strathcona county trails strategy

Open Space and Recreation Facility Strategy

acknowledgements

Great municipalities are built through active citizen involvement and engagement in planning. Many thanks go out to County Council and administration who assisted in this planning effort, recognized the importance of investing in long range planning and displayed the fortitude to make decisions in the best interest of the County.

Of most importance, thanks go out to the:
• Residents of Strathcona County for participating in household telephone and web surveys and attending focus group meetings, and
• Agency representatives who provided information and attended meetings when asked.

Special thanks go to the project steering committee (listed below) who assisted in this planning effort (through the provision of advice, information, support, and opinions); who recognized the importance of investing in long range planning; and who displayed the fortitude to make decisions in the best interest of Strathcona County.

The project steering committee:
- Saeed Ahmad - Manager Transportation Planning
- Ryan Anders - Manager Traffic Operations and Safety
- Cory Chartrand - Supervisor Traffic Support
- Sarah Feldman- Senior Advisor, Sustainable Infrastructure and Planning
- Cindy Hanson - Manager Outdoor Community Services, Programs and Liasion
- Leslee Laing - Infrastructure Analyst, Engineering and Environmental Planning
- Paula LaPlante - Sr. Property Management Technician
- Christopher Martin - Community Peace Officer
- Dale Miller - Fire Marshall
- Scott Olson - Planner
- Don Polinski - Manager Outdoor Services Maintenance Infrastructure
- Lyndsey Radford - Assistant Transit Planner
- Rene Robertson-Potisk - Social development Liasion
- Scott Sillers - Senior Asset Management Analyst
- Janice Talbot - Landscape Architect
- Jennifer Wilson - Fitness Technician IV

And the consulting team:
- Mike Roma, RC Strategies
- Rob Parks, RC Strategies
- Ted Muller, EDA Collaborative
- Erik Mustonen, EDA Collaborative
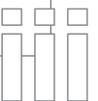
executive summary

This 2011 Strathcona County Trails Strategy will guide the provision of trails for County residents over the next 15 year period. The Strategy has been built upon the foundations of 1998 Trails Master Plan, broad community input and thorough background research and is one of many initiatives occurring under the guidance of the County's Open Space and Recreation Facility Strategy. This Strategy is "vision" versus "project" driven and includes new and creative solutions for the future provision of trails throughout the County.

The vision and guiding principles of the Trails Strategy are as follows:

Trails Strategy Vision:

Rural and urban trails throughout Strathcona County provide for a balance of recreational and active transportation uses and are provided by the County to allow for maximum positive impact to overall quality of life of residents taking into account concerns of all stakeholders.

Guiding principles:

• trails provide opportunities for recreation pursuits of all ages, thereby increasing community health and well being and improving quality of life;
• trails provide opportunities for active transportation;
• trails are important to the quality of life of both urban and rural Strathcona County residents;
• trails are key components of walkable communities and act as a catalyst for community connectedness;
• should be inclusive and accessible (within the County and beyond), and;
• trails must be provided through the involvement of all stakeholders (planning, usage and maintenance).

In order to achieve this vision and in following the guiding principles, key aspects to the provision of trails outlined in the Strategy include:

• an enhanced trails hierarchy, classification system, and high level maintenance and design guidelines looking at trail provision in four main areas throughout the County

encapsulating urban, urban fringe, dispersed rural and intense rural areas within in it;
- a project prioritization system, based on 12 project criteria, that will help decision makers contemplate proper distribution of funds allocated to trails;
- a trail effectiveness measurement framework outlining five key performance measures providing the County feedback on how effective trails are in adding to the quality of life of residents,
- a review of potential funding sources and associated thresholds for base level and specialty trail development providing transparency and clear stakeholder expectations for future trails projects.

All of these management tools and recommendations, the details of each explained herein, provide guidance and transparency for the provision of trails in the County.

This strategy also provides a recommendation regarding future off highway vehicle (OHV) use on County lands. Currently OHV's are not permitted on county roads which is not the case in other rural municipalities in the capital region. Due to the level of interest in pursuing OHV use on County lands and considering opposing viewpoints by County resident landowners, it is recommended that the County work with landowners and potential OHV users in establishing an OHV corridor(s) to allow for linkages between areas that allow OHV use under different jurisdictional control. These other areas include water bodies and crown/provincial/federal lands.

This Strategy was built by trails stakeholders in the County. It will be utilized internally by a variety of departments in the programming, planning, constructing and maintaining of the trail system. It will provide advice to County decision makers regarding future investment in, and regulations regarding, trail use.

The Strathcona County Trails Strategy will ensure that the benefits of an effective trail system are realized in the County for years to come.

contents

3

purpose and methodology

Strathcona County requires a Trails Strategy that will guide the provision of trails for County residents over the next 15 year period (to 2025). This Strategy will be built upon the foundations of the existing Trails Master Plan (1998) and is one of many initiatives occurring under the guidance of the County's Open Space and Recreation Facility Strategy. Although some of the concepts remain from the existing 1998 document, **this Strategy is "vision" versus "project" driven** and includes new and creative solutions for the future provision of trails based on:

- recent growth and physical site opportunities
- shifts in regional demographics
- new and emerging trends (such as "challenge/circuit trails" and indoor/outdoor trail interaction)
- updated internal strategic planning
- stakeholder engagement (most importantly)

The Trails Strategy will serve as a:

- tool for transparently prioritizing trail enhancement and new development projects as they are presented (both from an internal and external perspective)
- systemized approach for managing, maintaining and promoting utilization of trails throughout the County
- benchmark to measure both the importance and effectiveness of trails throughout the County (both now and as ongoing performance measurement)
- tool, developed on conjunction with all trail users, to deal with user conflicts including motorized (ATV and snowmobile use), non-motorized, cross country skiing, equine, bicycle, walk/jog interaction on trails.
- outline how management and design can mitigate conflicts

This document is the Trails Strategy and outlines recommendations for achieving the vision and goals outlined herein. It has been developed through thorough research and consultation, the results of which are summarized throughout this report and presented, in detail, under separate cover in the following reports:

- Needs Assessment Summary
- Public Consultation Summary

The following chart explains the process undertaken to develop the Trails Strategy.

4

Process Methodology

Phase	Key Activities
Phase I: **Background** **Research**	Key Activities: • Mapping • Trends and population analysis • Information review / site visitation • Internal reviews and start up meeting • Media release #1
Phase II: **First Stakeholder** **and Public** **Engagement**	Key Activities: • Intercept survey • Vested stakeholder focus group • Vested stakeholder survey • General public focus groups • Web site survey / poll • **Needs assessment summary**
Phase III: **Prepare** **Preliminary** **Trails Strategy**	Key Activities: • Guiding principals • Supply/demand analysis and prioritization matrix • Trails hierarchy / standards • Trails connections and improvements • Partnership, OHV, user and landowner strategies • **Draft Strategy** • Media release #2
Phase IV: **Second** **Stakeholder** **and Public** **Review**	Key Activities: • Council presentation • Second round of focus groups • Open house • Household survey • Web site survey / poll • **Stakeholder review summary**
Phase V: **Final Trails** **Strategy for** **Council and** **Administration** **Approval**	Key Activities: • **Final strategy documentation** • Council presentation • Final committee meeting

guiding principles

In determining guiding principles for the County's Trails Strategy, consideration must be given to overarching community planning, past trails-based planning and the overall intent of trail provision in the County.

A number of pertinent overarching or related planning documents were reviewed to develop an understanding of broad strategic planning as well as congruent planning in other County departments. Review of pertinent planning in adjacent municipalities was also included.

The Strathcona County Strategic Plan outlines a vision and a number of capstone policies that guide all decision making and service provision in the County. These policies include:

county vision

Strathcona County is a safe, caring and autonomous community that treasures its unique blend of urban and rural lifestyles while balancing the natural environment with economic prosperity. Through strong, effective leadership, the County is a vibrant community of choice.

county capstone policies

• Strathcona County strives for excellence in effective government
• Strathcona County is a safe and caring community whose residents enjoy opportunities for healthy lifestyles.
• Strathcona County fosters an economy which benefits residents, business and industry.
• Strathcona County practices excellence in customer service based on the principles of effectiveness, efficiency, economy and equity
• Strathcona County communicates effectively with its stakeholders.
• Strathcona County's human, financial and physical resources are managed in a manner that addresses community needs and priorities.

The following sources of information were included in preparation of the following guiding principles:

• The Strathcona County Municipal Development Plan
• The Strathcona County Strategic Plan
• The Strathcona County Sustainability Frameworks (Social, Environmental and Economic)
• The Strathcona County Integrated Transportation Master Plan (being developed)
• The Strathcona County Open Space and Recreation Facility Strategy
• The Ardrossan Community Recreation Master Plan
• The Strathcona County Trails Master Plan
• The Beaver Hills Tourism Development Opportunity Assessment
• The River Valley Alliance and associated planning
• The Capital Region Growth Plan
• The City of Edmonton Bicycle Transportation Plan
• The City of Fort Saskatchewan Recreation, Culture and Parks Master Plan

Planning Hierarchy

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│     Strathcona County Strategic Plan          │
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│   Open Space and Recreation Facility Strategy │
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│     Strathcona County Trails Strategy         │
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The Open Space and Recreation Facility Strategy (OSRFS) is the guiding document for open spaces and recreation facilities flowing from the County's Strategic Plan (see diagram). As the OSRFS is a guiding document, it provides direction for the Trails Strategy guiding principles.

The OSRFS vision is as follows:

- invest in people of all ages through opportunities for improved health and wellness;
- revitalize existing parks, open spaces and recreation facilities before investing in new facilities;
- create an integrated system of indoor and outdoor places and facilities to meet multiple recreation needs, across multiple locations;
- reduce the ecological footprint of development; and
- create opportunities for community partnerships and stewardship.

The **existing Trails Master Plan includes a vision** of *"potential walking, cycling, skiing or riding trail opportunities within 15 (sometimes driving) minutes of most residents and incorporate barrier free design"* as well as numerous objectives for the County's trail system which can be summarized as follows:

- will provide continuous, multi-use, safe, accessible, seasonal, environmentally sensitive corridors which reflect current plans and development strategies for Strathcona County;
- will incorporate a large "human" component by including community input, educational strategies, "grass roots" approach, opportunities for "sweat equity", communication and listening to other users to foster innovative alliances and partnerships; and
- will have varied terrain, length of loops, difficulty, uses and scenery.

Based on the aforementioned vision and objectives at the various levels of planning documentation and initiatives, the following guiding principles have been developed for this Trails Strategy.

Strathcona County Trails Strategy guiding principles:
- trails provide opportunities for **recreation pursuits** of all ages, thereby increasing community health and well being and improving quality of life
- trails provide opportunities for **active transportation**
- trails are important to the quality of life of **both urban and rural** Strathcona County residents
- trails are key components of **walkable communities** and act as a catalyst for community connectedness
- should be **inclusive and accessible** (within the County and beyond)
- trails must be provided through the involvement of **all stakeholders** (planning, usage and maintenance)

Stakeholder Input:
- 64% of household survey respondents, 79% of web survey respondents and 82% of group survey respondents agree that trails should be a way for people to travel from one place to another and not just a place for recreation and fitness
- 29% of households survey respondents use the existing trail system for transportation (35% of urban residents and 4% of rural residents)

needs assessment summary

trail system analysis

Planning Criteria

The following criteria have been established in guiding future planning for the County's trails system. The Trails Strategy should:

- further the objectives of Strathcona County's Strategic Plan for Social Sustainability, Environmental Sustainability, Economic Sustainability and Resource Management;
- realize the resource limitations of the County and/or of other relevant partners, to adequately support the capital development and on-going maintenance required;
- consider the regional context making use of existing linkages and suggesting new ones where needed;
- support active transportation initiatives by providing active commuter routes and realizing that trails use occurs year round;
- integrate with transportation infrastructure in regards to access, parking and public transit;
- consider existing County dynamics in regards to rural and urban areas and associated resource provision;
- accommodate majority need and ensuring trails are assessable by providing for multi-use trail activity thereby leading to an optimum user experience;
- promote public safety on trails and manage County liability on the trail system; and
- consider the perspectives of landowners adjacent to County trails

Strathcona County Geography

Trails in the County are offered in both urban and rural areas. The following explains trail provision in six main geographical areas throughout the County. (These areas are derived from the 2007 Strathcona County Municipal Development Plan Bylaw 1-2007, Policy Areas, Map 12. They are, however, generalized in a broad brush analysis to develop a trails strategy and not for any other purpose.)

1. The urban area of Sherwood Park to the north includes newly developing / planned neighbourhoods such as Emerald Hills and Cambrian Crossing. The urban area (existing and planned) has a concentration of trail users, destinations and recreational resources. Active transportation commuting linkages with Edmonton are important as are connections to the North Saskatchewan River Valley. Connections to the City and valley are limited due to barriers created by major roadways, railroad lines and land uses not conducive to trails.
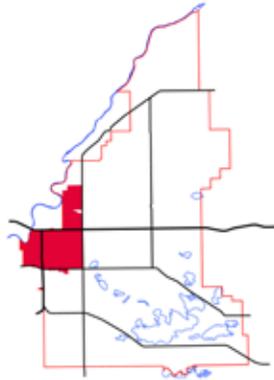
2. The urbanizing area / urban fringe of Sherwood Park extends east to Ardrossan and south to Highway 628. It includes the County's Country Residential Policy Area and the Rural/Urban Transition Policy Area. Linkages between urban Sherwood Park and these fringe areas are important yet limited due to distance and land configuration. The Sherwood Park Natural Area and the off-leash dog park are in the southern portion of the fringe.
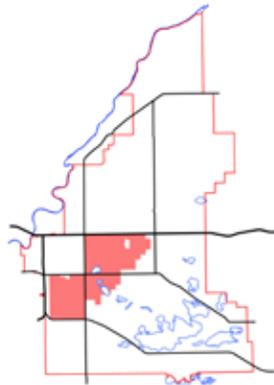
3. The southeastern part of the county is characterized by rural residential developments, several small agriculture based hamlets and intensive recreational uses (such as equestrian trail use, water based activities and snowmobile use on the water bodies in the winter). This area encapsulates the Strathcona Wilderness Centre and it borders on the major regional recreational resources of Elk Island National Park, Cooking Lake – Blackfoot Provincial Recreation Area and Ministik Lake Game Bird Sanctuary. The Beaver Hills Moraine Policy Area and a number of Conservation Policy Areas are also located in this area.
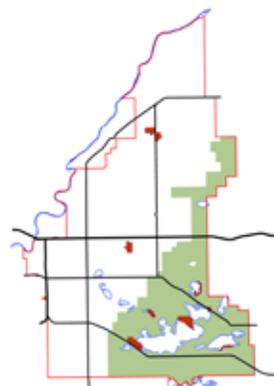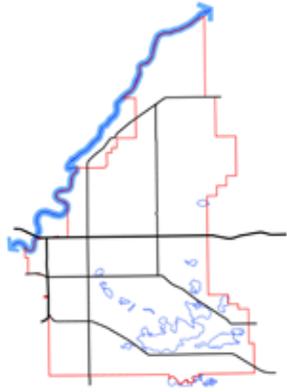
4. The Saskatchewan River Valley borders the County on the northwest. Major existing and proposed regional trails run along the river valley as part of the Capital Region River Valley Park Implementation Plan. Existing and proposed bridge crossings of the river are important points for trail routes.
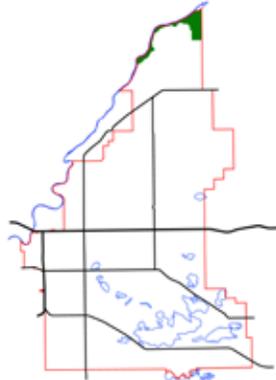
There is also a narrow, isolated Conservation Policy Area at the northernmost end of the County, within the river valley corridor.
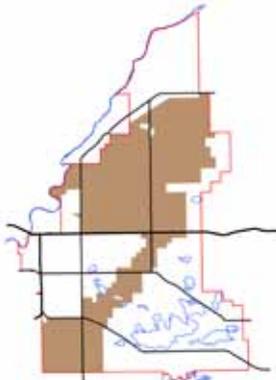
5. Rural areas of country residential and agricultural land (Agriculture Large Holdings Policy Area and Agriculture Small Holding Area) predominate in the north-central and southwestern parts of the County. There are limited trails throughout this area.

6. The Heartland industrial area (Industrial Heavy Policy Area, Industrial Light/Medium Policy Area and Agri-Industrial Transition Policy Area) is found in the northern part of the county. There is potential for trails in this area of the County to connect to the Fort Saskatchewan trails system and ultimately to the Ironhorse Trail further north. There is also potential for regional trail connections to the North Saskatchewan River Valley corridor to the north.

11
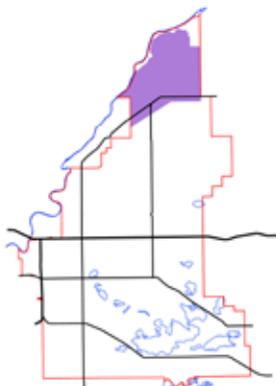
inventory

Strathcona County currently manages and maintains trails in both urban and rural areas. The County is currently undergoing a detailed inventory and assessment of existing trails throughout the County. Although the following maps outline the trail system in Sherwood Park (urban) as well as throughout the rural areas of the County, it is important to note that updateing the trails is an ongoing process, and the trail routes outlined on the following maps may be revised. The County maintains 88 km of asphalt and 14 km of granular/brick/stone trails throughout urban Sherwood Park.

Existing Trails

Regional trails traverse or border the county (refer to Figure 1.) The Waskahegan Trail runs from Ministik Lake through the southeastern corner of the County to Cooking Lake – Blackfoot Provincial Recreation Area and Elk Island National Park and then across the north-central part of the county to Fort Saskatchewan. A short segment of the TransCanada Trail from Edmonton goes through Sherwood Park and ends there. Another segment starts in Fort Saskatchewan and heads north.

There are localized pedestrian and/or bicycle trail networks in Sherwood Park (refer to Figure 2), the Strathcona Wilderness Centre (biking not permitted), the Sherwood Park Natural Area and the Strathcona Science Park. The JR Trail provides connections in the urban fringe area. Just outside the county there are existing multi-use trail networks in Fort Saskatchewan, Elk Island National Park, Ministik Lake Game Bird Sanctuary, Cooking Lake – Blackfoot Provincial Recreation Area and the City of Edmonton. Cross country ski trails are maintained at the Strathcona Wilderness Centre.

Current equestrian trails are on private land in relation to the stables east and southeast of Sherwood Park. Ministik Lake Grove Bird Sanctuary, the Sherwood Park Natural Area and the Cooking Lake – Blackfoot Provincial Recreation Area also have equestrian trails.

There are existing snowmobile routes (groomed by non-County groups) on private land in the northern portion of the county and use is permitted on frozen lakes especially Boag, Big Island, Half Moon, Woodenpan, Antler, Cooking, Wanisan and Hastings Lakes. Ministik Lake Game Bird Sanctuary also has an extensive system of snowmobile trails open from December 1st to the end of February (minimum 15 cm snow required.) Cooking Lake – Blackfoot Provincial Recreation Area also allows access in some areas (minimum 30 cm of settled snow.)

12

Proposed Trails (to date)

There is a network of proposed county-wide trails identified in the Strathcona County Trails Master Plan (1998). The proposed trails follow potential alignments resulting from natural or man-made features. Within Sherwood Park, there are two especially notable recommended connections. One is to add a route along Petroleum Way through the Highway 216 underpass tunnel (currently being improved) to the Strathcona Science Park and ultimately the City of Edmonton trail system. The second is to provide a route from Clover Bar Road along the south side of the Yellowhead Highway through five interchanges to the Science Park and the pedestrian bridge across the river. Other proposed routes would connect rural areas of the County to Sherwood Park south of Wye Road and southward from Clover Bar Road.

Petroleum Way

The City of Edmonton's Conceptual Bicycle Network master plan (2009) proposes three bicycle paths linking to Strathcona County. One of these currently exists, crossing at a pedestrian bridge just upstream from the Yellowhead Highway to connect with Petroleum Way trail alignment. Improvements are planned at the tunnel beneath Highway 216 (Anthony Henday Drive) and the City of Edmonton proposes an additional bicycle trail connection at the Sherwood Park Freeway – Wye Road intersection.

Work completed by the River Valley Alliance also proposes an extensive network of additional trails within the North Saskatchewan River Valley that will ultimately connect and integrate portions of seven Capital Region municipalities that border the North Saskatchewan River Valley. Planning for accessibility of County residents to this regional resource is important in furthering the concept plan..

Capital Region River Valley Park Concept Plan

LEGEND

EXISTING TRAILS:
- TRAIL
- SIDEWALK
- TRANSCANDA TRAIL (ROUTE)

- PROPOSED TRAIL
- MAJOR ROAD
- ROAD
- RAILROAD TRACKS
- STREAM
- NATURAL AREA
- LAKE
- URBAN SERVICE AREA
- HAMLET
- COUNTRY RESIDENTIAL
- COUNTY BOUNDARY

N. Saskatchewan River

City of Edmonton

Yellowhead Trail

Strathcona
Science Park

Petroleum Way

Broadmoor Blvd.

Sherwood Dr.

Yellowhead Hwy.

Clover Bar Rd.

Highway 21

Lakeland Dr.

Sherwood Park

Baseline Rd.

101 Ave. NW

17 Street

Highway 216

Clover Bar Rd.

Granada Blvd.

Sherwood Dr.

Brentwood Blvd.

Sherwood Park Fwy.
/ 82 Ave. NW

Wye Road

City of Edmonton

216

Whitemud Dr.

0   1   2 km

Hwy. 628

Dog Off Leash Area

Sherwood Park Natural Area

Sherwood Park, Existing Trails Information

LEGEND

EXISTING TRAILS:
— TRAIL
— SIDEWALK
— TRANSCANDA TRAIL (ROUTE)
— WASKAHEGAN TRAIL (ROUTE)
— PROPOSED TRAIL
— MAJOR ROAD
— ROAD
--- RAILROAD TRACKS
— STREAM
NATURAL AREA
LAKE
URBAN SERVICE AREA
HAMLET
COUNTRY RESIDENTIAL
COUNTY BOUNDARY

Strathcona County, Existing Trails Information

15

needs assessment findings

A number of themes or issues emerged based upon the research conducted as outlined in the Needs Assessment Summary Report (Appendix #1). While in some instances overlap exists between the themes / issues, they are presented as follows and provide a foundation for future decision making regarding trails in Strathcona County. The order in which each is presented is not indicative of its relative importance.

Partnerships in Delivery

Due to increased demands for services and funding limitations, the provision of recreation and transportation services (including trails) has to consider other funding sources to improve and optimize service delivery. This is already apparent as naming sponsorship of existing County recreation resources (i.e. Shell Fitness Centre) and the involvement of third parties in the County taking a greater role in service provision (i.e. Centennial Park, Donaldson Park, Hastings Lake Community Association). In engaging the private sector, not-for-profits and others in trail provision, a framework needs to be developed that describes how Strathcona County will interact with other parties in the development, maintenance and management of trails. The County has developed a Community Partnerships Projects process which is expected to guide how the County partners with groups in the provision of recreation amenities.

The County is willing to continue to partner with groups in the provision of trails infrastructure and maintenance and the County may allow term naming / branding of components of the trail system in exchange for sponsorship.

Off-Highway Vehicle Use

Off-highway vehicle (OHV) use in rural areas has been a major topic of discussion throughout the Capital Region. It also has been identified in many of the consultation mediums used throughout this process as requiring attention. Although the County current does not allow OHV use on its lands, the level of community interest warrants the County revisiting its stance on OHV use. If a decision is made to allow OHV use on County lands, the permitted use could be in certain areas (i.e. key linkages between water bodies for snowmobile users

16

or direct linkage routes to major thoroughfares like the TransCanada Trail for ATV or dirt bike users). If the decision is made to continue as is (prohibit the activity on County lands), more stringent measures could be taken to monitor and police the situation. Alternatively, efforts to control the situation could remain status quo. If the County is willing to readdress the situation, a strategic approach for allowing or disallowing the activity must be presented.

> The County will revisit its stance on OHV use on rural County-owned lands.

Active Transportation

Trails are not simply used for recreation; they play an important active transportation role. To a greater extent, trails are being considered as components of a transportation network. Rather than using public transportation or private vehicles more people are using trails as a means of getting to work, to the store, etc. Recognizing that trails are transportation corridors as well as conduits for recreation will impact the design, development, maintenance and management of the trails system.

> The County considers trails as part of its integrated transportation network.

Consideration	Description
Connecting employees and employers	Ensuring residences and places of employment, education centres and recreation centres are connected where at all possible, including trail connections to the City of Edmonton and other adjacent municipalities
High speed lanes / direct connections	Allowing known active transport routes and designing to accommodate for direct connections where possible
Education and promotion	Educating residents on the benefits of active transportation to the environment and to the individual
Connecting residents and mass transit system	Ensuring connections exist for residents and mass transit system for commuters

Rural Trails

Strathcona County is a rare municipality as it includes both rural and urban populations. From a governance perspective, the County has an obligation to provide recreation opportunities for all residents. As such, the idea of a rural trail system was discussed at a number of input sessions and meetings. A rural system could include a variety of activities and trail uses (including walking, hiking, bicycling, equestrian, off highway vehicles, etc.) and would have a significant impact on both capital and operational budgets. Currently the County does not have an interconnected rural trail system however destination "drive to" trail-based activities do occur at areas such as the Strathcona Wilderness Centre.

The County is open to providing trails in an integrated rural trail system.

trails provision guidelines

Trail provision guidelines are needed for both the development and maintenance of trails. Development guidelines refer to a variety of things such as composition, surface finishes, widths and even accompanying amenities (e.g. benches, garbage receptacles, etc). Guidelines do exist, to some degree, in the County's Open Space Design Standards (OSDS 2006). In terms of maintenance, guidelines need to be set that would address the conditions of existing trails (e.g. resurfacing, snow clearing, etc). The development of trail guidelines must include a review of the existing approach taken by the County such as examining procedures both internally and in coordination with the development industry, for trail planning and construction. It would also include guidelines for trail maintenance by the Transportation and Agriculture Services (TAS) and Recreation, Parks and Culture (RPC) departments (e.g. snow removal within eight days of a snowfall). The following chart outlines current operations and maintenance responsibilities for County trails (As of August 2, 2011). Note; PDS refers to Planning and Development Services, CPC refers to Capital Planning and Construction.

Task	PDS	CPC	TAS	RPC	Other
Planning	x				x
Conceptual Design	x	x			x
Detailed Design		x			x
Construction		x			x
TCA Reporting			x		
Snowclearing			x		
Re-Gravel (gravel Trails only)				x	
Surface Maintenance (Other than re-gravel)			x		
Surface Preservation			x		
Rehabilitation			x		
Signs				x	
Benches, Trash Cans				x	

18

Trail Enhancement Projects

The growth in the number of users and the types of uses for the trails suggests that the existing trail network in Strathcona County needs to continually be enhanced and expanded. There are new areas of development that will require trail development. As well linkages connecting these new areas and linkages between existing areas will require some attention.

Some of the areas that were identified through the consultation and planning process include the following (not presented in rank order). **It is important to note that these areas of focus were identified during the needs assessment phase of the project and do not necessarily comprise the ultimate recommendation of the Trails Strategy.**

Area	Rural or Urban	Description
Connection to Strathcona Science Provincial Park	Urban / rural	Connection of Sherwood Park to City of Edmonton and River Valley Alliance system including active transportation bicycle commuter routes to Edmonton
Strategic connections for snowmobile access	Rural	North-south connections from Ministik Lake Game Bird Sanctuary, to Cooking Lake and Cooking Lake – Blackfoot Provincial Recreation Area and up the east side of county to connect with Fort Saskatchewan trails in northern Strathcona County and the Iron Horse Trail further north *If the activity is allowed
Walkability in commercial areas	Urban	Commercial areas adjacent Baseline Road and Broadmoor Road
Strathcona Wilderness Centre to Cooking Lake – Blackfoot Provincial Recreation Area	Rural	Linkage from County resource to adjacent Cooking Lake – Blackfoot Provincial Recreation Area to capture interpretive "synergies"
Linkages in higher density rural areas	Rural	Bicycle and pedestrian linkage from high density rural subdivisions adjacent to Sherwood Park's southwest boundary and continuous linkages along the south side of Wye Road
Equestrian loop trails	Rural	Loop trails at the north end of Cooking Lake and north shore of Hastings Lake
Country Residential Policy Area Trails	Rural	Trail connections throughout the Country Residential Policy area to connect residents to the urban service area. (Refer to Appendix for actual trail routes)

*some of these initiatives are outlined in the map on page 21 and in the appendix

Aside from specific areas of concern, preferences on trail amenities were also identified in the needs assessment process. The most frequently mentioned trail amenities desired were (not presented in rank order):

- Staging areas (rural)
- Waste receptacles (urban and rural)
- Washroom facilities with water (rural)
- Signage (urban and rural)
- Lighting (urban and rural)
- Benches (urban and rural)
- Line painting on trails (urban)

In terms of overall priorities for new types of trails or major enhancements to existing trails, priorities identified through research and stakeholder input included (not presented in rank order):

- Trails that support snowmobile usage
- Trails / connections that improve overall trail connectivity in new and older areas
- Trails that promote / facilitate active transportation
- Paved shoulders/bike lanes on existing trails and roadways
- Rural walking trails and a rural trail system
- Ensure connections to the TransCanada Trail and Iron Horse Trail are established

  *Partnerships with groups were also seen as important considerations for future trail development and could include "in kind" services, financial contributions and maintenance duties.

LEGEND

Desired Snowmobile Trail on Land
Desired Snowmobile Trail on Ice
Desired Equestrian Trail
Desired Bike/Hiking Trail

Desired Staging Areas
(Trailer Parking, Toilets):

S₁ Shared Equestrian/Snowmobile
    – Collingwood Cove

S₂ Equestrian – Ministik

Desired Snowmobile Access to
Food/Fuel Services:

F₁ Food/Fuel
F₂ Fuel
F₃ Fuel
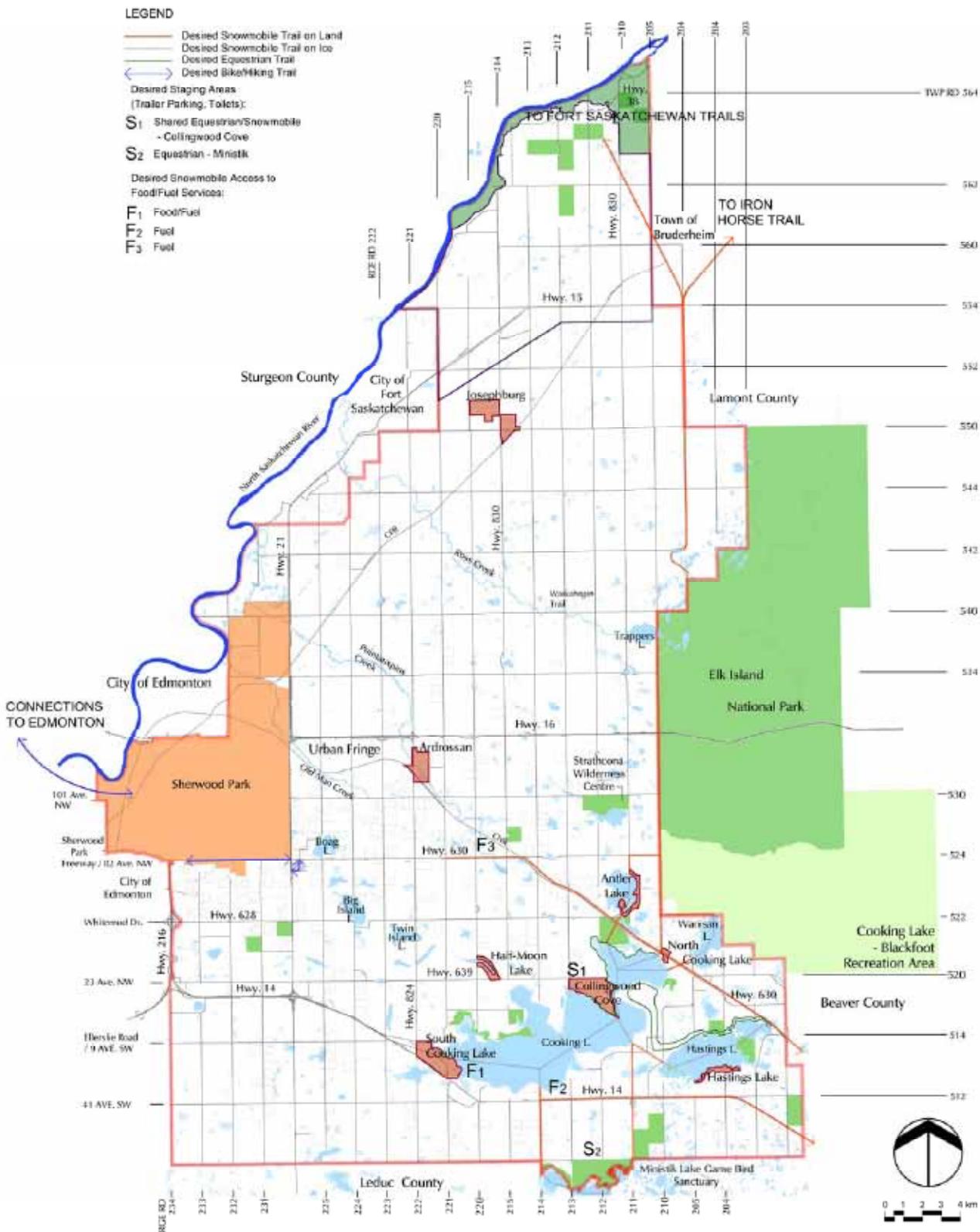
Specific Future Trail Development as identified through the Needs Assessment Process

21

Trail Project Prioritization

Further to the number of current and expected future trail development or maintenance projects that have been uncovered, a prioritization system for assessing trail based projects in the context of limited funds will help County decision makers in contemplating priority projects (now and in the future). Criteria for assessing trail based projects identified throughout the process are identified in the following table:

Criteria	Level of Importance	Description
Internal connectivity	Very	Linkages to established networks and existing resources within the County
Improved safety	Very	Improving safety on existing trail system and / or avoiding safety concerns where trails do not exist
Land ownership (County owned)	Very	If proposed project does not occur on County lands, securing land can be costly and difficult
Partnership opportunities	Very	Partnerships with groups or external organizations in raising construction capital and / or ongoing stewardship
Cost based (capital and operating)	Very	Costs of trail development must be assessed in relation to other projects
Promote active transportation	Very	Creating linkages in areas where active transportation opportunities are enhanced including using trails as a primary mode of transportation as well as limits trail users to the mass transit system
Introduction of new trail activities, programs and events	Somewhat	Provision of trail activities / types that do not currently exist in the County
Balance of activity throughout County	Somewhat	Ensuring that all residents have access to trails, including a rural / urban balance
Majority impact	Somewhat	Ensuring multi-use of system and impacting the most residents possible with investment
Environmental impact	Somewhat	Ensuring that design minimizes environmental impact and promoting linkages where environmental disruption can be avoided
External connectivity	Somewhat	Ensuring that connection between County residents and resources can be achieved with external resources
Avoidance of conflict	Somewhat	Ensuring least impact on non-trail users and designing trails to avoid conflicts between users and landowners as well as different types of trail users

Multi-use of Trails

There are innumerable activities (including walking, jogging, bicycling, in-line skating, equestrian, etc.) for which users access the trails. This has implications for the provision of the trails. Accommodation needs to be considered for a variety of non-motorized and motorized uses. It is important to note that although multi-use can be achieved for some trail activities, there are some activities that cannot occur on a single trail (simultaneously or otherwise). Some ideas and findings related to ensuring multi-use of the trails system (rural and urban) are outlined as follows:

Idea	Rural (R) or Urban (U)	Description
Signage / mapping	R, U	Use signage and mapping to explain proper trail etiquette, bring awareness to multiple user issues and offer suggested "self-mitigation"
Controlled use	R, U	Controlling use of trail system based on type of user, time of use and season
Design	R, U	Ensuring aspects of design such as trail width, surfacing, lines of sight, grading are considered for all user types and to allow for appropriate simultaneous multiple uses
Facilitating volunteer stewardship	R, U	Training and empowering volunteer policing and education of multi-use initiatives
Line painting	U	To facilitate shared use of the trail system by designating lanes for different uses

Conflict Resolution

As the number of users and types of uses increases on the trail system (rural and urban), the potential for conflict among trail users and between land owners and trail users increases. To avoid conflict and mitigate conflict that does occur, mechanisms / strategies must be in place. These strategies would involve a broad spectrum that could range from simple signage to a mediation process. The following chart explains information collected regarding potential mitigation of different types of conflict.

Mitigation Strategy	User vs User (UU) or Land Owner vs User (LU)	Description
Buffers and screening	LU	• Creating separation from trail and adjacent landowners through design including spatial buffers, tree stands or structures
Education / promotion	UU/LU	• Educate users on proper trail etiquette • Educate users on landowner issues / concerns • Promote benefits of land value adjacent to trails
Increased policing	UU/LU	• Increase number of paid, and potentially volunteer, patrols on trail systems
Design	UU	• Sightlines, line painting, trail width, grading
Signage	UU/LU	• Educate trail users on proper trail etiquette and allowed uses
OHV use	LU	• Development of specific areas in the County where activity can occur or confirmation that use is not suitable in the County

Performance Measurement

As more demands are placed on the County's trail system through increased use and broader functionality and as increasing County resources are allocated to trails, it is incumbent upon the County to develop a performance measurement system to assess the effectiveness of trails in achieving desired outcomes (such as resident access and active transportation). Performance measurement will help Strathcona County assess the effectiveness of investment in trails and will ultimately be valuable in promoting the trail system as a viable, sustainable and important target for public spending. Performance criteria identified throughout this process include the following:

24

Criteria	Level of Importance	Potential measurement
User counts	Very	Number of users
Safety	Very	Number of incidents (criminal, injury) Number of complaints
Physical state	Very	Consistency of footing Deterioration of surfacing. Spot inspections by staff and / or volunteers for trail condition and 3 yr formal conditions assessment cycle
Satisfaction surveys	Very	Feedback from users Feedback from non-users
Origin of users	Somewhat	Measured economic impact

The Role of Strathcona County

The current role of the County in trail provision involves the planning, programming and developing, constructing, managing managing and maintaining trails throughout the County. Ideas brought forward by groups and through research as to how to enhance this role included:

- Recognition of groups who help manage and maintain trails
- Provide information / mapping, awareness and promoting of trails through existing media (website, newspaper, newsletter)
- Hosting or facilitating trail-based special events
- Facilitation of private land owners allowing access for trail linkages (with insurance)
- Garnering ongoing advice from trail users
- Facilitate trail stewardship groups in neighbourhoods / specific areas

*For more information on the aforementioned issues / areas of focus or to reference any background research conducted, please refer to the Needs Assessment Summary and Public Consultation Summary under separate cover.

strategy vision

The following vision for Strathcona County trails has been developed in consideration to existing strategic planning, community consultation and research and incorporates the guiding principles as defined.

Rural and urban trails throughout Strathcona County provide for a balance of recreational and active transportation uses and are provided by the County to allow for maximum positive impact to overall quality of life of residents taking into account concerns of all stakeholders.

Implementing the Strategy Vision requires a coordinated effort between trail planners, users and adjacent landowners. Although the County currently has effective protocols in the planning, development and maintenance of trails, continuous community engagement in the process will strengthen the delivery of existing and new trails throughout rural and urban areas of the County.
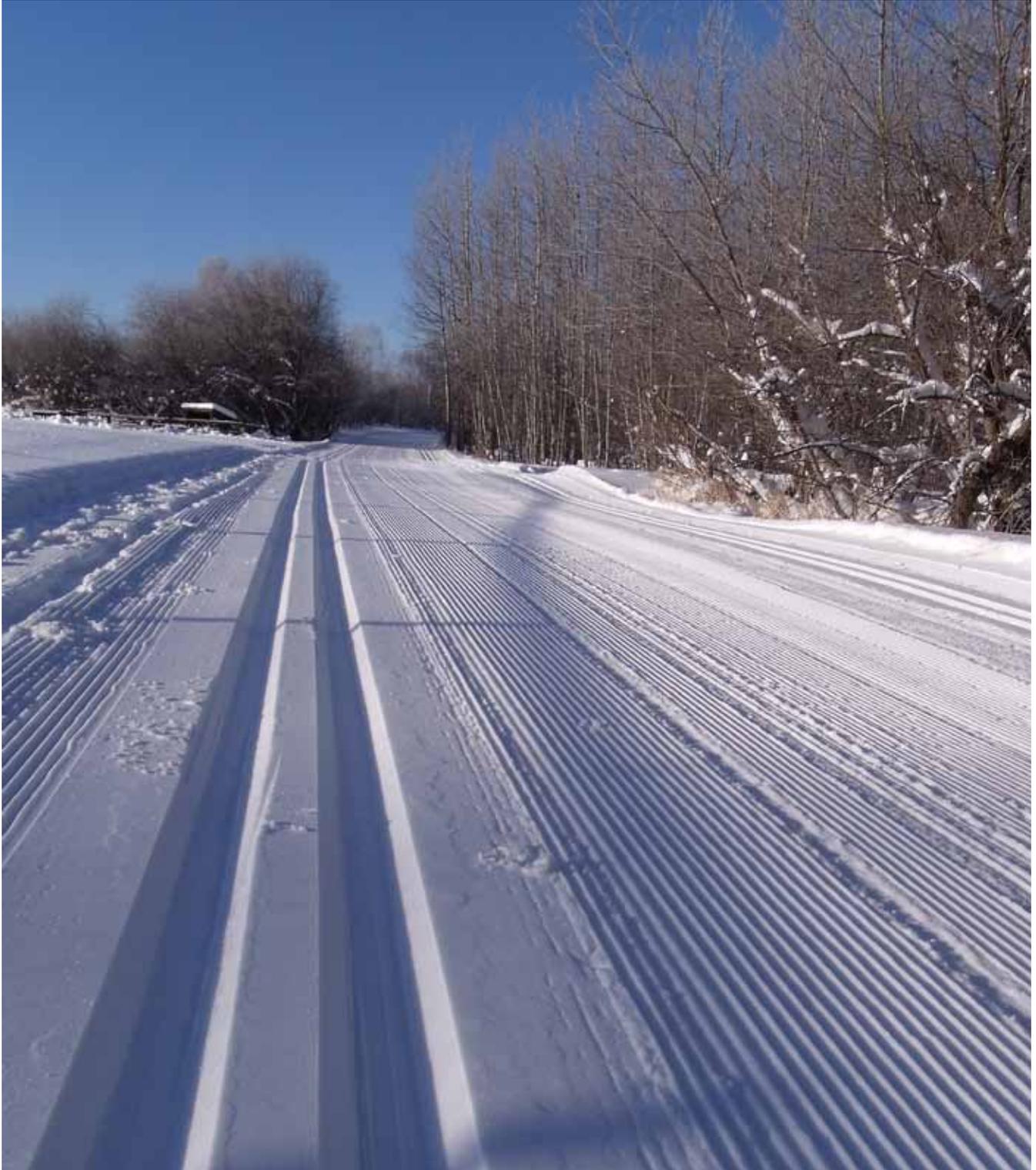
hierarchy and guidelines

trail system concept

In providing and managing trails it is integral to understand the varying functions trails provide. Trails provide:

- linkages between population concentrations and significant destinations—recreational / employment / commercial opportunities—as active transportation
- connection to, or within, regional trail systems
- recreational circuits within attractive natural areas
- recreational circuits where the main user objective is health and well being

The following trail classification system has been developed as a structured hierarchy that recognizes different types of trails based on trail location within the County, expected uses and associated maintenance requirements. This approach ensures that trail resources are invested in an optimal fashion allowing the County to focus efforts where the need for trails is greatest rather than a policy of "one size fits all". Recognizing a varying level of trail provision within the County is especially important when considering urban and rural areas, especially those rural areas adjacent to Sherwood Park where residents may expect trail provision reflecting an "urban feel".

Opportunities for new and enhanced trails

Natural features throughout the County including creeks such as Old Man Creek, Point aux Pins Creek and Ross Creek, may afford corridors for top of bank trail connections and nature-based interpretation.

Existing **easements** and rights-of-way especially along roads, pipelines, railroads, drainage courses and sewer lines, also provide opportunity for future trail layouts.

Any **new developments** within the urban or urbanizing areas have requirements to provide for pedestrian circulation.

Existing regional trail systems such as those outlined in the Capital Region River Valley Park plan and segments of the Trans Canada Trail provide significant opportunity both within the County's existing trail system as well as linking County trail users to broader regional and national trail systems.

Areas of **public land and buffers** in rural areas, such as along the edge of Elk Island National Park, can potentially be used for strategic trail linkages.

Historical trails throughout the County and the Strathcona Wilderness Centre could also be further enhanced.

Constraints for new and enhanced trails

General barriers to trail development include the Canadian National and **Canadian Pacific Railroad tracks, major roadways** especially the Yellowhead Highway, Highway 216 / Anthony Henday Drive and Highway 628 / future Whitemud Drive extension.

The creation of trails in previously developed areas (both rural and urban) is a challenge due to **insufficient land / corridor allocation** for trails and as previously roads constructed in the past often have not allowed enough width for pedestrian or bicycle use.
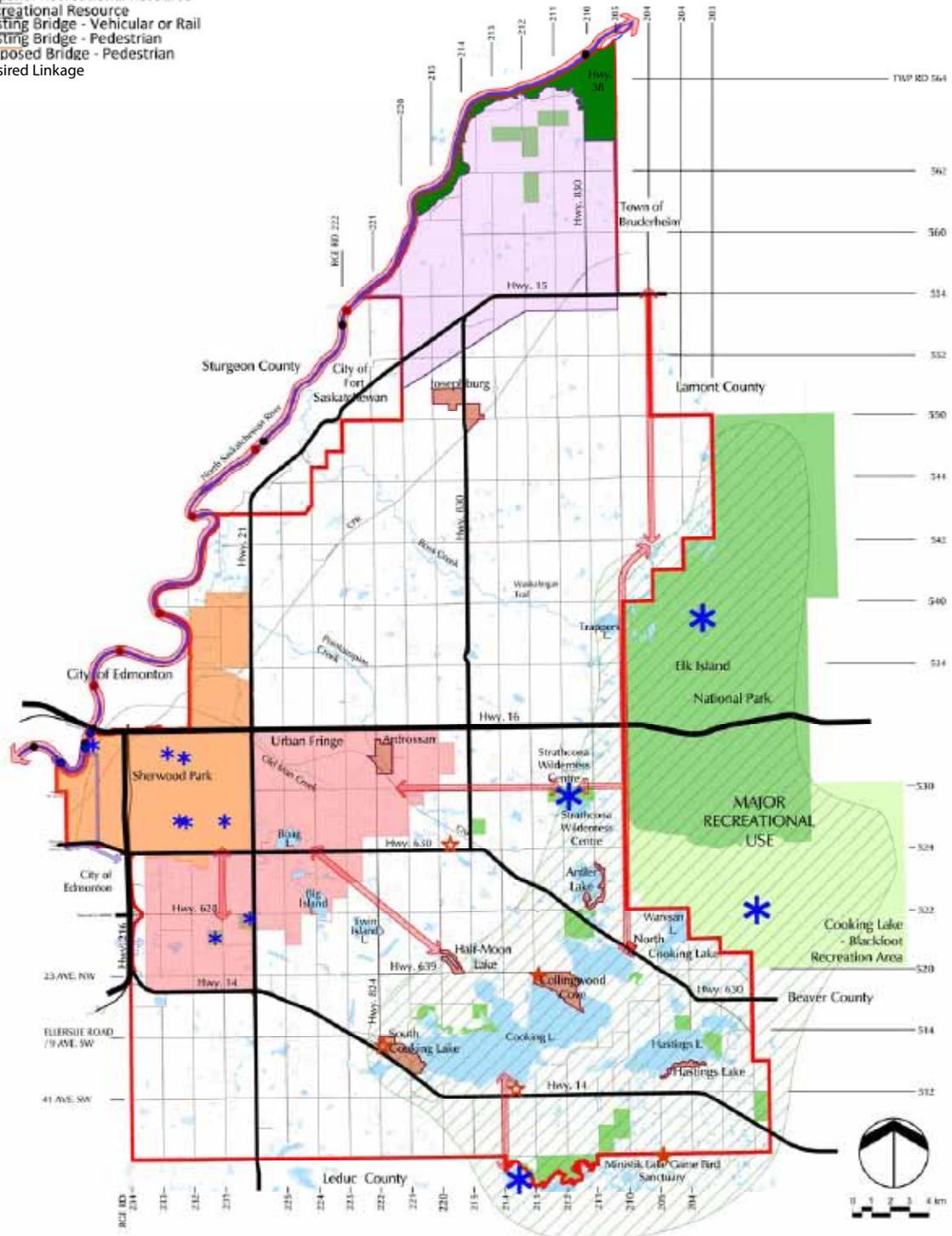
Trails System Concept, new and / or Enhanced Trails Connections

Trails through rural areas, if provided, will require significant investment in capital and maintenance due to the **geographic disparity** of rural residents and recreation destinations. Emergency services will face challenges both in locating and responding to, situations requiring fire, ambulance or police services on rural trails.

Some trail system components will involve **inter-jurisdictional coordination** and cooperation such as the staging area for Ministik Lake Game Bird Sanctuary, which is on Provincial land but accessed via County land. Access to rights-of-way and easements need to be negotiated with **private landowners** large and small, including CNR, CPR and issues of liability and maintenance responsibility need to be resolved if a rural trail system is desired.

trail system overview

The following guidelines are loosely based on the Alberta Recreation Corridor and Trails Classification System developed by the Government of Alberta (2009). These guidelines reflect the fact that most of the trails found within the County are multi-use, as opposed to single use and that existing and anticipated levels of trail use within the County requires a trail infrastructure suitable to accommodate both recreational traffic and active transportation needs.

Location

Considerations related to geographic location are of prime importance for trail classification. Trails in more densely occupied areas serve more people, are more frequently and easily maintained and are more "safe" due to higher levels of traffic. Expectations of trails in urban areas are different than in rural areas in terms of potential uses and maintenance. The primary geographic aspect for trail classification is an urban – rural continuum (Please refer to Strathcona County Structure in the Needs Assessment Summary section).

Intensive Urban (IU)

This area lies within the boundaries of Sherwood Park including the expansion into the Transition Urban Reserve Policy Area (Bylaw 1-2007) to the north. The development and maintenance of trails and related amenities in this area is considered a "high standard" approaching levels similar to roadways in terms of construction and maintenance. Trails within the Intensive Urban area serve a wide variety of users because of the high population density and would be most likely to serve both recreation and active transportation functions.
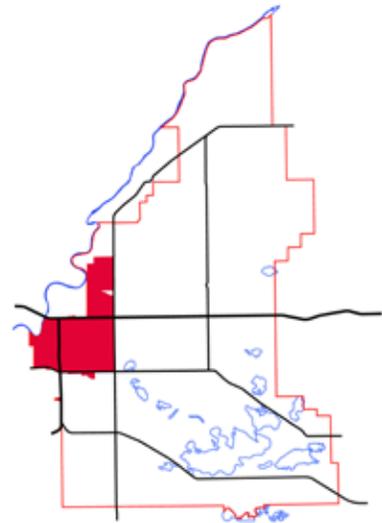
Urban Fringe (UF)

The Urban Fringe consists of urbanizing areas adjacent to Sherwood Park where significant residential development has occurred or is planned to occur in the form of concentrated rural residential subdivisions. As residents in the Urban Fringe areas desire more "urban" amenities, it is important to create internal trails within the new developments and link them with Sherwood Park. Currently, residents in the Urban Fringe are walking, jogging and biking to the Urban areas of the County via roadways. The provision of trail connections as an alternative to roadways would provide a much safer mode of transportation.
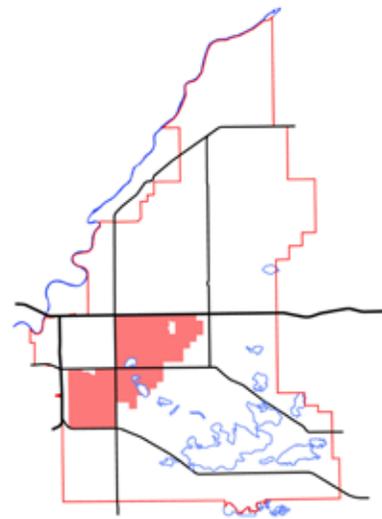
As part of the County's Country Residential Area Concept Plan, specific trail alignments have been identified. Please refer to the Country Residential Area Concept Plan Existing and Proposed Trails map in the appendix and the full concept plan report (under separate cover) for more information.

Trails infrastructure in this area must be developed and maintained for levels of use similar to that of the trails in the Intensive Urban areas of the County and should connect to the urban trail system where feasible. Observed levels of trail use in the Urban Fringe may be less than trails in the Intensive Urban Area due to lower population densities.

32

Trails in this area may also be used for both active transportation and recreation purposes.

Intensive Rural (IR)

The Intensive Rural area for trails planning includes the rural parts of the county that are most heavily utilized because of the proximity of recreational resources and population density (hamlets). These recreation resources include the Strathcona County Wilderness Centre and various lakes in the southeastern portion of the County as well as lands adjacent to Elk Island National Park, Cooking Lake – Blackfoot Provincial Recreation Area and Ministik Lake Game Bird Sanctuary.

This area also contains the county's eight rural hamlets (Ardrossan, Josephburg, South Cooking Lake, North Cooking Lake, Hastings Lake, Antler Lake, Callingwood Cove and Half Moon Lake) which, due to population density and proximity to water bodies, attract trail user interest. Trails and amenities in the Intensive Rural area should be provided to complement natural features and link to major recreational resources within and adjacent to the County. The type of trails and amenities should be appropriate to a rural / natural area setting rather than to an urban setting.

Staging areas with room for trailer parking would be needed for major trails offered in the Intensive Rural areas. It may be appropriate to have some specialized trails designed, especially for certain specific users such as equestrian and cross-country skiers. The level of maintenance of trails in the Intensive Rural area should be proportional to the level of use with the understanding that some trails will not be multiuse and that maintenance activity may be a function of both the County and / or trail user groups.

Trails in the Intensive Rural area will be utilized for active transportation and recreational and / or interpretive purposes.

33
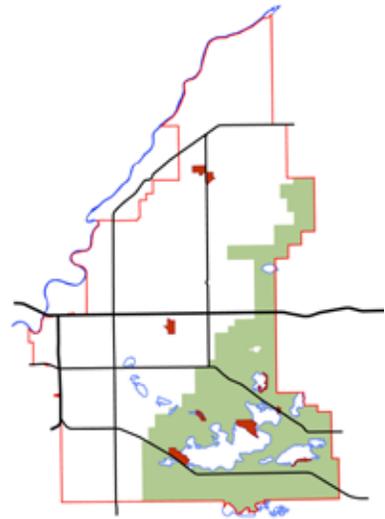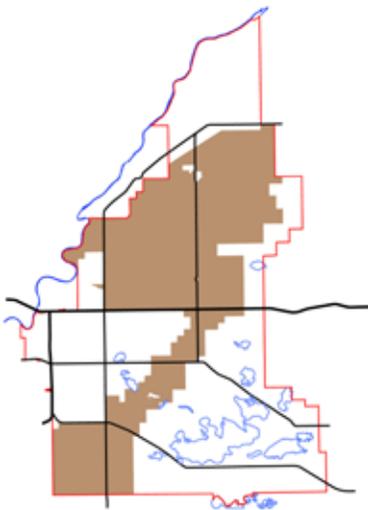
Dispersed Rural (DR)

Dispersed Rural areas are largely agricultural and industrial areas that have a very low population density and a low level of recreational or active transportation use. The only trails likely to be provided in this area would be regional trail linkages. Amenity requirements and the level of trail maintenance would be minimal in this area.

Trail Classification

Trails are categorized as Primary, Secondary and Tertiary due to their level of use in the four geographic areas: Intensive Urban, Urban Fringe, Intensive Rural and Dispersed Rural. More intensive expected use equates to a higher standard of trail construction and maintenance. Due to the dynamic nature (eg level of use and evolving geography) of the classification system it should be revisited periodically based on performance criteria (discussed in the Trails Effectiveness section).

Primary

Primary trails are the most important trails in the system and typically correspond to arterial roads in a vehicular circulation system. Primary trails serve both recreation and active transportation uses and may link population centres with significant recreational resources or other major destinations (eg bicycle commuting routes to Edmonton). They may also be components of regional trails such as the TransCanada Trail. They may fulfil a demand for recreational access to regionally significant assets such as the Capital Region River Valley.

Secondary

Secondary trails, corresponding to collector roads in a vehicular circulation system, form important connections to primary trails to residential and /or commercial areas. These trails provide access to, or through, natural areas of local significance and serve both recreation and active transportation uses.

Tertiary

Tertiary trails are considered to be similar to neighbourhood streets and may connect smaller population nodes to the broader trail system. Tertiary trails can also serve as linkages to create trail system loop circuits and provide interpretive opportunities.

Level of Trail Development

The following guidelines for trail construction include three levels of trail development. The varying levels of development would be based upon the three trail types (above) and the aforementioned trail locations throughout the County.

Developed

Developed trails are hard surface on prepared granular base. Hard surface would generally include asphalt although concrete or unit paving may be used for certain applications where appropriate. Slopes should be a maximum of 5% for universal access and could be as high as 10% in some areas. The width of the compacted base (also cleared and grubbed) should be 3.3 m and the paving 3.0 m wide. The cleared path of travel free of overhanging vegetation should be 4.0 m wide by 3.2 m high above ground (accommodating for an average snow depth of 20cm). These trails would also easily accommodate access by service and emergency vehicles and could also be eligible to be considered for Alberta Infrastructure funding.

Semi-Developed

Semi-developed trails have a smooth compacted surface (hard surface desirable but not required) on a prepared granular base, with slopes 15 to 20% maximum (5 to 10% preferred.) The cleared width should be 2.7 m with 3.4 m asphalt paving (if paved). The cleared path of travel should be 3.0 m wide by 3.5 m high and could accommodate two-way bike traffic.
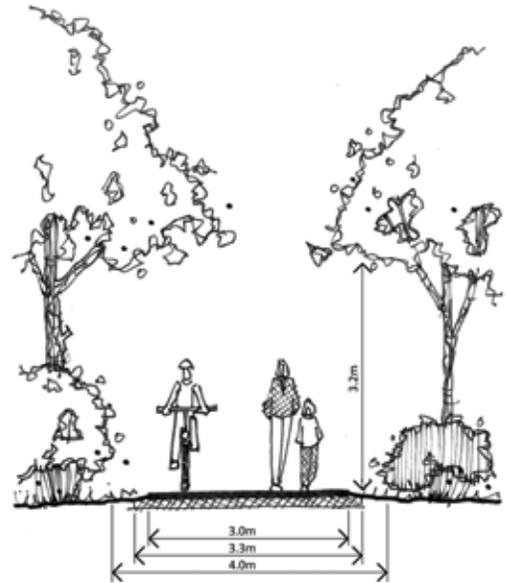
Developed Trail – Hard Surface

Semi-Developed Trail – Granular

Semi-Developed Trail – Hard Surface

36

Undeveloped

Undeveloped trails are either turf or bare earth and are 1.0 to 1.5 m wide with a cleared width of 2.0 m by 3.5 m high. Slopes could possibly be as steep as 30% in short segments, although a maximum of 10% should be targeted. These trails may include trails through environmental reserve areas and around storm water management facilities.

Paved Shoulder/Bike Lane

A Paved Shoulder / Bike Lane adjacent to roadways allows bicyclists (and sometimes hikers) to share the roadway with vehicular traffic. This is common in both urban and rural areas where there is insufficient land available.

Liability for shared roadways has to consider the volume and type of vehicular traffic as well as the width of the right-of-way and the type of surface. Safety hazards such as narrow shoulders adjacent to steep ditches, narrowed pavement at bridges or tunnels and hilly terrain where sight lines are poor should be red-flagged for special attention and given priority for improvements. When the level of potential conflict becomes too great, action will be required to construct separate trails or widen roadways for shared lanes. Bike lanes or separate trails should be considered in the design of any new roadways. Painted lines would be required to separate motorized and non-motorized uses.

The following table provides a summary of the proposed guidelines for the Strathcona County trail system comparing them the Alberta Recreation Trails Classification System. Strathcona County currently has one guideline related to trail development corresponding to the "Developed" classification.
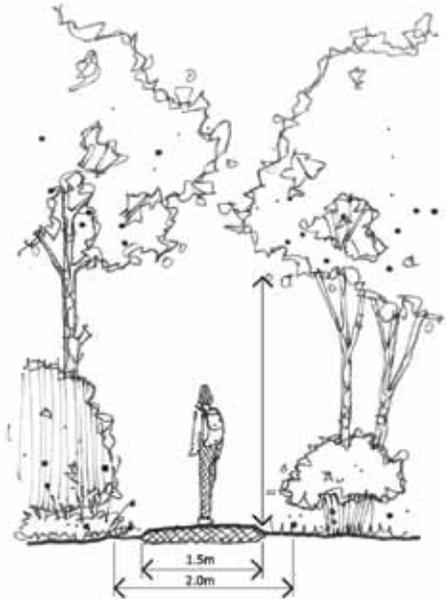
Undeveloped Trail
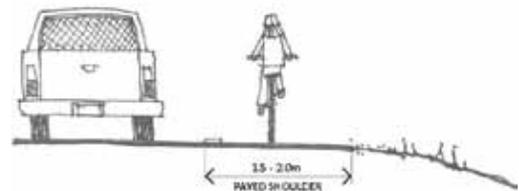
Paved Shoulder – Bike Lane

Existing County Roadway Examples

37

Guidelines for Trail Dimensions

Alberta Recreation Corridor & Trails Classification System

Type of Use	Developed				Semi-Developed				Undeveloped			
	Width	Cleared distance		Max.	Width	Cleared distance		Max.	Width	Cleared distance		Max.
		Width	Ht.	Slope		Width	Ht.	Slope		Width	Ht.	Slope
Walk/Hike/Run	2.5	3.5	3	5%	1 - 2	2 - 3	3	20%	0.3	1	2.5	45%
Bicycle	2.5	3.5	3	10%	1 - 2	2 - 3	3	15%	0.2	1	2.5	30%
In-line Skate/ Skateboard	2	3	3	5%	1 - 2	2 - 3	3	10%	NA	NA	NA	NA
Equestrian Use	3	4	3.5	10%	1 - 3	2 - 4	3.5	15%	0.5 - 2	1.5 - 3	3.5	30%
Cross-country Ski	-	4	3.2*	10%	-	2 - 4	3.2*	20%	-	1 - 2	3.2*	30%
Snowshoe	-	2.5	3.2*	10%	-	1.5 - 2.5	3.2*	20%	-	0.75 -1.5	2.7*	30%
ATV	3	4	3.5	10%	2 - 3	3 - 4	3.5	20%	1.5 - 2.5	2.5 - 3.5	3.5	30%
Snowmobile	-	5	5.2*	15%	-	5	5.2*	20%	-	2 - 3*	3.7*	45%

Proposed Strathcona County Trails System

Type of Use	Developed				Semi-Developed				Undeveloped			
All Trails	3.0	4	3.2*	5 - 10%	2.7**	3	3.5*	15- 20%	1 – 1.5	2	3.5*	30%

** On paved trails the width of the paving is 0.3 m less than the granular base width shown.

*Cleared height assumes average snow depth of 20 cm

Definitions

Clearing Width: The dimension measured across the trail from which all vegetation, rocks or other obstructions are removed so as not to obstruct movement along the trail.

Clearing Height: The vertical dimension which must be cleared of all branches that would otherwise obstruct movement along the trail.

Tread Width: The horizontal dimension across the trail which provides adequate space for comfortable and safe movement.

Tread: The travelled portion of the trail right of way typically sloped or crowned to shed water.

Drainage: Provision of methods to manage excessive water runoff (ditch, dip, culvert, French drain, etc.)

Clearing Limits: Point at which the disturbance to the natural environment is limited; defines the trail right-of-way.

Type of Use

Trails within Strathcona County can most commonly be categorized as multi-use. That being said, different trail-based activities have different requirements including trail surface, width, location and maintenance / grooming. The following trail based activities / uses should be considered in the future of the County's trail system. Where applicable, pertinent stakeholder consultation findings are presented in the shaded areas.

Universal Access

Trails in urban areas should be universally accessible for people with wheelchairs, scooters and walkers. Accessible trails need a firm, preferably paved, surface with grades to 8.3% for a maximum of 61.0 m, 10% for a maximum of 9.14 and 12.5% for a maximum of 3.0 m. Where these grades cannot be achieved, level or gently sloping rest areas should be provided at intervals of 122m (easy), 275m (moderate) or 365m (difficult.) Cross slopes should be 3% or less, for paved trails and 5% for granular trails. It is important to remember that trail amenities should also be accessible.

Walking/Hiking/Running

Walking, dog walking, hiking and jogging / running are the most popular forms of trail-based recreation and can occur on virtually any kind of trail in any location during any season. Hiking implies a more natural setting with varying terrain. Joggers / runners usually favour firm surfaces (paved or granular) that are free of obstacles.

Stakeholder input:

- 79% of household survey respondents who use the trail system use it for walking
  - 17% for running/jogging
  - 15% for dog walking

Bicycling

Bicycling includes both recreation and active transportation purposes. Bicycling can occur on granular or hard surface trails and can even occur on roadways (preferably where bike lanes are introduced). Currently the County has a 30km/hr speed limit for bicycle use on trails.

39

In Intensive Urban areas it is preferable to designate bike lanes on trails with signs and painted lines, to reduce conflicts with pedestrians and other users. In very crowded pedestrian oriented areas, sidewalks and where trails intersect vehicular roadways, cyclists should be required to dismount.

Stakeholder input:

- 50% of household survey respondents who use the trail system use it for bicycling

In-Line Skating/Skate Boarding / Roller-Skiing

Small-wheeled recreation is only possible on paved surfaces in urban areas where they may share designated lanes with bicyclists.

Equestrian Activities

Horseback riding is possible and desirable in rural areas. Conflicts with other users, especially bicyclists and dog walkers, are likely for shared trails and thus the activity should be directed to specific, dedicated areas. These trails can be steep and narrow and should be unpaved. Access to staging areas with adequate space for parking stock trailers is important for equestrian based trails.

Snowshoeing

Snowshoeing could occur on any trail used for walking / hiking / running and may, or may not, require snow clearing.

40

Cross–Country Skiing

Trails to accommodate cross country skiing should be designed to offer an enjoyable skiing experience while avoiding hazards such as sharp corners and trees. Lines-of-sight are also important, as is the flow of the trail. High-use cross country ski trails should have a trail clearing width of 5.0 to 7.0 metres to accommodate classic and skate ski techniques and two way skiing. This will also allow grooming equipment (Pisten Bully)to safely and effectively access and maintain the trails. Due to the nature of the trails requiring a high frequency of grooming, and with high-use, trails should be solely dedicated for cross country ski use in the winter where possible.

Motorized Off Highway Vehicle Trail Use (If Desired)

According to the Albert Off Highway Vehicle Act, "off highway vehicle" means any motorized vehicle designated for cross-country travel on land, water, snow, ice, marsh or swamp land or on other natural terrain (not including motor boats), Off highway vehicles include:

- 4-wheel drive or low pressure tire vehicles
- motor cycles and related 2-wheel vehicles
- amphibious machines
- all terrain vehicles
- miniature motor vehicles
- snow vehicles
- mini-bikes
- any other means of transportation that is propelled by any power other than muscular power or wind

The use of off highway vehicles as defined above, as well as electric scooters, pocket-bikes, golf carts, motorized skateboards, go-carts and Segways, is currently prohibited in the County on County owned lands but is allowed on Crown lands and water bodies within County boundaries. If the use of off highway vehicles is permitted in the future, to any degree, trail design must accommodate such use.
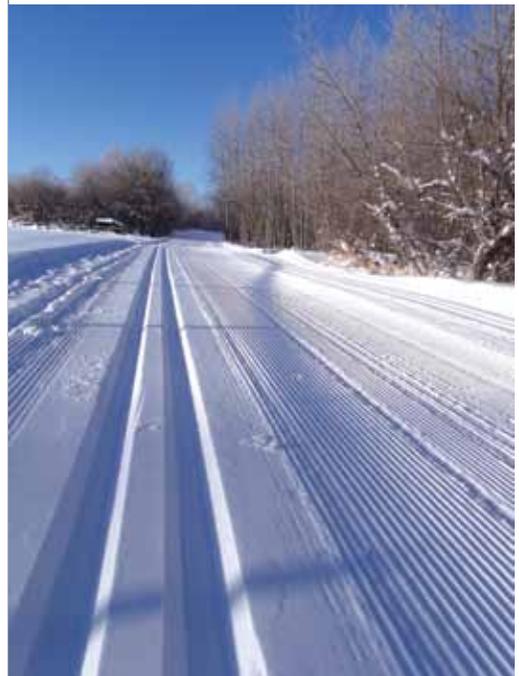
Stakeholder Input:

- 60% of household survey respondents consider the use of Segways appropriate on the existing trails system

- 18% of household survey respondents consider the use of golf carts appropriate on the existing trails system

- 46% of household survey respondents believe that off highway vehicles should not be allowed on County owned lands while 46% believed the activity should be allowed with some restrictions and 7% felt it should be allowed in a general sense

- of the household survey respondents, the variation of responses between rural and urban responses to the off highway vehicles questions were not notable

- more specifically in regards to snowmobile use (as a subset of off highway vehicles), 34% of household survey respondents believe that snowmobiles should not be allowed on County owned lands while 56% believed the activity should be allowed with some restrictions and 9% felt it should be allowed in a general sense

- 46% of group survey respondents believe that off highway vehicles should be allowed in general on County owned lands, 12% felt that the activity should not be allowed on County owned lands and 42% believed the activity should be allowed with some restrictions

- more specifically in regards to snowmobile use (as a subset of off highway vehicles), 54% of group survey respondents believe that snowmobiles should be allowed in general on County owned lands, 8% felt that the activity should not be allowed on County owned lands and 38% believed the activity should be allowed with some restrictions

amenities

Trail Amenities

Signage

Signage is the most common amenity found on County trails. Signage could include:

- Directional / locational signs indicating destinations and trail names
- Informational signs designating types of uses, skill level and permitted activities
- Warning signs for hazards, private property or environmentally sensitive areas
- Location signs such as kilometre posts (perhaps at 100 m intervals) and/or "distance to" signs along the trail to mark progress along the trail and provide coordinates for emergency situations and maintenance/policing activities
  *All trails should also be named or have number and/or letter designations for orientation and way-finding. GPS coordinates could also be used in providing way-finding and location
- Interpretive signs for natural/cultural/historical points of interest
  *Signage standards can be found in Strathcona County's Open Space Design Standards (http://www.strathcona.ab.ca/departments/Engineering_and_Environmental_Planning/open-space-development-standar.aspx)

Constructed Edges/Drainage Works

Controlling the flow of runoff is critical to preserving trail integrity, reducing maintenance requirements and minimizing environmental impact. Drainage control can include waterbars (preferably of flexible rubber for universal access), ditches, drainage dips, slopes reinforced with rip-rap, geo-textiles and / or retaining walls.

Root Barriers

Root barriers installed on trail edges in the vicinity of trees (especially poplar and aspen) help preserve the integrity of the trail surface and therefore reduce required maintenance (root intrusions) and liability exposure.

Bridges/Culverts/Boardwalks/Stepping Stones

Providing trail access over creeks or wet areas can greatly extend the season of use for a trail and also reduce environmental impacts.

Steps/Guard Rails/Handrails

Handrails should be provided at hazardous locations, where universal access is needed or where maximum desirable slopes must be exceeded. Railings should be 1065 mm high and free of protrusions.

Benches/Canopies/Overlooks

Benches can be provided at standard intervals or as needed dictated by the trail type, terrain and the level of use. Benches are useful especially for developed and semi-developed trails at trailheads and rest areas within a trail loop. Canopies can protect signage as provide temporary shelter for trail users. Scenic overlooks or viewing platforms (with or without railings) can protect sensitive environmental features and/or enhance safety at hazardous locations such as escarpments.

Lighting

Lighting of trails permits extended day time use of trails but has significant capital and operating costs and thus should only be included where feasible and where required due to safety concerns. Lighting also expands four season use of the trail system

Trailhead Amenities

Trailheads are important elements within the County's trail system as they provide access to the trail system. The following considerations are important in planning and maintaining trailheads.

44

Parking

Parking (including bike racks) is a primary element to a properly planned trailhead. The more use a trail achieves, especially in rural areas, the more parking required. Rural trail users, such as equestrian users, require parking areas large enough to accommodate stock trailers and trucks.

Toilets and Water

Washrooms at trailheads are important to improving trail user experiences. Facilities with water are preferred, but have high construction and maintenance costs and need to be heated in winter. In rural areas, washroom facilities are likely to be feasible only at high-use, supervised sites like the Strathcona Wilderness Centre. Water for horses is also a desired amenity where feasible.

Refuse/Recycling Containers

In urban areas refuse and recycling containers (for bottles and cans) must be provided. As an alternative to being provided at set intervals, refuse containers can be placed as needed, determined by the trail type, location and level of use. In rural areas there is a much higher maintenance burden in emptying isolated containers, which may also attract animals. Containers should be provided at the most heavily utilized staging areas and should accompany benches where possible.

Gates and Bollards

Gates, or removable bollards, should be used to keep vehicles (other than maintenance and emergency vehicles) off the trails. They should, however, not prevent access by wheelchairs (915 mm width), bicycles, walkers, bikes with trailers, or strollers.

Signage

Signage specific to trailheads should include trail information (trail length and level difficulty) as well as a map of the trail / area to familiarize users and emergency contact numbers.

maintenance

Maintenance is critical to the success of a trail system. Diligent maintenance preserves capital investment, minimizes liability exposure and allows for an enjoyable user experience. The amount of maintenance required can be reduced by proper trail design (including careful alignment to control rainwater runoff and erosion).

Type of Maintenance

The type of trail maintenance differs based on the type of trail, geographic area and season of use. Maintenance during the spring, summer and fall is significantly different than maintenance requirements during the winter.

Spring, summer and fall maintenance includes mowing turf and weeds, collection of material from refuse and recycling containers, picking up litter and repairing of trail surfaces including washouts and slope management. Safety issues such as major washouts, tripping hazards, fallen trees and broken, overhanging branches, should be dealt with (but are not currently adequately budgeted for).

Winter maintenance includes snow removal from walking and cycling trails, especially those used for active transportation. Preparing trails for winter use by removing windfall and mowing tall grass/weeds enhances the trails for skiing and snowshoeing.

As per the Winter Maintenance Policy in the Strathcona County Municipal Policy Handbook for the Urban Service Area, "Priority 2 roadways (arterial roads) will be plowed within 12 hours following a 5 to 7 cm snow accumulation and following completion of the most recent Priority 1 (major arterial roadways, major industrial roadways and transit drop zones) clearing; and school drop-off zones plowed within 72 hours of a 5 to 7 cm snow accumulation."

Sidewalks & Trails – hard surfaced: "Sidewalk plowing will commence immediately after Priority 2 Urban Service Area roads are cleared and will progress from sidewalks adjacent to major thoroughfares to public lands, schools and recreation sites. Clearing will normally be completed within eight (8) days." This precedes clearing of Priority 3 (collector roadways and public transit routes) and Priority 4 (local residential roadways.)

46

According to Strathcona County Transportation and Agriculture Services' website, "the trails in Sherwood Park are cleared after Priority 2 streets and school drop-off zones." There is no policy for clearing rural trails.

Prudent trail design and construction can reduce maintenance requirements. A properly prepared base, root barriers or geo-textile (where appropriate) and effective handling of drainage will result in a reduced need for trail surface repairs.

Level of Maintenance

The level of maintenance on County trails varies based on the location, classification and level of use for trails within the system. Generally speaking, trail maintenance includes the following:

- Checking for structural integrity of trail features, such as bridges, steps and railings and repairing any damage;
- Keeping the tread surface free of obstacles or hazards, such as downed trees or limbs, roots, landslides and loose rock;
- Maintaining drainage by clearing drainage channels, ditches and culverts, maintaining the outslope of the trail bed, cleaning drainage dips and water bars;
- Cutting vegetation from the cleared passageway; and
- Maintaining the trail surface including; restoring sloped or crowned surfaces to facilitate drainage, restoring the trail width to original design; filling cracks, ruts, holes and depressions; restoring raised approaches to bridges; and, re-compacting loose surfaces

High

The highest level of maintenance would be delivered on the most heavily utilized primary and secondary trails in Intensive Urban areas, the Urban Fringe, and select portions of the intensive Rural Area. Winter snow removal would be included.

Medium

Medium level maintenance is appropriate for trails achieving lower utilization in urban or urbanizing areas and the most heavily utilized trails in rural areas. Snow removal would be limited.

Low

The lowest level of maintenance includes weed control and removal of safety hazards such as fallen trees and broken, overhanging branches. There would be no snow removal.

Minimal

The least used trails in rural areas would have minimal maintenance.

trails system summary matrix

The Trails System Summary Matrix on the following page summarizes different categorization and associated design and maintenance targets for trails management in the County. This matrix is a general guideline only and certain trails developed primarily for specific / dedicated uses may have special requirements.

Trails Matrix

Urban ← → Rural

Location/Level of Use	Intensive Urban within Sherwood Park	Urban Fringe Urbanizing areas adjacent to Sherwood Park	Intensive Rural Heavily utilized recreation areas, major trail corridors and hamlets	Dispersed Rural Lightly used areas with regional trails passing through & minor connections
Trail Classifications	(General guidelines only – special trails with high levels of use may have different specifications.)			
Primary	**Developed:** Smooth paved surface on prepared base, 3m wide (paved) with 3.3m base, 4m cleared width x 3.2m height*, slopes 5–10% max			
Secondary		**Semi-Developed:** Smooth compacted surface (2.4m if paved) on a prepared base, 2.7m wide, cleared width 3m x3.5m height* (can be upgraded at a later date), slopes 15-20% max		
Tertiary			**Undeveloped:** Un-surfaced soil, turf, 1–1.5m wide, cleared width 1.5–2.0m x 3.5m height*, slopes 30% max	

* Cleared height above ground–assumes 20 cm average snow depth

Amenities				
Primary	Pedestrian bridges/culverts (if needed), refuse/recycling containers		Ped. bridges/ culverts (if needed), boardwalks, trailhead parking & toilets, signage r/r containers	Ped. bridges/culverts (if needed), signage
Secondary	Signage	Signage		Signage
Tertiary				

Maintenance: Spring/Summer/Fall	Collect refuse/recycling/litter, repair or service trail surfaces and amenities, mow turf and weeds.			
Primary	High	High	Medium	Low
Secondary	High	Medium	Low	Low
Tertiary	Medium	Low	Low	Minimal
Winter	Collect refuse/recycling, snow removal, emergency repair for amenities.			
Primary	High	Medium	Medium	Low
Secondary	Medium	Low	Low	Minimal
Tertiary	Low	Low	Minimal	Minimal

Type of Use				
Walk/Hike/Run	•	•	•	•
Bicycle:				
-on road w/ signs only	•	•	•	•
-on road w/ bike lanes	•	•	•	•
-trail touring	•	•	•	•
-mountain biking		(specified areas)	(specified areas)	•
In-line Skate and Skateboard	•	•	•	
Equestrian Use			(specified areas)	•
Cross Country Ski/ Snowshoe	(specified areas)	(specified areas)	•	•
Active Transportation	•	•	•	

future trails project prioritization

Although there is no formal list of projects resulting from this Trails Strategy, the following prioritization matrix is meant to help decision makers choose where funding dedicated to trails development is best allocated.

prioritization matrix

Strathcona County has a myriad of investment requirements beyond recreation and trails, which in many cases take precedent over recreation and trail projects. Therefore, when funding is made available to recreation and more specifically trails, a decision making tool to assess project priority is important to ensuring optimal use of "trail" funding.

The following prioritization system for assessing trail based projects in the context of limited funds will help County decision makers in contemplating priority projects (now and in the future). Where available, pertinent stakeholder input is provided in shaded boxes.

Prioritization Criteria

Criteria for assessing and prioritizing trail based projects include:

- **Internal connectivity**

    Linkages to established networks and existing resources within the County

    Stakeholder Input:

    • 91% of household survey respondents felt that connectivity should be important (moderate or high) in future trail project prioritization

- **Improved safety**

    Improving safety on existing trail system and / or avoiding safety concerns where trails do not exist

Stakeholder Input:

- 88% of household survey respondents felt that improved safety should be important (moderate or high) in future trail project prioritization

- **Promoting active transportation**

  Creating linkages in areas where active transportation opportunities are enhanced

- Land ownership (County owned)
  If proposed project does not occur on County lands, securing land can be costly and difficult

Stakeholder Input:

- 85% of household survey respondents felt that land ownership should be important (moderate or high) in future trail project prioritization

- **Partnership opportunities**

  Partnerships with groups or external organizations in raising construction capital and / or ongoing stewardship

Stakeholder Input:

- 93% of household survey respondents felt that potential partnerships should be important (moderate or high) in future trail project prioritization

- **Cost based (capital and operating)**

  Costs of trail development must be assessed in relation to other projects

Stakeholder Input:

- 95% of household survey respondents felt that costs should be important (moderate or high) in future trail project prioritization

- **Introduction of new trail activities**

  Provision of trail activities / types that do not currently exist in the County

  Stakeholder Input:

  - 78% of household survey respondents felt that introducing new activities should be important (moderate or high) in future trail project prioritization

- **Balance of activity throughout County**

  Ensuring that all residents have access to trails, including a rural / urban balance

  Stakeholder Input:

  - 94% of household survey respondents felt that ensuring access for all should be important (moderate or high) in future trail project prioritization

- **Majority impact**

  Ensuring multi-use of system and impacting the most residents possible with investment

  Stakeholder Input:

  - 91% of household survey respondents felt that ensuring multiple uses should be important (moderate or high) in future trail project prioritization

- **Environmental impact**

  Ensuring that design minimizes environmental impact and promoting linkages where environmental disruption can be avoided

- **External connectivity**

  Ensuring that connection between County residents and resources can be achieved with external resources

- **Avoidance of conflict**

  Ensuring minimal impact on non-trail users and designing trails to avoid conflicts between users and landowners as well as different types of trail users

Criteria Weighting

The aforementioned criteria have been labelled either "very" or "somewhat important" through the needs assessment process. Those criteria labelled "very important" will be assigned an overall weighting of 10 points whereas those listed as "somewhat important" will be assigned an overall weighting of 5 points. Further to the overall weighting given to each category, the following chart outlines variables / question for each criteria ultimately leading to a score for each potential project.

The implementation of the system is dependent upon having a trusted, multi-faceted team assess projects using the following criteria (such as the project steering committee for this Trails Strategy). Once the team has assessed all projects on an independent basis, results would be compiled and a ranking will be apparent.

All the questions should be answered "yes" or "no" with all questions answered "yes" achieving full point allotments as outlined and all question answered "no" achieving zero points.

It is imperative that all projects listed in the current project roster (dynamic over time) are presented in a way that all criteria can be assessed (complete information must exist for all potential projects).

Criteria	Total Score	Scoring Metrics
Internal connectivity	x/10	Will the project enable linkage, through new development or enhancement of existing trails, to existing trail loops or major County resources? (5 points) Are linkages created where no other are available? (5 points)
Improved safety	x/10	Will the project decrease the number of safety incidents reported at the project site? (5 points) Will the project decrease the number of safety incidents at other sites throughout the trail system? (5 points)
Land ownership (County owned)	x/10	Is the project site owned by the County? (10 points)
Partnership opportunities	x/10	Do partnership opportunities exist for capital development? (5 points) Do partnerships opportunities exist for ongoing operations and maintenance? (5 points)
Cost based (capital and operating)	x/10	Of the current list of potential projects, is the expected capital cost lower than the average project value? (5 points) Of the current list of potential projects, are the expected operational costs lower than, or equal to existing investment guidelines? (5 points)
Promoting active transportation	x/10	Will the project enhance existing active transportation routes? (5 points) Will the project provide new active transportation routes? (5 points)
Introduction of new trail activities	x/5	Does the proposed project provide for a new recreational or active transportation pursuit (not already offered in the County)? (5 points)
Balance of activity throughout County	x/5	Given the current inventory of rural and urban trails in the County, does the project promote equitable provision levels between the two (based on per capita provision ratios)? (2.5 points) Given the current inventory of existing trails and associated uses accommodated in the County, does the project promote balance between trail system uses? (2.5 points)
Majority impact	x/5	In relation to the current list of potential projects, does the project impact more residents than the median expected resident impact? (5 points)
Environmental impact	x/5	Does the project avoid disruption of the natural environment? (5 points)
External connectivity	x/5	Does the project allow for resident access of regional (external to the County) resources? (5 points)
Avoidance of conflict	x/5	Does the project incorporate all feasible measures to avoid landowner-user conflicts? (2.5 points) Does the project incorporate all feasible measures to avoid user-user conflicts? (2.5 points)

trails effectiveness

Measuring trails effectiveness can be accomplished by assessing trail provision through the following performance criteria and conflict mitigation strategies.

performance criteria

Measuring the performance of effectiveness of the County trails system is important in understanding the importance of trails in the municipality, ensuring opportunity for continual improvement and in justifying future investment. Through the needs assessment process a number of performance measurement criteria were identified:

Where available, relevent stakeholder input is presented.

Criteria	Scoring	Discussion
Trails inventory	Total km of trails per capita	A thorough, accurate, and ongoing trails inventory is important for benchmarking progress in overall trail development and in comparing trail provision in the County to other municipalities.
		An accurate inventory and associated mapping will also be important elements to communicating with residents and visitors about trail based recreation and active transportation opportunities.
User counts	Total users per capita	Number of users will be key in demonstrating overall trail use and understanding "pressure points" throughout the system.
		Total users can be measured through trail count systems which would provide useful information about overall use and trail system "pressure points".
		Stakeholder Input:
		• 46% of group survey respondents felt that user counts (number of users) is an important consideration in assessing trails effectiveness

Criteria	Scoring	Discussion
Safety	Total incidents reported Total incidents requiring formal response	The number of incidents that are reported by residents to County staff should be tracked and benchmarked chronologically. The number of incidents requiring formal response by police and/or emergency services will identify serious safety concerns on the trails system. Stakeholder Input: • 56% of group survey respondents felt that the number of reported safety incidents is an important consideration in assessing trails effectiveness.
Physical state	Maintenance guidelines	The consistency of footing and associated deterioration of surfacing should be tracked and measured through maintenance guidelines (as is already the case). Spot inspections and a 3 yr inventory and surface condition assessment program facilitated by County staff or users would allow for implementation. Stakeholder Input: • 46% of group survey respondents felt that consistency of trails surface is an important consideration in assessing trails effectiveness while 36% stated that the aesthetics of the trails system is an important determinant of effectiveness
Satisfaction surveys	Web and/or intercept surveys	Feedback from users should be tracked on an annual basis through web surveys and/or intercept surveys conducted by County staff. Potential assessment criteria would include satisfaction with the quality and quantity of trails, as well as overall trail use experience. Origin of users could be measured through user engagement to gauge non-local spending / economic impacts of trail provision. Feedback from non-users could be collected as opportunities to "piggy back" larger consultation programs are made available. Stakeholder Input: • 65% of group survey respondents felt that user satisfaction is an important consideration in assessing trails effectiveness • 26% of group survey respondents felt that user origin (residency: local or non-local) is an important consideration in assessing trails effectiveness

Performance Measurement Implementation

In order to implement performance measurement for trails, resources including increased staff would be required to set up surveys, manage inventory, visit sites and collect data. Some of this is already occurring since inventory is currently being completed by County departments. As well, Recreation Parks and Culture are currently acting as a point of contact in the case of user dissatisfaction or safety concerns. **However, a single source for "trails performance measurement" should be designated in the County.** Once resources are secured and staff is put in place, annual (at a minimum) data collection should occur in the areas outlined above with associated reporting outlining chronological progress and trending.

conflict mitigation

Trail user and landowner conflicts exist on the County trails system today. As use increases and the size and/or scope of the trail system expands, the opportunity for conflict to occur will only increase. That being said, there are a number of conflict mitigation strategies that have been identified throughout this process. It is important to note that although these strategies will not eliminate conflicts throughout the trail system, it is very possible that they will minimize existing and future occurrences.

Common Themes

There are some common themes identified for both user vs user and user vs landowner conflicts. The most commonly mentioned strategy for mitigating trail conflicts deals with education. Educating all stakeholders (users of trails, adjacent landowners, service / program delivery agents, internal County administrators) on trail regulations, etiquette and proper trail use would lead to reduced conflict on the trail system.

As the nature of trails use is primarily spontaneous and independent, there is limited opportunity for trail supervision or monitoring by County staff. That being said, the rules and regulations for trail use must be commonly understood by all trail users and thus must be communicated through signage, wide reaching promotion and targeted literature distributed through common channels directed at trail users. For instance, targeted literature could be distributed at local retailers selling trail equipment (bikes, shoes, etc.), at trail heads and at recreation centres.

Reaching trail users and stakeholders with key messages is very important in reducing conflicts but is highly dependent on the appropriateness and effectiveness of the key messaging itself. Therefore the key messaging needs to be developed with an understanding of the issues on the trail system from a variety of different perspectives. For this reason, the development of the key messages as well as the strategies for delivering them should be formulated by a group of multi-disciplinary trails experts.

Key messaging should include, at a minimum, an outline of the following:

• trail mapping / inventory (updated annually);

• trail user statistics (where available);

• trail user etiquette / regulations for each trail classification and for specific sites (if applicable);

• trail user respect of adjacent private landowners;

• the benefits of trails (both recreation and active transportation uses);

• trail user interaction practices (bikes and walkers, bikes and cars, etc...); and

• trail user stewardship (distributed authority or reporting).

58

Trails Communication Strategy

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┌──────────────┐      ┌──────────────┐                    ┌──────────────┐
│    Trails    │ ───> │     Key      │ ───>  ┌──────────>  │ Trail Signage│  <───┐
│ Stakeholders │      │  Messaging   │       │             └──────────────┘      │
└──────────────┘      └──────────────┘       │                                  │    ┌──────────────────┐
                                             │             ┌──────────────┐     │    │   Trail Users,   │
                                             │────────────>│ Wide reaching│ ────────>│ General Public,  │
                                             │             │  Promotions  │     │    │ Landowners and   │
                                             │             └──────────────┘     │    │  Stakeholders    │
                                             │             ┌──────────────┐     │    └──────────────────┘
                                             └────────────>│   Targeted   │  <──┘
                                                           │  Literature  │
                                                           └──────────────┘
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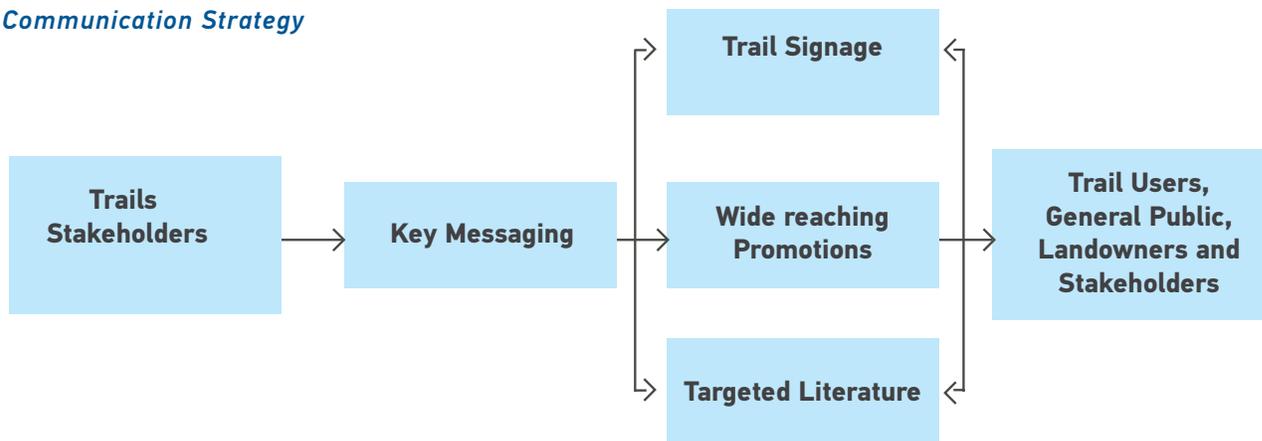
Specific to Landowner/User and User/User

Conflict mitigation more specific to observed trails issues between landowners and trails users includes the following:

- planning and designing buffers (space, trees and topography, structures) as part of development requirements for trail provision (in new areas) and enhancements strategies (in existing areas) for privacy and security; and

- educating prospective landowners, prior to purchase, of the dynamics associated with land ownership adjacent trails. This could include developing an awareness package, in conjunction with the development industry, outlining the benefits (land value, accessibility) and costs (potential lack of privacy) and distribution to prospective land owners prior to purchase.

Conflict mitigation more specific to observed trails issues between trail users includes the following:

- signage (site specific) and education (trails communications) regarding trails etiquette should continue to be offered throughout the trail system as well as targeted distribution points (as identified by trail advisors). Trail user stewardship and education will ultimately lead to self-policing which will complement existing policing measures (perhaps with distributed authoritative power or more likely through a simplified reporting process) as supervision and monitoring of the trail system is not feasible;

- planning and designing trails for multi-use including trail widths to allow for multi-use, line painting, surfacing conducive to permitted uses only and grading conducive to permitted uses only; and

- controlling trail use by type may be necessary as some activities cannot occur simultaneously. For example, trails usage could be controlled by allowing certain activities during certain seasons only, with a minimum acceptable snow depth of 15 to 30 cm and / or during specified times throughout the day.

off-highway vehicle strategy

current context

The current Strathcona County bylaw dealing with off-highway vehicle (OHV) use is Bylaw 13-2011. This bylaw defines off highway vehicle use as "any motorized mode of transportation built for cross-country travel on land, water, snow, ice or marsh or swamp or on other natural terrain." (page 7)   The bylaw states that off highway vehicle use may be allowed on County lands through a application process and under certain guidelines and regulations (schedule E, page 40). Use of OHV's beyond these instances of permitted use through approved application is pursuant to the Off-Highway Vehicle Act (Province of Alberta 1980). As the Act does not allow public use of OHV vehicles on municipal lands, **the activity is not permitted on lands owned by the County.**

In 2011 residents of and visitors to the County can ride off-highway vehicles on crown lands located throughout the County (as the activity is permitted by the Province of Alberta on crown lands and governed by Off-Highway Vehicle Act) and on water bodies throughout the County (regulated by the federal government).

Currently, the County receives complaints about OHV on County lands, on crown lands and on private lands (trespassing) despite disallowing the activity and trying to eliminate the activity in the County. Public funds are expended to police OHV use and convictions (and associated fines) occur.

In order to compare current policy in Strathcona County within the context of the broader region, the OHV policies of other rural municipalities in proximity to the County were reviewed. Of the other municipalities reviewed (Beaver County, Sturgeon County, Leduc County, Parkland County) all allow the activity to occur on County owned lands pursuant to a number of regulations. Anecdotally, these other municipalities still report issues between landowners and OHV users as well as issues between OHV users and other trails users.

There are other jurisdictions in Canada, such as the Province of Ontario, where Off Highway Vehicles use is more widely accepted (in the case of Ontario, OHV do not include snowmobiles and there is separate legislation for each). It was mentioned by a number of stakeholders throughout the planning process that this widespread acceptance will ultimately occur in Alberta however the evolution of the activity is dependent upon leadership by the Province as well as more widespread buy-in from the general public accepting the recreational activity as a public good.

options

Moving forward, the County has three options:

1. To allow OHV activity to occur on County owned land, in general[1].

2. To allow OHV activity to occur with regulations regarding seasonal use, OHV type and / or a specific strategic locations throughout the County.

3. To continue to disallow OHV activity to occur on County owned lands.

Each of the above noted strategies would have implications and, with the exception of the third option, would require collaborative planning with OHV stakeholders, private landowners, other trail users and key stakeholders. The following chart outlines potential County courses of action and associated costs and benefits.

It is recommended that the County pursue **Option#2**, allowing OHV use on County lands in restricted areas during specific times of the year. The County should work with landowners and potential OHV users in establishing strategically located corridors, and allow OHV use through these corridors. This approach would primarily allow OHV users to travel throughout the County to other trails and areas in the region.

1 As is the case in other municipalities reviewed

Potential OHV Strategies

** Recommended Approach*

Allow OHV activity to occur (In general)	Allow OHV activity to occur (With restrictions)	Disallow OHV activity to occur
Benefits: • Allowing another recreation activity to occur • Lower dissatisfaction among residents who participate in OHV activity • Potential for economic development associated with the activity to occur • Potential activity for rural trail system • Potential partnerships in delivery	**Benefits:** • Allowing another recreation activity to occur • Lower dissatisfaction among residents who participate in OHV activity • Potential for economic development associated with the activity to occur • Potential activity for rural trail system • Potential partnerships in delivery	**Benefits:** • Highest possible satisfaction amongst private land owners and opponents of OHV use • Avoidance of infrastructure costs related to activity (planning, land acquisitions, construction and maintenance) *If applicable
Challenges: • Higher dissatisfaction amongst private landowners and opponents of OHV use in rural areas • Policing • Related infrastructure expense (planning, land acquisitions, construction and maintenance) * If applicable	**Challenges:** • Higher dissatisfaction amongst private landowners in rural areas • Policing • Planning and acquiring strategic linkages • Related infrastructure expenses (Planning, land acquisitions, construction and maintenance) * If applicable	**Challenges:** • Continued dissatisfaction of residents who participate in OHV activity • Policing
Stakeholder Input: • 7% of household survey respondents and 46% of group survey respondents felt that OHV use should be allowed on County lands in a general sense • 9% of household survey respondents felt that snowmobile use only (not including other off highway vehicles) should be allowed on County lands in a general sense	**Stakeholder Input:** • 46% of household survey respondents and 38% of group survey respondents felt that OHV use should be allowed on County lands with restrictions • 56% of household survey respondents felt that snowmobile use only (not including other off highway vehicles) should be allowed on County lands with restrictions	**Stakeholder Input:** • 46% of household survey respondents felt that OHV use should continue to not be allowed on County lands • 34% of household survey respondents felt that snowmobile use should not be allowed on County lands in a general sense
Likely implications of implementation: • Demonstrated dissatisfaction of private landowners and opponents of OHV use • Requests from OHV users for the County to become more involved in OHV trail planning, acquisitions and provision	**Likely implications of implementation** • Demonstrated dissatisfaction of private landowners and opponents of OHV use • Requests from OHV users for the County to become more involved in OHV trail planning, acquisition and provision	**Likely implications of implementation:** • Continued, but not heightened, dissatisfaction of private landowners and opponents of OHV use • Continued requests from OHV users for the County to allow the activity to occur

funding and partnering

operation and maintenance

Trails are currently planned and provided by the County through the following departments.

1. Transportation and Agriculture Services (TAS) are responsible for the majority of trail maintenance in urban areas (Sherwood Park) including snow removal.

2. Recreation, Parks and Culture (RPC) are responsible for trail based programming as well as limited maintenance and surface maintenance in urban areas (beyond base level) and complete responsibility for rural trails (typically aggregate).

3. Planning and Development Services (PDS) and Capital Planning and Construction (CPC) are responsible for the planning and design, and in some instances, construction of trail development.

Current maintenance guidelines for trails during winter are snow removal in Sherwood Park, within 8 days of a snowfall (by TAS); maintenance is conducted based on a prioritized route. During the summer months, trails are swept once per season by TAS (spring) and once per week by RPC in areas where debris is accumulated. In higher traffic areas where debris accumulates at a rate for which a one week interval is not sufficient, RPC provide "beyond base level" surface maintenance. RPC is also responsible for maintenance of existing trails in rural subdivisions which is typically granular / aggregate and thus has a different maintenance requirement than do asphalt trails. RPC also maintains the trails at the Strathcona Centre year round.

When trails are planned, all pertinent departments are consulted (including RPC, TAS and others) and the non-developer implemented trails are managed by CPC.

Although an audit of the effectiveness or appropriateness of existing service guidelines and trails maintenance is beyond the scope of the strategy, observations regarding trail maintenance investment by the

County is summarized as follows:

- **capital investment** by the County in trails has equated to approximately $500,000 since 2006. This equates to an average of $100,000 per year and does not include trails created during the development process which equates to more significant investment;
- in comparison, $207,000,000[1] has been spent on roadway development since 2006, $6,100,000 has been spent on park development and $40,000,000 has been spent on recreation and culture indoor facility development;
- ongoing **annual operations and maintenance** investment in existing trails is explained in the following chart

Department	Annual Budget	Description
TAS	$350,000	Surface maintenance (all seasons) and maintenance of trail amenities
RPC	$15,000 *($3,000 for granular)	Surface maintenance and maintenance of trail amenities Maintenance of trails in rural subdivisions (aggregate)
Total	$365,000	

Ongoing operations and maintenance budgets are approximately $4.14 per linear meter[2] for asphalt trails and $0.20 per linear meter[3] of granular/brick/stone trails. Administrative estimates suggest more appropriate operations and maintenance budgets should be set at $5.00 per linear meter for asphalt and $7.00 per linear meter for aggregate / granular trails. This would represent an immediate increase in existing budget amounts and would also have to be increased on an annual basis in regards to inflation (existing trails) as new budget allotments for new trails are added to the inventory. **Increased annual operations and maintenance budgets as outlined above would enable appropriate maintenance levels to be achieved on existing and new trails.**

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1 *Including traffic lights*

2 *Assuming 88km of asphalt trails.*

3 *Assuming 15km of granular/brick/stone trails.*

As can be determined, investment in trails in the County is much lower than others aspects of both transportation and recreation services currently provided by the County. Trails are a high priority of residents and are proven to impact quality of life for all ages. In some cases, trails are more popular and effective in promoting physical activity and creating healthy recreation opportunities than many other elements of infrastructure intended for similar purposes and offered by the County. **Increased capital investment in trails would lead to improved community wellness and overall quality of life.**

Life cycle budgeting for trails is becoming increasingly important as it is required to sustain existing service levels. When usage levels increase, life cycle budgets must also increase. Since a main goal of this strategy, as well as the County in general, is to increase participation, life cycle budgeting will be key to sustaining existing participation while accommodating new users and uses. Expected life cycle of trails should be similar to those of roadways (20 years).

If the County is to broaden the use of the existing trail system to include more of an active transportation role, **there may be a requirement to increase ongoing maintenance investment to evolve trails to a level of maintenance similar to roadways.**

As well, **if the County is to coordinate and provide in some form a rural trail system, ongoing investment would have to be made for operations and maintenance of a rural trail system.** Although the guidelines are different for rural trails than currently afforded to urban trails increased investment will nonetheless be required.

Current annual operation and maintenance investment originates from a combination of operational budgets dedicated to trails as well as discretionary department budgets. It would be advisable to develop a comprehensive, complete trail budget for capital, operations and maintenance. Having an understanding of the total budget allocated to trail development and maintenance would allow for a more thorough understanding of the implications of adding new trails to the system as well as measuring return on public investment. The trail budget would have to be a product of interdepartmental collaboration and would be depicted annually as follows:

	PDS/CPC	TAS	RPC	Developers	Total
Major Capital – New Projects	$100,000	$0	$0	Varies	$100,000
Major Capital Replacement – Asphalt (developed and semi-developed)	$0	$240,000	$0	n/a	$240,000
Major Capital Replacement – Granular (semi-developed)	$0	$0	$0	n/a	$0
Maintenance and rehabilitation – Asphalt (developed and semi-developed)	$0	$15,000	$0	n/a	$15,000
Maintenance and rehabilitation – Granular (semi-developed)	$0	$0	$0	n/a	$0
Operations – Asphalt (developed and semi-developed)	$0	$350,000	$12,000	n/a	$362,000
Operations – Granular (semi-developed)	$0	$0	$3,000	n/a	$3,000
Total	$100,000	$605,000	$15,000	n/a	

* indicates current annual investment in trails

trails partnering framework

Strathcona County currently partners (in some shape or form) with local groups in the provision of recreation amenities including sports fields, trails and indoor facilities. Existing partnership have proven to be beneficial for both the County and local groups and thus are embraced by all stakeholders. Potential partnership models include; 1) capital funding arrangement, 2) operating and maintenance relationships, or 3) combinations of both. Each type of partnership should achieve the following conditions:

Conditions for Capital Partnerships:

- group funding assistance should not compromise the quality guidelines accepted for County sponsored trails
- group funding assistance should not be dependent upon excluding public use of trails in question
- group funding assistance should be significant (i.e. no less than 25% of overall project capital cost)

Conditions for Operating and Maintenance Partnerships:

- group funding or maintenance assistance / activity should not compromise quality guidelines accepted for County sponsored trails

If the aforementioned conditions are met, there are a number of criteria by which potential partnerships should be assessed in understanding the ability for organizations to partner with the County. Acceptable partnership arrangement conditions are outlined in Strathcona County's Community Partnerships Projects in the Municipal Policy Handbook (SER-009-039). The concept of partnering on future trails projects is also an important consideration to project prioritization as outlined in previous sections of this strategy.

funding for trails

Funding for trails can come from a variety of sources. In terms of capital project funding, general tax revenue, local improvement bylaws, government grants, group fundraising and/or contributions and sponsorship arrangements can all be viable sources of funding. There is also potential for trail development to "tag along" with roadway development in some instances either through widened roadways (bike lanes) or sidewalks. Operational funding opportunities, however, are not as broad and sources could include along with general tax revenue, user fees / registration fees (typically not charged by municipalities in the case of trails), sponsorship (to a limited capacity) and group stewardship / maintenance (not monetary).

As many trails are integrated components of the overall transportation network in the County that service both recreation and active transportation purposes, they are part of a base level of service that the County provides for its residents. These "base level" trails are primarily offered in urban areas. As they are considered essential to service provision they should have a different funding formula than trails that serve specific recreation interests or that do not form part of a connected network. The following diagram explains.

Funding for "Base Level" Trails

| General Tax Revenue | → | Capital and Operating funding for Base Level Trails | ← | Developer Contributions |

Typically, capital costs for base level trails developed in new areas are the sole responsibility of the respective developer while capital costs for base level trails in existing areas in the County are the responsibility of the County. Maintenance and operational costs associated with base level trails are the sole responsibility of the County. Cash in lieu can be an option if used to invest in other aspects of the trail system.

Trails that are not considered to be "base level" ultimately do not serve the broad interests of the general public and / or do not serve both a recreation and active transportation purpose. These "specialty" trails, although very important to overall trail provision in the County, must have different funding requirements than the "base level" trails mentioned previously. The following diagram explains.

Funding for "Specialty" Trails

Group Contributions

Special Levies

General Tax Revenues → Capital and Operating funding for Specialty Trails ← Developer Contributions

Corporate Sponsorship

Government Grants
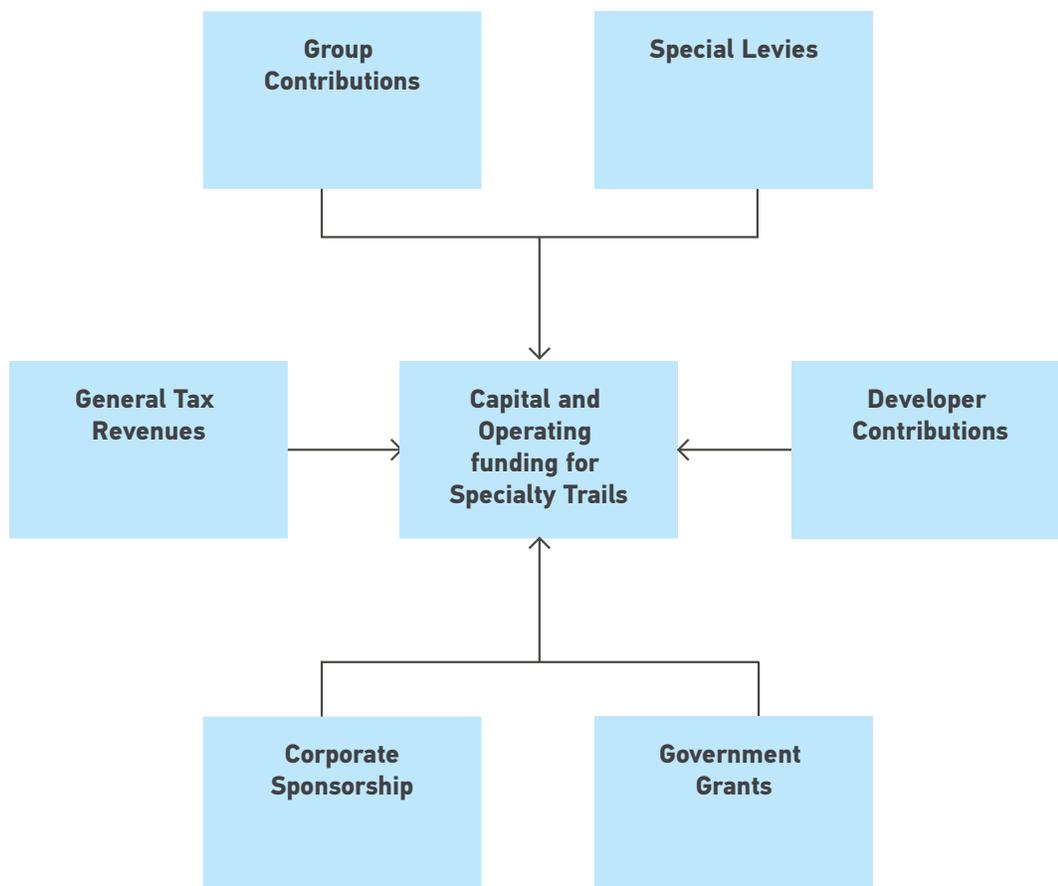
Although the funding of specialty trails will be dynamic depending on the project, the following guide should be considered when specialty trail projects are being contemplated and associated funding decisions are made by the County.

Funding Source for Specialty Trails	% of Project	Considerations
General Tax Revenues	10%-60%	• Level of public accessibility • Size of group accommodated
Group Contributions	25%-50%	• Level of control / access granted to the group • Sustainability of funding (if operating)
Specialty Levies	0%-50%	• Level of buy-in from area residents • Scope of project, deviation from base level
Developer Contributions	50%-100%	• Level of development credit given • Level of public accessibility
Corporate Sponsorship	0%-100%	• Naming / branding granted or philanthropy
Government Grants	0%-100%	• Ability of third party (group or private sector) to lever government grants • Level of public accessibility (for grants attained by the County)

The aforementioned funding sources should all be explored when the development of specialty trails are considered. It is important to note that the primary financing goal for specialty trails is to minimize the level of general tax revenues required to capitalize and operate / maintain a project.

summary and overall implementation

The Trails Strategy includes a number of initiatives and recommendations intended to improve the future provision of trails within Strathcona County. The key components of the Strategy include an overall **Vision and Guiding Principles**; a **trails hierarchy** and associated development and maintenance **guidelines**; a **trail project prioritization framework**; a means to **measure trail system** performance; strategies on **reducing trails** user and private landowner **conflicts**; and a **framework for the financing of future trail development and maintenance.**

Trails Strategy Intent

Defining our existing trails system
- Why we provide trails
- What types of trails we provide

How trails are provided
- Maintenance guidelines
- Dealing with conflict
- Partnerships in maintenance

How to measure performance
- User statistics
- Performance criteria
- Reporting

Defining our existing trails system
- What new types of trails will we provide in the future?
- How will new projects be prioritized and funded?
- How will partnerships be incorporated in new trail development

The Trails Strategy provides needed direction and clarity to the questions outlined above. The implementation of the Strategy will ultimately have to be through the actions of a variety of project stakeholders including trail users, private landowners, the general public, County Council and administration and partner groups (where applicable).

Many of the issues and recommendations discussed in the Strategy, such as the County allowing regulated OHV acess on County lands and the potential of planning and maintaining a rural trail system, must be addressed through formal Council and/or administrative decision making and thus the recommendations contained herein are not binding. If strategic areas require formalization, each item would have to be brought forward as policy for Council deliberation and decision making. The intent of this Strategy is to assist in this decision making process. The following key initiatives have been formulated throughout the Trails Strategy process.

vision and principles

The vision for trails in Strathcona County is:

> *Rural and urban trails throughout Strathcona County provide for a balance of recreational and active transportation uses and are provided by the County to allow for maximum positive impact to overall quality of life of residents taking into account concerns of all stakeholders.*

The following guiding principles have been integrated into all aspects of the Trails Strategy and will help guide future trails provision in the County.

- trails provide opportunities for recreation pursuits of all ages, thereby increasing community health and well being and improving quality of life;
- trails provide opportunities for active transportation;
- trails are important to the quality of life of both urban and rural Strathcona County residents;
- trails are key components of walkable communities and act as a catalyst for community connectedness. Trails should be inclusive and accessible; and
- trails must be provided through the involvement of all stakeholders.

hierarchy and guidelines

The County must define the types of trails it currently provides as well as what types of trails it is willing to provide. Ensuring that the trails system can be utilized for both recreation and active transportation requires that trail provision is integrated with overall transportation planning throughout the County. Further contemplation regarding trail provision in the rural areas (e.g. a rural trail system and /or OHV use in the County) has a number of implications that have to be weighed and balanced in order for political decision making to occur. The strategy outlines a hierarchy for trails in the County as well as provides expected implications of rural trail system delivery for future decision making.

prioritization

Project prioritization is addressed through a weighting system that assesses twelve different criteria for each project and eventually leads to a score that prioritizes identified projects at a given point in time. Although this matrix is not binding, it provides transparent guidance for decision making. **It is important to note that trail projects already approved for funding and construction prior to adoption of the Trails Strategy are not subject to ranking through the prioritization matrix.**

performance measurement

Measuring the performance of the trails system is important in justifying existing and future investment, providing a continuous improvement to quality of life of residents and visitors and providing useful feedback to trails system delivery agents. The performance measurement outlined herein assesses five key performance criteria of the trails system in a framework that will allow for annual benchmark reporting on the overall effectiveness of this important recreation and transportation amenity.

education and promotion

Education and promotion are key considerations for promoting trail use, sharing proper trail etiquette and associated rules and regulations and explaining the benefits that trails afford residents. A trails awareness campaign directed to increasing trail usage, drawing attention to existing trail resources and minimizing trail conflicts should be ongoing and elaborate. Key messaging for this campaign would be implemented by the County Communications Department and associated stakeholders.

strategy implementation

The Trails Strategy will be implemented by County Council and administration. The roles and responsibilities of other associated stakeholders such as private landowners and trail users will be as stewards of the trail system. As well they may be required to participate in the mechanisms put in place originating from the Strategy such as participating in ongoing feedback mechanisms, performance measurement and fundraising. The following graphic explains:

Trails Strategy Implementation

Trails Strategy Implementation
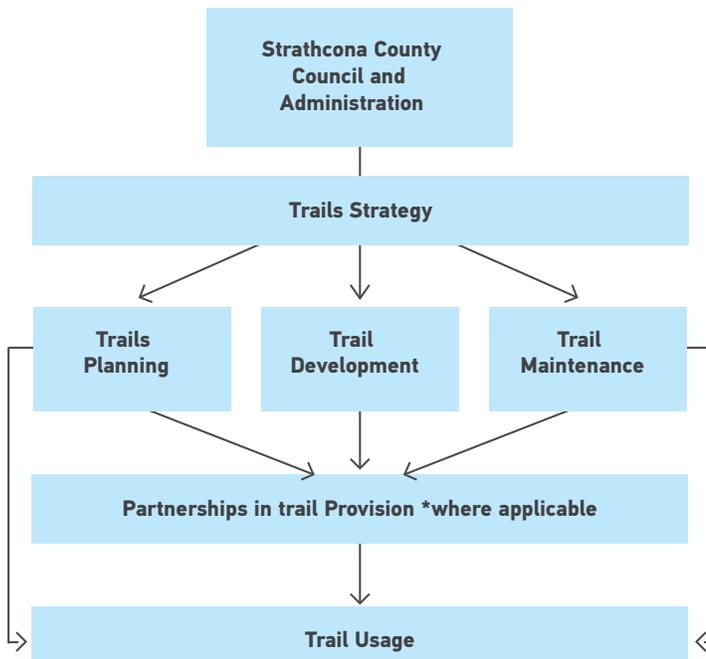
It is very important that the Trails Strategy become a reference document for County departments directly responsible for trails planning, development and maintenance as well as departments responsible for land use and policy planning, transit, programming, legislative and legal services, emergency services, bylaw services, etc.

financial impacts of initiatives

Initiatives and issues uncovered throughout the development of the Trails Strategy that will have ongoing **incremental** annual financial impacts to the County (if implemented) include:

1. Maintenance – immediate increased investment in maintenance of existing trails to more appropriate levels as determined by administration

    • approximately $180,000 per year

2. Maintenance – 4% annual increased investment in maintenance of existing trails to accommodate inflation and increased budget allotments per lineal meter for newly introduced trails

3. Life cycle – annual budget allotments to reflect an expected ten year life cycle on asphalt and granular trails (developed or semi-developed) and calculated based on existing inventory and current replacement cost (recalculated every three years).

    • approximately $240,000 per year (2011) *not including granular

4. Performance measurement – the creation of a single point of contact for trails information and reporting, investment in usage statistics tracking, ongoing user and public consultation and other elements of the strategy requiring human resources.

    • approximately $75,000 per year (approximately 1 FTE)

5. Rural trails – significant investment in capital and maintenance

    • annual financial implications not applicable until the idea of a rural trail system and associated definition / guideline is agreed to by County decision makers and trails stakeholders.

Although the Strategy does not include a list of capital projects required for the future of the trails system, a number of specific projects were identified throughout the Strategy process. The prioritization matrix included herein will assist in developing a ranked list of projects, as adjudicated by County administration and will ultimately optimize annual capital budget allocations for trail development. It should be noted that current capital budget allotments are much lower than those for other recreation or transportation amenities offered by the County and the list of current potential / unfunded trails projects would not be completed for more than ten years at the average capital injection level experienced over the past 5 years in the County (approximately $100,000/year).

trails innovation

Demographic and economic change complemented by social and technological innovation has major implications for the future of Strathcona County trails. Important trends to consider in future trail provision in the County are explained as follows:

The population is actively aging.

The trail system should be laid out with loop options of various lengths. Trail maps and descriptions and distance markers clearly show walking time and level of difficulty.

Greater efforts must be made to ensure trails are accessible.

Surfaces, slopes and details such as flexible water bars and strategic railings should be designed to accommodate access by the disabled. Other measures such as brail added to signs and proximity activated recordings of interpretive messages, nature sounds and location information enhance user experience for the blind.

There will be increasing diversity of trail uses moving forward.

Heavily used trails, especially those in urban areas, should be designed wide enough to accommodate diverse, simultaneous uses and divided by lines and signage to separate pedestrians from wheel-based users such as bicyclists, in-line skaters and skate boarders (non-motorized).

Motorized trail uses are becoming more prevalent.

Continual re-evaluation of permitted trail uses must occur as new potential trail uses surface. Residents have requested that the use of Segways, golf carts and electric scooters be permitted on the trail system. Allowing these uses may lead to user conflict and could set a precedent for other motorized trail uses including other off highway vehicles (electric or gas powered).
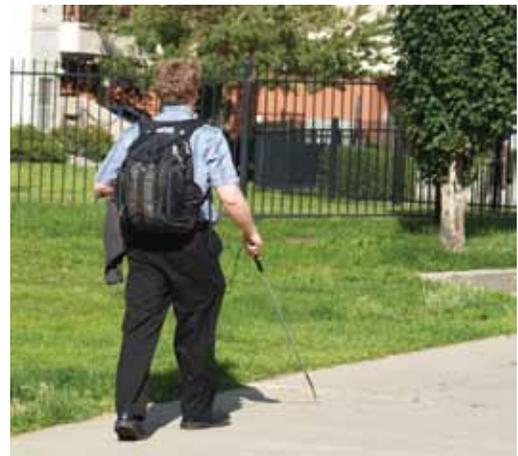
Liability is becoming a greater concern for all stakeholders.

Trail provision must consider both the types of uses permitted and the potential hazards to users and landowners. The County should provide trails that have stable, safe surfaces that stand up over time. Inspection and maintenance of trails also needs to be intensified and invested in, with any hazards, such as fallen branches and washed out trail surfaces, dealt with promptly. Liability concerns with rural trail use also must be considered if a rural trail system is developed.

Trail lighting for fall and winter use is an option.

Trail lighting increases seasonal use while enhancing security, but it is financially feasible only for heavily-utilized trails. The introduction of solar powered lights can make lighting of trails more feasible.

Information technology is enriching trail user experience.

Smart phones are capable of scanning 3D bar codes that can download information and maps to the phones. Strathcona County is already using this technology and this use could be expanded to include trail signs at trailheads and interpretive stations.

In Perth, Australia the Hi-tech Heritage Trail uses modern wireless Internet technology to create a heritage trail around the centre of Perth. "Residents and tourists alike are now able to download, free-of-charge, the colourful stories of significant places directly to their Wi-Fi enabled mobile devices in the form of text, audio and still images."

Google Earth Plus (for a fee) expands the free version of Google Earth to enable downloading of track logs and waypoints from a GPS to display the information on mobile devices.

These are just a few examples of how technology is enhancing trail user experience. To maximize trail experiences for recreation, active transportation and interpretive users, the County should implement technological innovation on the trails system (where feasible).

Cellular phones have greatly enhanced safety and security.

Mobile phones enable a trail user to make emergency calls in case of injury, illness or personal security concerns. As some mobile phone are GPS enabled and some aren't, there is still a need for some form of way-finding / geographical reference on the trail system potentially using trail names and "mileposts" or signs with GPS coordinates, to allow users to understand their physical location.

Trail systems enable active transportation.

This demand for active transportation opportunities will increase with the increasing costs of vehicular transportation, societal realization of the benefits of physical activity and overall concern for the environment heightens. Active transportation can be accommodated by both by a trail system with routes (both separate trails and specialized lanes on roads) to popular commuting destinations as well as the provision of trails to public transit terminals for bi-modal commutes. In order to promote bi-modal commuting further, amenities like bike lockers could be provided at transit terminals and buses may also be equipped to haul bicycles.

Bicycle sharing systems have been adopted by many communities around the world.

Bicycle sharing systems can be administered by government, non-profit and private organizations. As such, the sustainability of the programs can be through public subsidy, corporate sponsorship, advertising and / or user fees.

78

Bicycle Police are patrolling in many jurisdictions including Edmonton.

Growing concern over security is leading to the use of Bicycle Police units, which are well suited to unobtrusively but effectively patrol parks and dense urban areas where patrol cars or motorcycles would be too intrusive or where access is restricted. Although security on Strathcona County's trail system is not yet a problem this may change over time. Bicycle patrol already occurs to some degree on the County trail system.

The opportunity for rural and specialized municipalities to plan, maintain and promote Rural Trails' loops is exciting.

The provision of Rural Trail Loops not only provide a trail amenity for residents of rural areas but also provides the opportunity for urban residents to get exposed to rural areas, features and lifestyles. Rural Trail loops, if planned appropriately, can serve both recreation and transportation functions and can improve quality of life for rural and urban residents alike.

Bicycle repair stations

Some communities have implemented "do it yourself" bicycle repair kiosks along their trail systems. The kiosks provide the tools necessary for minor repairs and could be offered via a fee, free, or through a partnership with local bicycle retailers.

conclusion

The Strathcona County Trails Strategy is built upon existing County strategic foundations and has been developed through thorough public engagement, prudent background research and expert analysis and opinion. The recommendations and direction outlined in the Strategy was confirmed by groups and residents and the final Strategy has attained majority acceptance throughout the County.

The Strategy will provide guidance for future decision making regarding trails in the County and will provide a forum where all stakeholders will have the ability to raise concerns and praise successes of Strathcona County Trails.

80
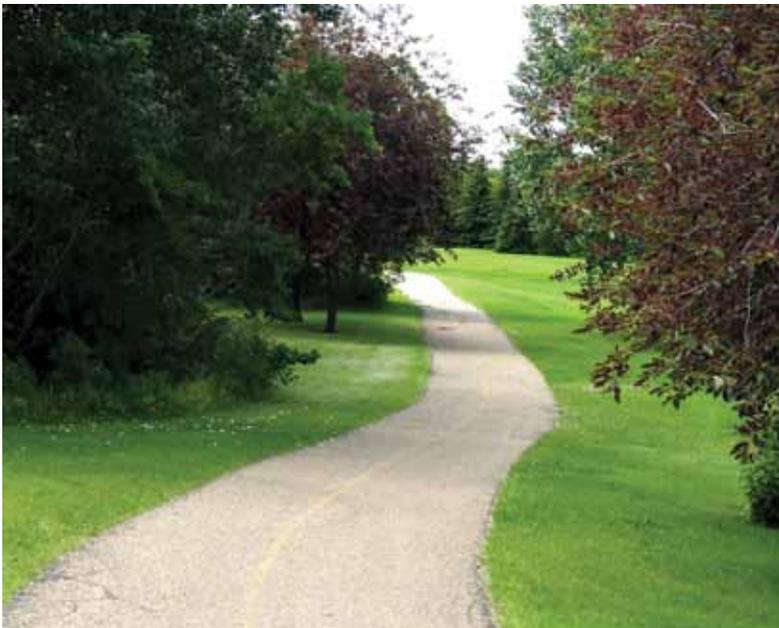
appendix: country residential area concept plan

Legend

- Country Residential ACP Boundary
- Urban Service Areas
- Parcel Line
- Lakes
- Highways
- Possible Trail Alignment
- Proposed Trail Alignment
- Exisitng Trail Alignment

N

Ardrossan

Sherwood Park

Strathcona County

Country Residential
Area Concept Plan

Existing & Proposed
Trail System

Map 6

Date: 2 Aug, 2011
Drawn: StoneK
Scale: N.T.S.

81