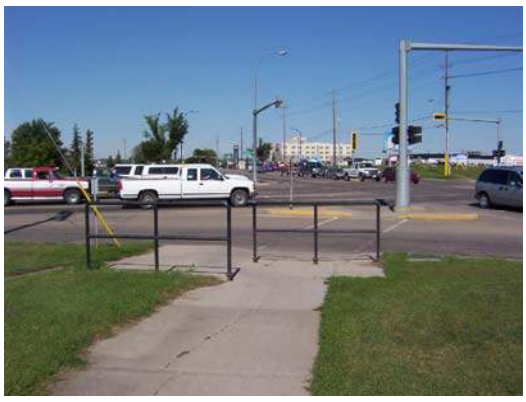
provided which is acceptable as long as alternative routes are provided and warning signs are posted. There was only one location along McKenzie Trail where a steep trail grade was noted. On this trail, switchbacks and warning signs have been used to improve safety. *It is recommended that The City widen the trail to 5.0m at switchback locations, mark the centre line and clear vegetation (only as required) to improve sight lines.*

- **Trail Link/ Route Required** – As indicated in section 5.0, a tremendous number of new trail routes and trail links have been identified by the project team, the steering committee and the public. During the technical evaluation one of the issues identified was locations where trails would end abruptly leaving the riders to back track or create desire lines. These locations have also been addressed in Section 5.0.



- **On-Street Link / Route Required** – the majority of on-street bike routes are in the downtown where way finding has been identified as an issue. Included in this study was a detailed evaluation of the downtown bike routes by a member of the project team (Peter Heppleston, P. Eng.) and a member of the Committee (Bob Johnston). This report reviewed the existing bike routes and identified new and expanded routes which became part of the proposed future trail network defined in Section 5.4. The summary report including committee comments can be found in Appendix F.

- **Other Design Issues: Offset Gates** – one of the key design concerns related to the offset gates which are located where trails intersect with major roads. Concerns were raised by the project team regarding the inconsistent installation of these gates in terms of location, layout, spacing and visibility (lack of reflective tape). In addition to the technical evaluation, engineering staff had prepared an internal



review of the gates from an operational perspective and were recommending the removal of the gates to make snow removal and turf maintenance at intersections easier. The project team was asked to complete a further review of the gates (See Appendix G) and based on this review *it is recommended that The City remove all existing offset gates as part of future intersection improvements and install 'Yield" signs for trail users.*

- **Other Design Issues: Berm Crossings** – one of the issues raised by steering committee members relates to the challenge faced by pedestrians, bicyclists and inline skaters to get through/across berms in locations where mid-block access from a neighbourhood connects with an arterial road (and associated trail). City engineering standards include berms along arterial roads to provide noise protection for adjacent neighbourhoods. Standards also provide for 3.0 m wide trails between the berm and the road. Any opening in the berm to provide trail connections, even in conjunction with a noise wall and/or planting would reduce the effectiveness of the berm and would likely also create an unsafe access (dark, poor sightlines). One of the other key issues is that these mid-block connections create the potential for mid-block crossing of major roads. *It is recommended that during the planning of future neighbourhoods, mid-block trail connections to arterial roads should be discouraged to avoid the potential for berm and mid-block crossings. It is also recommended that existing locations in which a trail route crosses a berm should not be altered or improved unless safe access can be provided without disruption of berm function.*

3.5.2 Amenities

An amenity is defined as something that is conducive to creating comfort or convenience. In terms of trail development, amenities can include bike racks, garbage receptacles, benches, water fountains, signage, or other built objects that add to the comfort of the trail user. As the technical evaluation was a general overview of the availability and accessibility of amenities, the need for additional amenities at specific locations has not been identified. In general, the level of amenities throughout the trail network is good and there is a consistent use of specific products (eg. bench style) which is equal to or better than most municipalities. Respondents to the intercept survey identified a need for a variety of

amenities throughout the Red Deer trail network. The following is an evaluation of the level and quality of the existing amenities which support the trails in Red Deer.

- **Bike Racks Required** – only a few specific locations, which needed a bike rack, were identified during the technical evaluation. However, it is important that bike racks are provided at both recreation and parks destinations where people may want to get off their bikes and walk, as well as at commercial and institutional sites to encourage more people to use their bikes as alternative (Active) transportation mode. *It is recommended that The City complete a review of all City facilities and implement an ongoing program to install bike racks at all facilities. The City of Red Deer should consider amending the Land Use Bylaw, to require new developments to provide bicycle parking, in the same way that automobile parking is required now (Bicycle Master Plan, 2000). The City of Red Deer should maintain the bike racks on buses program, and attempt to raise the public awareness of it (Bicycle Master Plan, 2000).*

- **Garbage Receptacle Required -** There were a few identified location where garbage receptacles were needed along the trails. Survey respondents indicated that more garbage receptacles were needed to improve clean up by dog walkers. The City should ensure that trash receptacles are provided at all major trail intersections and at locations where people park their cars to access the trails.

- **Bench Required -** There were no comments from the technical evaluation that dealt with the need for more benches. Section 4.0 defines a standard for installation of benches along Waskasoo, nature and neighbourhood trails.

- **Pavement Markings Required** – Both the public and stakeholders indicated support for the addition of a centerline on major/busier trail routes. Committee members expressed concerns related to cost effectiveness, demonstrated impact on safety and the fact that painted lines can be slippery. Based on the discussion, *it is recommended that The City install painted centerlines*

on the existing Waskasoo trail from Kin Canyon to Ross Street, and conduct an evaluation program, including public input, over three years to consider the effectiveness. The parameters for the selection of this location was the relatively high level of use, the mix of users, the challenging route conditions (hills) and varying sightlines. Additional routes could be selected as part of the evaluation process utilizing the same general criteria.

- **Directional Signage Required** – Both the technical evaluation and the public input identified the need for more directional signage, distance markers, maps, trailhead information, and general informational signs for trail users. Existing signage is good and consistently applied; however, there is a need for additional signage at key locations, and to define the distance and direction of key features. The Waskasoo Park Interpretive Program and Master Plan will be prepared in 2005 by the Normandeau Cultural and Natural Historical Society (NCNHS) in conjunction with a consultant. This will include a review of interpretive signage (design, logo, messages, locations, media) throughout the Park. The Waskasoo Park Interpretive Program should be expected to take the lead in interpretive signage and programming in all natural and human heritage areas in the city, especially the various parks, natural areas, ecological reserves and historic sites. The implementation of this plan will ultimately result in the installation of new interpretive signs along Waskasoo and Nature trails throughout the city. As an extension of this program *it is recommended that The City complete an inventory and evaluation of existing trail signs and define a program for the installation of additional directional signs, distance markers and information signs and maps to improve trail user experience.*

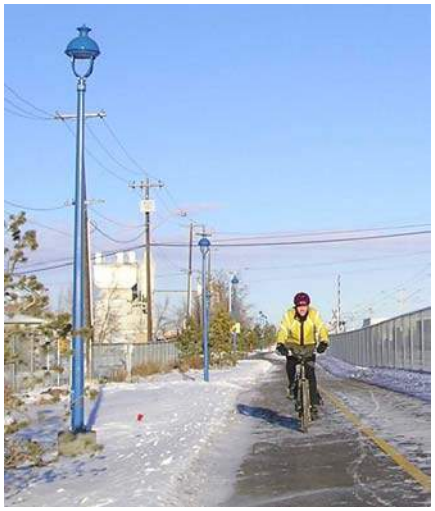
- **Possible Viewpoint Locations** – There were no new viewpoint locations noted during the evaluation or through the public input process.

- **Barrier / Bollard Requirements** – The use of offset gates to control trail use has been discussed previously under other design issues. The City also currently installs a set of bollards in neighbourhoods to discourage vehicle usage along green areas, PULs, and utility easements.

- **Landscaping Suggestions** - Comments that dealt with landscaping were primarily about maintaining sightlines, or dealing with problematic trees near the trail. The Parks Maintenance section maintains along the trails and has a hazard tree program that deals with problematic trees near the trails. The addition of landscape features such as trees or shrub beds along the trails was not an identified need during the study.

- **Other Amenities: Washrooms** - On the weekend that the technical advisors completed the trail evaluation it was noted that the washrooms were locked. It is important that all washrooms remain open for trail users between April and October. The need for additional washrooms as well as water fountains was noted by a number of survey respondents although no specific locations were identified. The existing trail map does a good job of identifying where these amenities are located within the trail network.

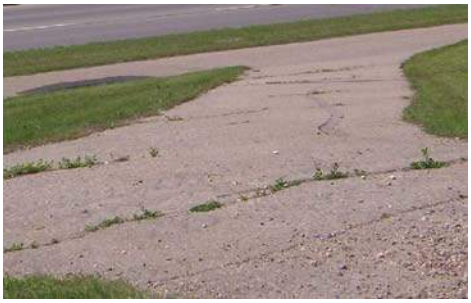
- **Other Amenities: Lighting** - The other amenity that was identified by many respondents was trail lighting. In most cases lighting is identified by the public as an amenity designed to improve safety, however, many respondents also feel that lighting is unnecessary and that users make a choice based on a number of factors if they choose to use trails at night. A discussion of trail safety and crime prevention principles is provided in Section 3.5.4. In most municipalities, the cost of lighting limits the use of trail lights to a few major trails, parks sites and key intersections. Currently in Red Deer, trail lighting is only provided around Bower ponds and a few of the bridge crossing locations which are heavily used for active transportation. In addition, lighting is generally provided by The City at parking areas and parks facilities which are part of the Waskasoo Park system. *It is recommended that The City maintain its current approach of providing trail lighting only at major trail bridges, at trail heads and at parking areas and facilities which support the trail system.*



3.5.3 Maintenance

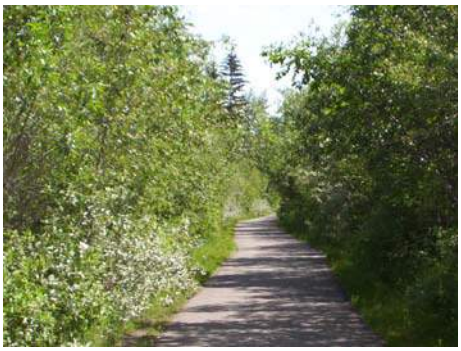
As described in Section 3.4, The City focuses trail maintenance on the Waskasoo Park trails with the objective of extending the life of those trails. As indicated, the evaluators felt that the trails were generally well maintained and in very good condition. The public and stakeholders identified some specific concerns, issues and suggestions related to maintenance. The following summarizes the evaluation of trails maintenance:

- **Surface Repairs Required** – Trail users indicated that certain trails needed to have surface repairs done as they were bumpy, or there was frost/root upheaval. Others mentioned the need to maintain all trails via repaving, repairing, smoothing, fixing bumps, and cleaning overgrowth. Some respondents also mentioned the need for less tar on areas that have been fixed, as these areas cause trip/slip hazards for roller-bladders. Stakeholder comments regarding maintenance was the need to repair lifting concrete and mitigating tree root upheaval. All of these items are being addressed each year by The City.



- **Trail Edge Repairs Required** - There were some comments regarding this maintenance issue where trail edges were noted as being 'sharp'. This can be a safety hazard for many types of users. This was not a widespread problem and can be easily addressed with topsoil and seed as part of ongoing maintenance activities.

- **Vegetation Clearing Required** - Team members identified several locations that needed vegetation clearance to maintain/improve sight lines. In most locations this was a matter of clearing back the edges by approximately 1.0m. The use of centre lines and signage ('slow') to mark blind corners can be an alternative approach to avoid clearing large amounts of forest while



keeping the trail safe.

- **Turf Repairs Required** - Turf repairs was primarily an issue related to desire lines and around gates.

- **Erosion Repair Required** - There were no comments that dealt with this issue.

- **Other Maintenance Issue: Maintenance Coordination** – One issue raised by the Committee was a concern with the dialogue between departments that deal with the maintenance of trails. This was also identified as an issue by maintenance staff. As described in Section 3.4 there is a division of trail maintenance activities between Public Works, Parks Maintenance and Parks Facilities. The evaluators agreed that the level of trail maintenance was satisfactory which suggests that both groups are fulfilling their maintenance responsibilities. To improve maintenance coordination, *it is recommended that Public Works, Parks Maintenance, and Parks Facilities have an annual maintenance coordination and review meeting to confirm scope and responsibilities, and to share and manage resources.*

- **Other Maintenance Issue: Snow Clearing** - One of the most common suggestions from both the public and stakeholders was the need for winter snow clearing along at least some major trail routes. The committee discussed snow clearing on numerous occasions throughout the study in consideration of the many issues related to this activity. These issues include capital cost for equipment, annual budget, potential impacts on trail edge vegetation and potential liability (ice build up etc.). Currently the trails around Bower ponds are cleared to assist ice maintenance on the ponds. Also most arterial road sidewalks which are designated as trail routes are cleared during the winter. Based on these discussions, and input from the public, it was agreed that a trial program should be implemented. *It is recommended that the City undertake snow clearing of one designated trail route (see Section 5.0) for a period of three years and then evaluate all of the implications related to budget, use, and liability.* To eliminate initial capital costs it is recommended that Public Works be responsible for clearing the trail as an extension of their sidewalk clearing program. Snow clearing of the trail route would be the lowest priority.

3.5.4 Other Evaluation Considerations

Active Transportation

Active transportation is any form of human-powered transportation[2]. It is any trip made for the purposes of getting to a particular destination - to work, to school, to the store or to visit friends without a motorized vehicle. There are many "active" modes of transportation including walking, cycling, in-line skating, skateboarding, ice skating (eg. on a canal). Walking and cycling are the most popular forms of active transportation. It can also involve combining modes such as walking/cycling with public transit.

Apart from the many health benefits of active transportation, there are a number of other good reasons to consider it, including climate change, health and safety, the health of the environment, and the quality of life in neighbourhoods. However, as suggested by the Intercept Survey, there is not a high population of commuters using the Red Deer trail network. This may be related to some poor trail connections into the downtown, lack of bike amenities, or users perceptions of safety and security issues. It also reflects the connection between people and their automobiles in this province.

The City of Red Deer endorses active transportation through the principles, standards and recommendations of this plan as well as previous planning documents such as the Greater Downtown Action Plan and the Transportation Master Plan. The City promotes higher use of the trails for Active transportation through the following actions:

- development of a comprehensive network of trails and on-street routes;
- advocates for sharing the road with cyclists;
- ensuring the safe integration of pedestrians, cyclists and other active users among motorized vehicle traffic through design standards;
- regularly maintaining and upgrading pedestrian and cycling facilities;
- incorporating principles of the safe integration of pedestrians, cyclists and other modes of active transportation, with community development based on research and experiences from all sources whenever appropriate. Substantial research on pedestrian and cyclists behavior, safety principles and standards

[2] Information Adapted from: Public Health Agency of Canada Website http://www.phac-aspc.gc.ca/

have been developed by the Transportation Association of Canada, US Transportation Research Board, Institute of Transportation Engineers, and the Federal Highway Administration. Some of these results have been highlighted by special groups like Walkable Communities, ICBC, Alberta Motor Association and others to promote awareness.

- favoring urban design that reduces the distances that people have to travel to get to work, retail areas, schools and recreational/leisure pursuits;
- planning streetscapes to be visually pleasing and inviting to pedestrians;
- encouraging feedback from citizens, pedestrian and cycling advocacy groups;
- The City's Bike & Ride program (Red Deer Transit) also provides opportunity to encourage and accommodate using bikes and buses as a mode for active transportation.

Safety

Trail users need a safe environment in which to travel for recreation or from the places they live to places where they learn, play, shop and work. Trail safety issues can be categorized related to user behaviour, design, operations/maintenance and crime prevention as defined below:

- **User Behaviour** – this relates to user education, experience, skill level and etiquette to avoid unsafe actions (eg. Weaving, high speeds, improper turns etc.) on the trails. The committee, stakeholders and the public all commented on the need for improved user behavior (See Trail Etiquette later in this section).

- **Design** – The TAC Geometric Design Guide as well as numerous other trail publications and reports provide design parameters, guidelines and standards for designing safe trails. In general the design of safe trails is often a function of developing an acceptable balance between level of service, cost, environmental impact, level of safety and operational requirements. This balance must reflect local values and standards. The trail principles and standards provided in Section 4.0 of this report have been prepared with safety as an objective with consideration of contemporary trail design standards, physical/environmental conditions in Red Deer, and local values and principles as defined by the public and in other City planning documents.

- **Operations/Maintenance** – The City's maintenance activities designed to enhance trail life also contribute to trail safety. These include crack filling, pot

hole repairs, removal of garbage and obstacles, repairing of trail edges, and maintaining a clear zone along the trail. The primary safety objective is to maintain a clear and smooth path of travel for users, particularly those on bikes.

- **Security** – personal security is a key factor that people use to make decisions on the time and location of trail use. Unfortunately, serious crime can occur anywhere, including trails and so it is important that consideration be given to designing trails to encourage positive behavior (See CPTED below). In addition, it is important that part of the education of trail users includes reminders about the safe use of trails including: choosing a safe time and place to exercise, exercising in well-populated places, keeping fully alert and aware of surroundings while exercising outdoors, and refraining from wearing headphones and other devices.

CPTED

CPTED stands for Crime Prevention Through Environmental Design and it is a national program that contends that architects, City planners, landscape architects and law enforcement can create a climate of safety in a community right from the start by designing a physical environment that positively influences human behaviour. The following are key CPTED principals as outlined by the RCMP[3] that are used in the realm of urban design and have implications for trail design and operations:

- **Territoriality** – Fostering residents' interaction, vigilance and control over their neighbourhood. One opportunity would be to encourage running and cycling groups to assist in patrolling of parks and to report suspicious behavior.

- **Surveillance** – Maximizing the ability to spot suspicious people and activities. Other tactics that might apply when designing trails include: installing appropriate lighting at key locations and providing unobstructed views near trails.

3 This information regarding CPTED can be found on the following Website: http://www.rcmp-grc.gc.ca/ccaps/safecomm_e.htm. The title of this web page was Creating Safe Communities.

- **Activity support** – Encouraging the intended use of public space (trails) by residents. The higher the levels of use the less likelihood for unsafe/unlawful behaviour.

- **Hierarchy of space** – Identifying ownership by delineating private space from public space through real or symbolic boundaries.

- **Access control / target hardening** – Using physical barriers, security devices and temper resistant materials, such as gates, fences, and signs, that delineate areas of access, to restrict entrance.

- **Environment** – A design or location decision that takes into account the surrounding environment and minimizes the use of space by conflicting groups; for example, avoid placing covered outdoor areas where loitering may be a problem.

Environment

Trail users indicated that being in nature (i.e. experiencing a variety of plants, wildlife, the river, scenery and terrain) was what they enjoyed best about using the trails in Red Deer. With trails through Waskasoo Park, along the river and creeks, the McKenzie trail through the old spruce forest, and the Gaetz Lake Sanctuary, trail users have access to a wide variety of natural features. In addition, there are a number of isolated natural areas in residential neighbourhoods as well as industrial and commercial areas of the city. These natural areas include isolated forests, stand alone wetland and combined tree and wetland reserves that have great potential for interpretive trails. The Ecological Services department is developing in-depth understanding of these natural areas and is working toward integrating these reserve areas within the parks system as a means of providing controlled access for recreation and education while preventing degradation (See Neighbourhood Park Ecological Reserves - Section 4.3.5).

The importance of protecting Red Deer's natural environment has been well documented in numerous reports published by The City of Red Deer, and other environmental groups. The evaluation team agreed that The City, through implementation of the Waskasoo Park Master Plan, has done a good job of integrating trails within the natural environment.

There were no specific environmental issues or concerns raised during the technical evaluation of the trails, although a number of stakeholders talked about the impacts of off-road vehicle use on areas such as the Maskepetoon Natural area and Heritage Ranch. The Ecological Services section is well aware of these impacts and has tried to implement some control measures to limit uncontrolled use. *It is recommended that a master plan be prepared for the Maskepetoon Natural Area to design and implement control measures, parking, access, trails and interpretive programming.*

Survey respondents indicated that protection of natural areas was important and suggested keeping trails out of identified sensitive areas. There was also mention that un-official trails tend to degrade natural areas, specifically mountain bikers along river banks. This is a concern in most river cities, and can be mitigated by educating users of their effects and providing separate mountain bike trails, which is the current practice in Red Deer. As well, respondents mentioned the need for removing garbage along the trails by installing more waste receptacles, providing more pick up, creating environmental awareness, and organizing volunteering opportunities for garbage collection.

Stakeholders (See Section 6.1) ranked environment as the third priority related to trail spending, after trail upgrading/new trails, and operations and maintenance. Suggested ways to spend the money on the environment included the following: preservation of natural areas/protection of pristine areas (Maskepetoon), naturalization planting (along Arterial Roads and throughout green spaces), erosion control measures, and control fencing for sensitive areas.

Alexander Way - 48 Street Promenade

The Alexander Way - 48th Street Promenade Master Plan was completed in 2004 by UMA and includes recommendations for maintaining and integrating the existing on street bike route along Alexander Way / 48th Street connecting Waskasoo Park, across downtown to Bower Ponds. The key trail elements of this proposal are a pedestrian overpass at Taylor Drive and a trail bridge over the river from the Riverlands Area to Bower Ponds. The evaluation of downtown bike routes by the project team (Appendix F) supports the continued use of 48 Street as a primary

downtown bikeway. The proposed bridge crossing was supported by some of the survey respondents and the project team, but the feasibility of the bridge is to be evaluated in more detail as part of the Special Gathering Places study currently being completed by the City.

Gaetz Avenue Redevelopment Study 2004

The Gaetz Avenue Redevelopment Study, which was recently completed by The City, includes a defined system of trail, sidewalks and on-street (service road) bike routes providing pedestrian and bicycle access along both sides of Gaetz Avenue. The RDTMP Steering Committee and the project team reviewed the draft plan and provided comments which recommended upgrading the network to include a continuous 3.0m wide trail/on-street bike route on one side of the avenue. Due to constraints such as the inconsistent amount of boulevard available, and the potential safety issues related to numerous access/street crossings and parked cars, the Gaetz Avenue Redevelopment Study has not recommended a continuous bike trail/route but rather a system of 1.5 m wide concrete sidewalks, 3.0 m asphalt trails and on-street bike routes. This system is not designed to provide for people on bikes riding through the corridor but will allow good access for pedestrians within and throughout the Gaetz Avenue commercial developments. The RDTMP has proposed a parallel bike route north of the river providing a north/south commuter bike route (See Section 5.0).

Public Art

The idea of public art as part of the trail network was not addressed during the trail evaluation or the initial intercept survey. However, during the Open House, public art was added to the list of additional amenities that users would enjoy seeing along the trails. The response was favourable and ranked highly in terms of new amenities the public would like to see along the trails.

The promotion of art and culture within Red Deer is achieved thru The City's Cultural Services and Culture Link (Cultural Development Association of Red Deer[4]). This association is dedicated to advancing culture within Red Deer and the implementation of the Red Deer Community Culture Master Plan. Recently The City was awarded the Cultural Capitals of Canada grant, which will aid in the funding for

4 From Culture Link website: www.culturelink.ws

the initiatives outlined within the Culture Master Plan. Culture Link has managed this grant on behalf of The City.

Installing public art near or around trails falls under CCC *Initiative # 8: Complementary Linkage Development.* This program would create a strategy to introduce public art pieces throughout Red Deer's trail network. Public art pieces could be a combination of installing new artwork or existing sculptures from current collections, such as the Red Deer College collection, or they may be created to serve as signage. The artwork would allow the public to experience art & culture in a natural setting in the heart of the city. An implementation plan will be proposed as a result of Project 8 of the Culture Capital of Canada initiative. (This plan will only cover a small part of the trail system.) This plan will include proposed locations for public art installation and locations that may need new signage that could be commissioned to local artists.

Trail Etiquette

Trail etiquette (i.e. poor user etiquette) was a concern to many respondents of the intercept survey. Etiquette issues included: cyclists being unsafe when passing pedestrians, the need for bicycle bells or other warning systems, dealing with pet waste, keeping dogs on leash or muzzled, and outlining rules for various users. Suggestions for promoting improved etiquette included expanding on the current educational programs in elementary schools (Better Biking Red Deer), etiquette information on maps and etiquette signage. To promote etiquette within the adult population suggestions included inserting leaflets within power bills, articles in the Red Deer Advocate, or further educational programs as recommended by the Bicycle Master Plan as defined below. *It is recommended that The City of Red Deer work with the local and the Provincial cycling community (CABC) to make adult bicycle education programs available (Bicycle Master Plan, 2000). The City of Red Deer should include information on the safety issues related to sidewalk riding in all existing bicycle education programs and information campaigns (Bicycle Master Plan, 2000). It is further recommended that The City include trail etiquette and 'rules of the trail' information on future trail maps and directional signs.* One of the other ideas discussed by the committee was the hiring of Park Rangers to provide year round enforcement and education for the trails and the entire Waskasoo Park system. These special constables would have bylaw enforcement powers and

could work with schools, bicycle groups and trail volunteers to educate trail users and address operation problems such as vandalism and off-trail use. *It is recommended that The City undertake an internal review of the cost-benefit of hiring full-time, year round Park Rangers for the entire Waskasoo Parks system.*

Universal Accessibility

An accessible trail can be defined as a trail that is accessible to and usable by people with disabilities[5]. However, with the popularity of walking as a primary form of exercise, particularly with seniors, as well as the increased use of the trails by parents with strollers, accessible trails service a wider population. Although The City of Red Deer does not have any designated trails designed for universal accessibility, many of the existing trails could be categorized as accessible based on the following general guidelines for universally accessible trails6:

- **Surface** - should be firm and stable, usually asphalt or concrete, or soil stabilizers are sometimes used on softer surface trails (wood chip or aggregate).
- **Openings** – when there are openings within the trail surface eg. the space between the boards in a boardwalk or bridge, these should not allow the passage of a sphere 12.7mm in diameter. As well spaces should run perpendicular or diagonal to travel direction.
- **Tread Obstacles** – There must be no tread obstacles such as tree roots, rocks, brush, or branches.
- **Passing Space** – At 300m intervals passing space of a minimum 1.5 x 1.5m shall be provided
- **Resting Intervals** – shall be a minimum of 1.5m in length, and have the width as wide as the widest portion of the trail segment. The slope shall not exceed 5% in any direction.
- **Slope** – the cross slope of an accessible trail should not exceed 2%. Running slopes must not exceed 5% unless rails are provided on both sides and then slope can be increased to 8% but not for more than 9m without a flat rest area.
- **Signage** – accessible trails should include signage with information on the total distance of the accessible segment and the first point of departure from the

5 From the National Center for Accessibility http://www.indiana.edu/~nca/
6 These guidelines for universally accessible trails has been adapted from "What is an Accessible Trail", Access Today, A publication of the National Center on Accessibility, 2002.

technical provisions. As well there should be an accessible parking lot with accessible access to the trail itself.

Based on these guidelines, *It is recommended that The City review trails in Bower Ponds and around Barrett Park and implement amenity improvements as required (signs, benches, rest areas etc.) to meet universal accessibility guidelines. Once implemented these trails can be identified as universally accessible trails as part of the trail network (i.e. on map and website).*