

Town of Penhold



Active Transportation Plan



September 2016

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1.0 Introduction

The Town of Penhold is a growing community which offers a number of live, work, and play opportunities to its residents and visitors. As the community continues to grow, it is essential to ensure that the Town plans for the long-term environmental and social sustainability of its patrons.

The Active Transportation Plan (ATP) provides a long range policy framework to evaluate and improve active transportation opportunities and connectivity in the Town by proposing improvements to network connections and strategies for implementation. Active transportation includes any form of non-motorized human-powered form of transportation including but not limited to walking, cycling, and in-line skating, using a wheelchair, pushing a stroller and jogging with the intention of getting yourself and others to a particular destination.

Benefits of Active Transportation include the improvement to people's overall health, the opportunity to educate the community about living an active lifestyle, the opportunity to decrease the dependability on vehicle transportation and makes economic sense.

There are many physical barriers to active transportation in a community. These barriers include the inability to cross a street safely due to large intersections and short signal lights, lack of walkways and sidewalks, and lack of bike lanes and racks.

As The Town of Penhold continues to be an attractive place for families to live, pressure to develop safe and efficient active transportation routes will become more evident. In addition, as development pressures continue it is beneficial for the Town to have a plan in place that guides the review of Outline Plans and allocation of capital resources.

1.1 Purpose and Objectives

The purpose of the Penhold Active Transportation Plan is to provide opportunities for residents and visitors to participate in active modes of transportation. This plan is intended to complete and build upon existing Town systems of sidewalks, trails and parks to encourage community movement of all ages and abilities.

The objective of the Active Transportation Plan is to establish guidelines to ensure cohesive, connected, safe and functional future developments and redevelopments of existing trails and transportation networks within the Town. These trails and pedestrian networks will contribute to the health and well-being for Town residents and visitors of all ages, abilities and income levels.

1.2 Active Transportation Planning Process

Preparations for the Active Transportation Plan started with inventorying existing sidewalks, trails, parks, open space areas and natural features with opportunities to provide connective linkages to these existing features. Once this background information was obtained, a review of various statutory and non-statutory plans, publications and real world examples of successful active transportation plans and networks was undertaken. Policy and guideline approaches were drafted and reviewed with internal departments. Implementation Strategies and Policies were developed including the review of project prioritization. While there are a number of key active transportation projects, the review of project prioritization considered the urgency and timeline requirements. The listed areas of improvement were categorized into short-term action items, long-term improvement and future improvements. Consideration and re-evaluation of the active transportation process will be undertaken periodically as the Town continues to growth to ensure that the active transportation needs are continuously being enriched.

2.0 Background

In addition to a healthy supply of natural and constructed open spaces, having well planned and integrated trail networks to open spaces within Town are important to sustaining a healthy and well-balanced community. Neighbourhood planning, infrastructure, design and construction contribute to the enhancement of the community’s active transportation system.

2.1 Review of Town Statutory Plans

The Active Transportation plan is not considered a “statutory plan” under the *Municipal Government Act* therefore there are no specific requirements in terms of public referral or agency involvement, including no requirements for the minimum items the plan must include. The Town’s various statutory plans and guidelines were reviewed in terms of ensuring these plans and guidelines contain relevant information that could be considered in the preparation of the Active Transportation Study and in its recommendations for future implementation.

Municipal Development Plan

While the Town provides for safe, accessible and integrated open spaces that are functional and multi-purpose, the Town within its policies of the Municipal Development Plan strives to ensure opportunities for pathway networks which link these parks, open space and natural areas within the community, including the development of accessible local parks and playgrounds within residential areas.

The vision statement in the 2010 Municipal Development Plan (MDP) foresees a trail/pathway system connecting areas within the Town and providing linkages with future regional trails. The following table illustrates pertinent policies contained in the MDP in one column and how the Active Transportation Plan could address these policies:

5.0 Growth Management and Financing of Urban Growth	
<p>Policy 5.6 The Town shall promote urban design that encourages pedestrian accessibility by providing the following:</p> <ul style="list-style-type: none"> • Functional and attractive pedestrian linkages between adjacent neighbourhoods; • Pedestrian facilities designed for universal accessibility; • Clearly marked pedestrian crossings 	<p>ATP: identify gaps in the existing sidewalk system, identify areas where curb ramps are required, address trail design (i.e. impervious surface to facilitate all users), and identify possible crosswalk improvements and locations for new crosswalks.</p>
7.0 Commercial Development	
<p>Policy 7.2 All commercial development shall be required to address the following to the satisfaction of the Development Authority:</p> <ul style="list-style-type: none"> • Provide for safe onsite vehicular movement, safe and convenient pedestrian movement and linkages to the open space system; 	<p>ATP: identify crosswalk improvements and locations for new ones to accommodate pedestrian and bicycle access, identify gaps in the sidewalk system providing access to commercial developments, and linkages to new commercial areas conceptually identified in the MDP.</p>

<p>Policy 7.5 To facilitate possible improvements and development of a central business area, the Town should, in consultation with property owners of the area, undertake a design concept that addresses:</p> <ul style="list-style-type: none"> • Safe and convenient pedestrian movement, vehicle traffic patterns, and parking areas; 	<p>ATP: identify linkages between sidewalks and existing pathways, and future pathway development.</p>
<p>9.0 Open Space and Environment</p>	
<p>Policy 9.1 The Town shall identify significant natural features to be preserved and integrated into the open space system for public use and/or environmental protection or public safety, where feasible.</p>	<p>ATP: identify linkages to open space systems.</p>
<p>Policy 9.9 Local playgrounds and parks shall be provided within residential areas and sited to be accessible to the immediate neighbourhood and provide safe environments. Wherever possible, linkages between open spaces, community facilities, schools and the central commercial core and housing areas shall be provided using an integrate system of linear parks and pathways.</p>	<p>ATP: identify gaps in the sidewalk and path systems.</p>
<p>Policy 9.11 The Town shall support the use of open space areas to accommodate as broad a range of activities and user groups as possible without creating unsafe conditions or high potential for conflicts among users.</p>	<p>ATP: identify possible multi-user pathway system locations.</p>
<p>14.0 Transportation</p>	
<p>Policy 14.9 The Town shall encourage the establishment of bicycle and pedestrian routes as integral components of the transportation, recreation, community and education facilities.</p>	<p>ATP: provide a cohesive overall active transportation network that links housing with commercial and recreational opportunities, while providing outdoor recreation opportunities as well.</p>
<p>Policy 14.10 The Town shall work with other local government and community group partners to develop a regional trail network.</p>	<p>ATP: ensure adequate linkages with Red Deer County’s regional trail system</p>

Land Use Bylaw

The Town's Land Use Bylaw establishes the regulations which govern how development of land and buildings occur within the Town. When considering development, the Town ensures that regulations for pedestrian site circulation are taken into consideration for new commercial design developments. Specific regulations are identified for walkways; access and connection, both internal and external of the proposed development. Regulations designed towards pedestrian scale requirements are imperative for constructing flaw-less pedestrian linkage for people with full and limited mobility.

The Land Use Bylaw integrated policies requiring the consideration of pedestrian and bicycle activities and functions. These policies pertain mainly to changes in commercial design guidelines to ensure that pedestrians, persons with mobility challenges and cyclists needs are taken into consideration.

Key requirements specific to the ATP are:

- Applications for development permits in the General Commercial (C1) and Highway Commercial (C2) Districts must illustrate vehicular and pedestrian site circulation;
- Buildings in the C1 and C2 Districts must be designed to consider pedestrian scale;
- The provision of bicycle racks along with specifications to ensure adequate spacing between bicycle racks and vehicle parking are required in the C1, C2 and Public and Institutional (PI) Districts; and
- A section on pedestrian site circulation requirements for C1, C2, and PI District developments accessed by the general public has been included to ensure internal walkways and adequate connectivity to adjacent sites.

2.2 Review of Non-Statutory Plans

Within the Town's developments, there are a number of newer subdivision developments which have planned for and have created active transportation trail networks and open spaces. These adopted Outline Plans that have been endorsed by Council that are important to consider in the development of the Active Transportation Plan. Within each of these Outline Plans, a common objective of providing accessible and connective pedestrian networks was presented.

Hawkrige Estates

The Hawkrige Estates subdivision is located on the east side of Highway 2A. The Hawkrige Estates Outline Plan encourages minimal walking distances within the subdivision by creating an interconnected street network and providing walkways where roadway connections are not feasible. The primary multi-purpose sidewalk is along Hawkrige Boulevard which connects east to west from Highway 2A to Waskasoo Avenue. Smaller asphalt trails are identified within the park and connect to smaller open spaces throughout the subdivision. A central open space playground has been built in the heart of the subdivision and is visible and accessible by the primary sidewalk network along Hawkrige Boulevard and asphalt trails connecting to smaller linkages.

Oxford Landing

The Oxford Landing subdivision is located north of Highway 42 and east of Highway 2A. The outline plan has identified a number of asphalt trail networks throughout the development. The primary asphalt trail network is identified on the north side of Highway 42 and connects to Waskasoo Avenue north. Within the subdivision, the major concrete sidewalk system runs along Oxford Boulevard from Waskasoo Avenue with a connection to the north end of the roadway. Smaller asphalt trails interconnect from the major trail network to various open spaces, including the large storm pond at the north east portion of the development.

Palisades

Linear connections have been designed for pedestrian circulation throughout the Palisades subdivision. Asphalt trails will foster pedestrian movement around the proposed storm pond and will provide connection to open spaces and park areas throughout the development. A multi-purpose sidewalk is proposed along the subdivision's major collector roadway. This collector roadway will connect west from Robinson Avenue east to Waskasoo Avenue. The Palisades outline plan identifies pedestrian trails and linkages throughout the subdivision's open space network.

2.3 Review of Studies and Guidelines

Streetscape Design Guidelines

The Town's Streetscape Design Guidelines discusses design guidelines which focus on the livability of the community by providing safe travel opportunities. These guidelines address the notion of *complete streets* which are designed to better service both the pedestrian and the motorist. The importance of balanced and multi-nodal transportation systems are emphasized with a community's walkability and encourage the live, work life balance and provides opportunities for non-motorized modes of travel, while minimizing travel time and distance.

The Streetscape Design Guideline provided a foundation for the Active Transportation Study as the guide had taken into consideration policies that reflect the goal of establishing safe, cohesive, functional and well-connected transportation networks for pedestrians. The policies within the guide promote connective and active transportation networks throughout the Town and guide the design of new developments and redevelopment with this intent in mind.

One of the goals defined in the Guidelines the development of an efficient and effective transportation system for all potential users. The design of the street realm should provide a balanced transportation system that fully integrates automobile, bicycle, pedestrian and public transportation needs. The Guidelines recognize the importance of creating a multi-nodal transportation system that emphasizes "walkability" and contributes to a livable community.

Livable community goals include:

- Choice of travel mode
- Support public social contact
- Create local identity
- Create a safe environment
- Provide for physical comfort
- Provide spatial definition

The Streetscape Design Guidelines provide for a valuable resource for design criteria for the streetscape, which includes future bicycle lanes, trails and sidewalks for the purposes of the Active Transportation Plan. These guidelines state that aesthetics have a major impact on enhancing pedestrian comfort.



Figure 1: Penhold Streetscape



Figure 2: Splash Park

2.4 Connecting the Active Transportation Network with Adjacent Trail Plans

The Central Alberta Regional Trails Society (CARTS) supports local trail and recreational trail developments in Central Alberta. The Town has had discussions with the not for profit organization and Red Deer County with regards to future considerations for a 3.6 km trail development that would connect Penhold to Springbrook. The development of this trail was tabled as the development process became complicated with the proposed twinning proposal and study of Highway 2A by Alberta Transportation. The twinning for the section of Highway 2A north of Penhold would likely be warranted based on the development in Penhold, including the development in the Oxford Landing subdivision. The 2A Twinning project proposed a 4.0 m wide multi-use trail along the east right-of-way property line along Highway 2A between Gasoline Alley and Penhold.

CARTS have also been in discussions with the Town of Penhold, Innisfail and Bowden for the development of a section of Trans Canada Trail network that would ultimately connect from Penhold to Bowden. The Penhold to Bowden Regional Trail Concept Plan was accepted as information in 2013 by the trails committee which consisted of representatives from the involved municipalities and representatives from the Alberta TrailNet and CARTs. As of recent, the trail proposal has been tabled until such time as funding and the final trail design has been completed for the Penhold to Innisfail trail.

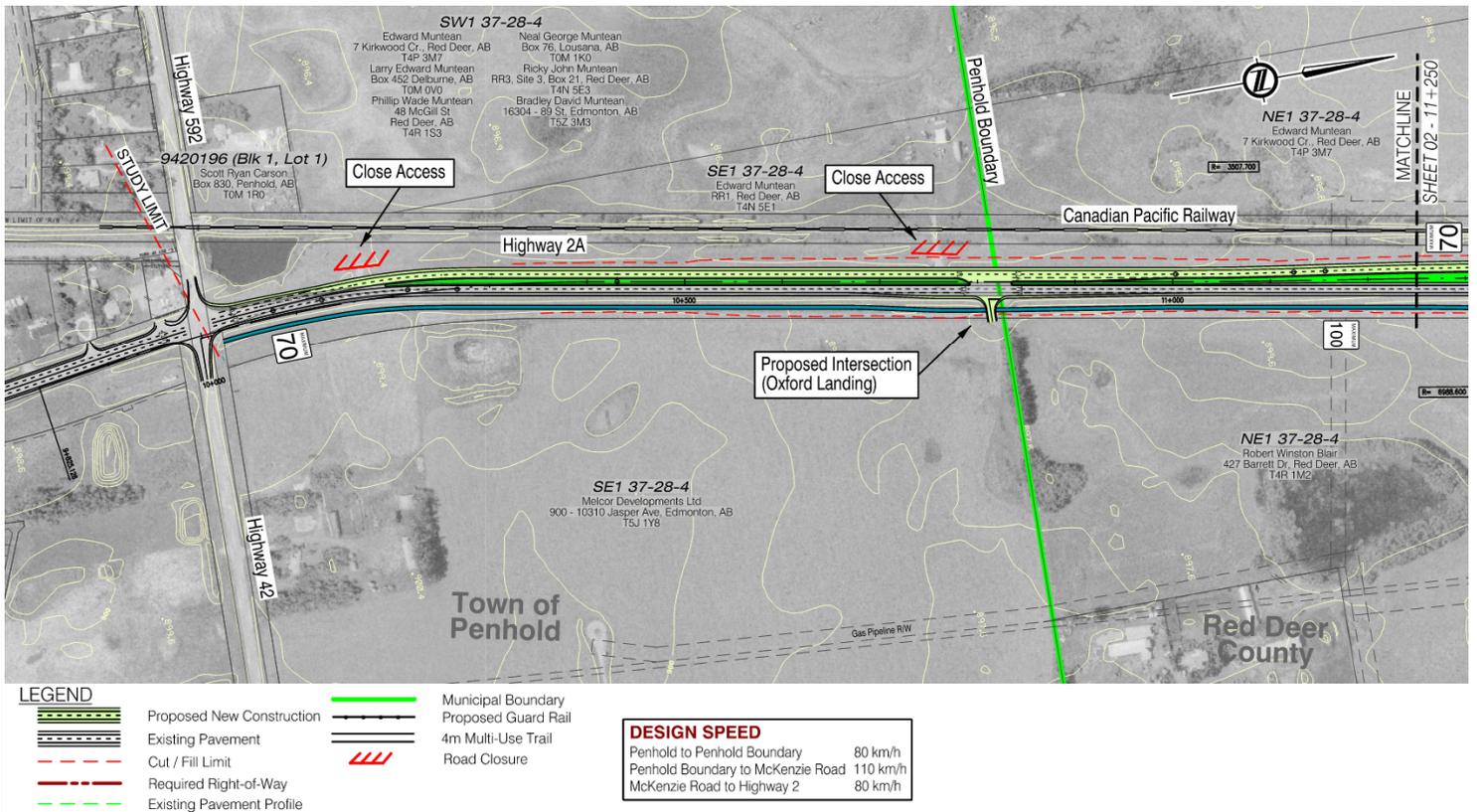


Figure 3: Proposed Twinning of Highway 2A with Multi-Use Trail
 (Source: http://www.transportation.alberta.ca/projects/assets/Area_6_Central/Hwy2A2to42/Funcplans.pdf)

2.5 Emerging Trends

Many Canadian research findings are publishing health study reports which identify a significant number of Canadian adults, children and youth are not getting the recommended levels of daily activity. The lack of physical activity is contributing to the growing increase in obesity health related conditions such as heart disease and diabetes.

Maintaining, supporting and encouraging active lifestyles in the community require balancing the design of the built environment with the opportunity to engage and promote active transportation. The Active Transportation Plan is an inventory of the opportunities for streetscape improvements, including evaluating trails and sidewalk connectivity. The benefits of active transportation in the community provide for a healthier lifestyle whereby people can walk, cycle or use other modes of non-motorized methods for getting to a particular destination.

Safety and aesthetics of the streetscape design should be considered when developing and promoting active transportation within a community. By creating interesting pedestrian connections, networks and open spaces, the interest and opportunities for engaging in active transportation is likely to increase.



Figure 4: Example of active transportation in a community
(Source: <https://www.google.ca/search?q=healthy+lifestyles>)

3.0 Existing Conditions

3.1 Natural Features and Open Space Site Analysis

Map 1 identifies various park systems, open space and recreational locations throughout Town. Approximately 88.25 hectares of land within the Town boundaries takes the form of natural features and major open space areas. These natural, open space areas and recreational amenities are connected through a network of trails and sidewalks that provide pedestrians a variety of different ways to connect and arrive at their destinations.

Many of the parks, playgrounds and open space amenities can be found through the various neighbourhoods in town. The proposed development of the 27 hectares (66 acres) of recreation lands around the Town's Regional Multiplex and Penhold Crossing Secondary School is anticipated to host a variety of recreational amenities including ball diamonds, soccer fields, a track and field site, skate park, campground development and non-motorized boating area. It is important that the town's open space and recreational areas are accessible and well planned throughout the community as these natural open spaces, parks and recreational areas contribute to the well-being of residents and the overall sustainability of the community.



Figure 5: Hayter Street Park, Penhold AB



SECONDARY HIGHWAY 592

HIGHWAY 42

HIGHWAY 2A

HIGHWAY 2A

HIGHWAY 2A

HIGHWAY 2A

HIGHWAY 2A

Fleming Marsh

0 0.1 0.2 0.4 0.6 0.8 Kilometers

Map 1: Public, Institutional, & Reserves Legend

Crosswalk

Playgrounds

Designated Park

Park and Open Space Classification

Environmental/Municipal Reserve

Public/Community Service

Public Utility Lot (PUL)



Date Saved: Jun. 03, 2016



3.2 Existing Sidewalk Conditions, Constraints & Opportunities

During the preparation of the Active Transportation Study, an inventory of the existing street hierarchy, sidewalks, trails and pathway conditions was undertaken. This information provided for a starting point in the preparation for identifying gaps and disconnection in the pedestrian network, in addition to providing recommendations for improvement.

Sidewalks should be fully accessible, continuous and whenever possible without interruptions. Factors which affect the usability of the sidewalk surface include surface materials, changes in level, stability and dimensions of gaps. Currently there are a number of disjointed sidewalk networks throughout the Town. The Town's current sidewalk inventory is illustrated on Map 2. Road and sidewalk widths are provided as well as the identification of constraints and opportunities in an effort to develop an overall active transportation network.

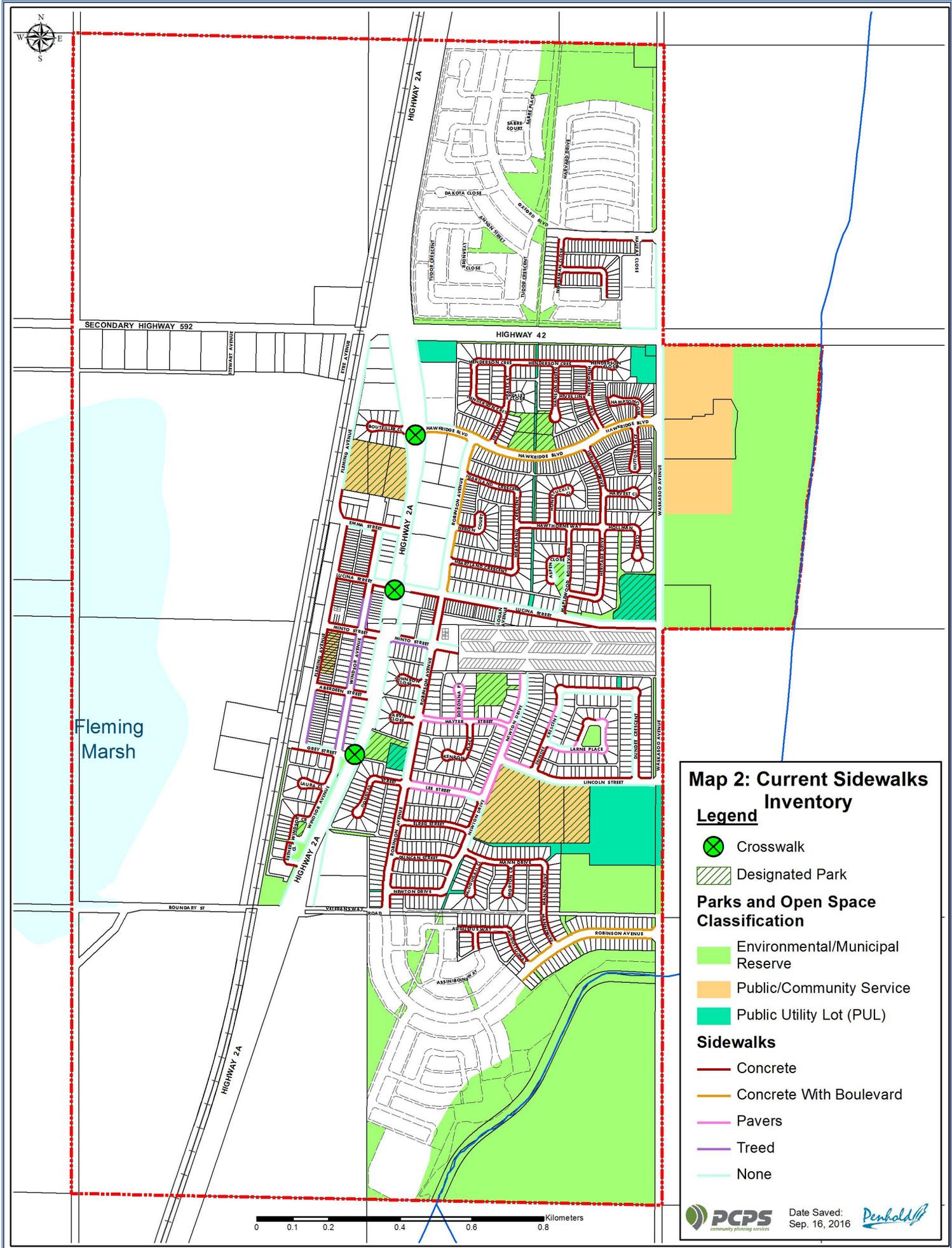
Typically within Town, sidewalks were found to be between 1.2 m (4 ft.) and 2.5 m (8.2 ft.) wide both with curb rolls and without curb rolls. In many of the new subdivisions, the sidewalk standard is 2.5m (8.2 ft.) wide, which typically provide for a 1.5 m (4.9 ft.) wide walkway and a 1.0 m (3.2 ft.) boulevard. This desired sidewalk standard provides for greater clearance for passing pedestrians, people in wheel chairs or people pushing strollers. The preferred minimum sidewalk width is 1.5m (4.9 ft.). Other portions of pedestrian walk within Town were found to consist of a 1.8m (6 ft.) wide paving stone. Alternatively, trails and pathways within Town are typically found to be 1.5m (4.9ft.) for crushed gravel pathways and 2.5m (8.2 ft.) wide asphalt trails.

The Town does not currently have any designated bike lanes within Town as they have not been warranted. While the traffic in Town easily accommodates for cyclists without requiring designated bicycle lanes, areas where a multi-use trail development has been proposed in Map 3. There are areas of opportunities for bike lanes and the standard width of a bicycle lane is 1.2 m (3.9 ft.). There are a number of 2.5 m (8.2 ft.) wide multi-use asphalt trails and sidewalks within Town that can easily accommodate both cyclist and pedestrian.

Opportunities for sidewalk connectivity are identified on Map 3. In the encouragement of the use of non-motorized vehicle use, it is important to provide users with options for complete connectivity to various destinations within town and routes that will help to minimize travel distance.



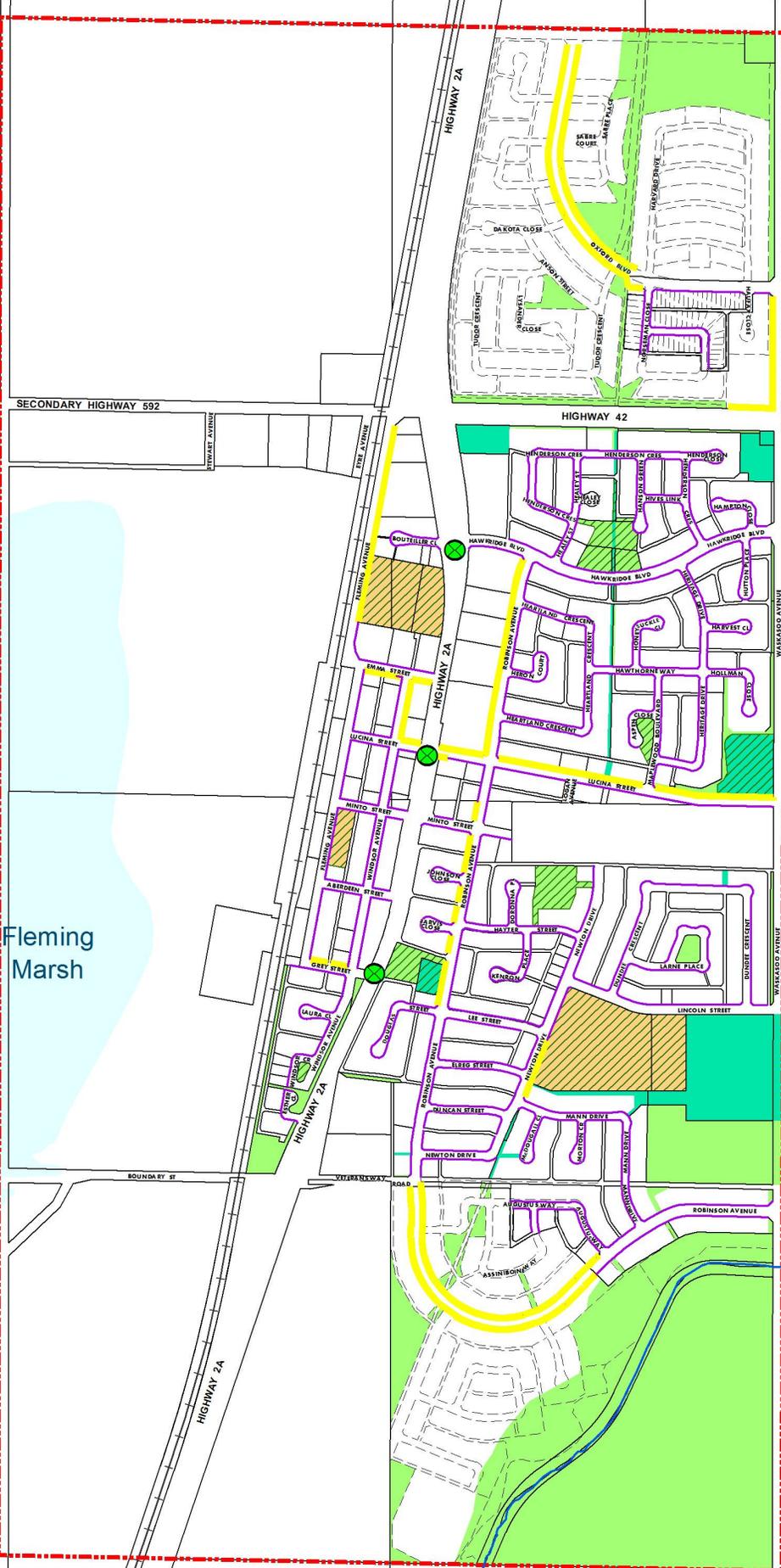
Figure 6: Hawkridge Boulevard



Map 2: Current Sidewalks Inventory

Legend

-  Crosswalk
-  Designated Park
- Parks and Open Space Classification**
-  Environmental/Municipal Reserve
-  Public/Community Service
-  Public Utility Lot (PUL)
- Sidewalks**
-  Concrete
-  Concrete With Boulevard
-  Pavers
-  Treed
-  None



Map 3: Sidewalk Connectivity Opportunities Legend

- Crosswalk
- Existing Sidewalk
- Sidewalk Extension
- Designated Park
- Park and Open Space Classification**
 - Environmental/Municipal Reserve
 - Public/Community Service
 - Public Utility Lot (PUL)

3.3 Arterial Roads

Typically, due to the higher volume and speed of traffic, on-street parking is typically considered inappropriate, however there are several arterial streets within the Town that allow for on-street parking. These streets are inherently less pedestrian oriented due to their role to move traffic efficiently.

As such, sidewalks are required to provide a safe environment for the movement of pedestrians. To provide an adequate separation from motorized traffic, planting strips of a minimum of 2.5 m (8 ft.) wide are encouraged between the curb and the sidewalk. Bicycle lanes of 1.2 m (4 ft.) are acceptable when warranted. Bike lane widths of 1.5 m (4.9 ft.) would be ideal, keeping in mind the nature of the Town's arterial roads to continue to allow on-street parking opportunities. Though the development of a separate bicycle lanes and sidewalks would be ideal, the Town does not have the demand that a larger community may have to warrant such use; therefore multi-use trails have been designed and implemented throughout town's active transportation routes to accommodate these shared uses.

These multi-use trails are identified on Map 4.



Figure 7: Highway 42



SECONDARY HIGHWAY 592

HIGHWAY 2A

HIGHWAY 42

Fleming Marsh

HIGHWAY 2A

BOUNDARY ST

HIGHWAY 2A



Map 4: Multi-Use Trail Legend Systems

- Crosswalk
 - Existing Multi-Use Trail
 - Multi-Use Trail Extension Opportunity
 - Designated Park
- Park and Open Space Classification**
- Environmental/Municipal Reserve
 - Public/Community Service
 - Public Utility Lot (PUL)



Date Saved: Jun. 03, 2016



Highway 2A, Highway 42 & Highway 592

Road Width: Highway 592: 8.4 m (27.6 ft.)
 Highway 42: 10.8 m (35.4 ft.)
 Highway 2A: 12.7 m – 9.0 m – 13.7 m (41.7 ft. - 29.5 ft. - 45 ft.)
 Sidewalk Width: N/A

Highway 2A, Highway 42 and Highway 592 are the Town’s *gateway* road networks and primary highway connections, moving vehicular traffic through and into the community. Although there are three marked crosswalks at different sections of Highway 2A, they do not provide for convenient access for pedestrians or cyclists. Without the availability of sidewalks or bike lanes along Highway 2A to accommodate pedestrians or bicycle traffic, pedestrians and cyclists utilize the shoulders of the roadway to accommodate their active transportation needs. The absence of these amenities creates a restricted and potentially unsafe scenario the active pedestrian and motorists utilizing the highway.

A multi-modal trail is proposed to run east and west along the north side of Highway 42. This 2.5 m (8.2 ft.) wide asphalt trail will be developed as part of the Oxford Landing subdivision and will provide pedestrians and cyclists with opportunities to safely connect to areas within Oxford Landing or other community destinations at the east and west areas of Town.

Constraints	Opportunities
With the exception of the three controlled crosswalks across Highway 2A (Grey, Lucina & Bouteiller), there are no other formal pedestrian or bicycle transportation facilities available along the Highway 2A corridor	Develop a multi-user path on the east side of Highway 2A. The east side would be more suitable because of the continuous strip of land; the west side has private accesses directly onto Highway 2A that could create safety hazards. In addition, residential developments are occurring on the east side of Town. This proposed concept would have to be discussed and referred to Alberta Transportation.
No separation from vehicle traffic, which poses potential for vehicle, pedestrian, and bicycle conflict	
Additional crosswalks (and improvements to existing) needed to link to focal points in Town	As new development continues in the Town and the active transportation system is built up, a designated and marked crosswalk will be built across Highway 42 connecting the Oxford Landing subdivision with Waskasoo Avenue.

3.4 Collector Roadways

Collector streets serve an important function; they are designed to provide a balance of service for all modes of transportation. High quality pedestrian access and bicycle facilities are expected on collector streets to maximize pedestrian and cyclist safety for the same reason as arterial streets; higher volume of traffic traveling at higher speeds.

Robinson Avenue (north of Lucina Street)

Road Width: 12.2 m (40 ft.) where sidewalks exist
 14.6 m (48 ft.) elsewhere
 Sidewalk Width: 1.2 m (4 ft.)

Robinson Avenue is one of the Town’s primary north-south spines and a major pedestrian thoroughfare. Robinson Avenue currently does not have a continuous sidewalk system to accommodate pedestrian traffic along the west side of the street. Robinson Avenue lacks a large tract of continuous sidewalks between Hawkridge Boulevard to Lucina Street and from Minto to Douglas Street.

Consideration should be given to completing the sidewalk network development along the west side of Robinson Avenue from Minto Street to Douglas Street as this would provide pedestrians flow to Tranquility Park without having to find a crossing point on the east side of the road. The completion of the sidewalk along the commercial development towards Hawkridge Boulevard may be considered at a later date.

Constraints	Opportunities
No sidewalk on the west side of Robinson between Douglas Close and Minto Street	Where sidewalks are not present, Robinson Avenue is wide enough to accommodate the development of a sidewalk without impeding vehicular traffic or preventing future opportunities to include a bicycle lane.
Poor crosswalk markings	Need to clearly define crosswalk locations along Robinson Avenue.
No boulevards to provide separation between vehicular and pedestrian traffic	Separate sidewalk development would create a physical separation between the pedestrian and vehicle traffic.
Need for multi-modal opportunities	The width of Robinson Avenue allows for the consideration of developing a wide multi-use sidewalk that could accommodate various pedestrian travels, including the use of bicycles. In areas where Robinson Avenue measures 20 m (6.6 ft.) wide, cyclists can continue to use the roadway.

The provision of complete and continuous sidewalks along the length of Robinson Avenue would allow pedestrians to travel efficiently and safely to commercial destinations and other desired destinations. Where sidewalks are provided they are 1.2 m (4 ft.) in width, which is relatively narrow in comparison to other sidewalks within Town.

The current width of Robinson Avenue could accommodate sidewalks on both sides of the street without impeding vehicular traffic. With sections of Robinson Avenue measuring 20 m (66 ft.) wide, completing the sidewalk linkage along the west side of Robinson Avenue between Minto Street to Douglas Street can easily be accommodated. The section of incomplete sidewalk at Hawkridge Boulevard to Lucina Street could be completed at a future date as development requires.



Figure 8: Robinson Avenue (north of Lucina Street)

Robinson Avenue (south of Lucina Street)

- Road Width: 12.2 m (40 ft.) where sidewalks exist
14.6 m (48 ft.) elsewhere
- Sidewalk Width: 1.2 m (4 ft.) – 2.5 m (8.2ft.)
2.5 m (8.2 ft.) with 3.0 m (9.8 ft.) landscaped boulevard
- Sidewalk Location: East or West and both sides at the very south of Robinson Avenue

Robinson Avenue is the primary north-south spine within Town. As development continues in to extend towards the south, the Palisades subdivision proposes to connect Robinson Avenue from the north at Hawkridge Boulevard to the south at Waskasoo Avenue. Robinson Avenue at the south is a continuation of the 12 m (39.4 ft.) major collector road network with the 2.5 m (8.2 ft.) wide concrete sidewalk continuing on both sides of Robinson Avenue south towards Waskasoo Avenue.



Figure 9: Robinson Avenue (south of Lucina Street)



Figure 10: Robinson Avenue (north of Lee Street)



Figure 11: Robinson Avenue (south)



Figure 12: Robinson Avenue (south)

Waskasoo Avenue

Road Width: 9.0 m (30 ft.)
 Trail Width: 2.5 m (8.2 ft.)
 Trail Location: West side of Waskasoo Avenue

Development and infrastructure improvements along Waskasoo Avenue was started in 2015 and included roadway improvements, decorative street lighting and the development of a continuous multi-use meandering 2.5 m (8.2 ft.) asphalt trail along the west side of Waskasoo Avenue from Hawkridge Boulevard to Robinson Avenue in the south.

This landscaped trail provides residents, families and school children a safe, continuous walking path that connects to and from various neighbourhood extensions, open spaces, recreation and institutional facilities. The trail system allows pedestrians and cyclists to share the route without conflict. The Waskasoo trail system is important to everyday travel as many people are moving through the Town to their desired destinations.

Constraints	Opportunities
Trail stops at the south side of Hawkridge Boulevard	Due to existing development constraints, Waskasoo Avenue trail connects at the east side of Waskasoo Avenue in front of the Multiplex
No trail on the east side of Waskasoo Avenue adjacent to the proposed development of the multiplex recreational lands	Although there is a trail along the west side of Waskasoo Avenue, the development of the multi-use trail system along the east side of Waskasoo Avenue as this would allow pedestrians to have direct access to the recreation site from the trail network.
Trail along Waskasoo North	Waskasoo Trail will connect on the west side across Highway 42 and will be designed to complement the existing trail design and continuing north along the Oxford Landing subdivision

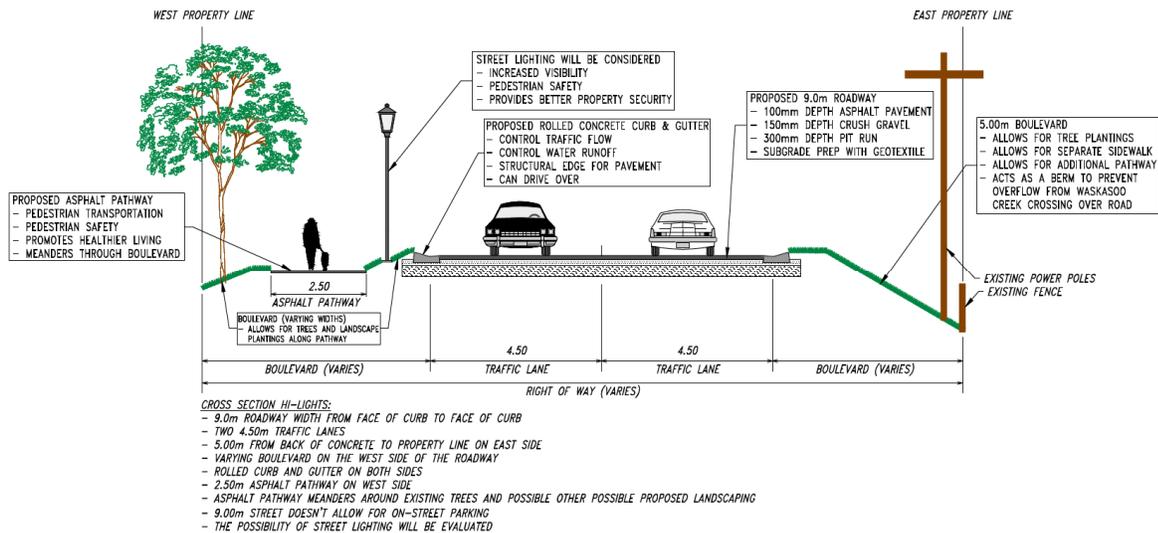


Figure 13: Waskasoo Avenue Cross-section



Figure 14: Waskasoo Avenue



Figure 15: Waskasoo Avenue Trail



Figure 16: Waskasoo Avenue Trail

Hawkrige Boulevard

Road Width: 12 m (39.4 ft.)
 Sidewalk Width: 2.5 m (8.2 ft.) with 3.0 m (9.8 ft.) landscaped boulevard
 Sidewalk Location: North & South Sides of Hawkrige Boulevard

Hawkrige Boulevard is one of the Town's major east-west connector roadways which link Waskasoo Avenue and Highway 2A. This major collector roadway is 24 m (78.7ft.) wide and contains a 2.5 m (8.2 ft.) concrete sidewalk on either sides of the roadway with a 3.0 m (9.8ft.) grassed and treed boulevard separating the concrete sidewalk with the roadway. On-street parking on both sides of the roadway is permitted, however there is no designated bike lane for cyclists. The 2.5 m (8.2 ft.) multi-use sidewalk provides plenty of room for pedestrians to walk side-by-side, accommodate for bicycles or strollers and in-line skating.

The Hawkrige collector road is an important vehicular link through Town and serves as an important active transportation link. It is a direct connection to Waskasoo Avenue at the east part of Town where the Town's Multiplex, Penhold Secondary School and open space recreation areas are located. At the west end, it functions as a primary travel route for students with the pedestrian crossing at Hawkrige Boulevard and Bouteiller Close to provide safer crossing opportunities across Highway 2A.

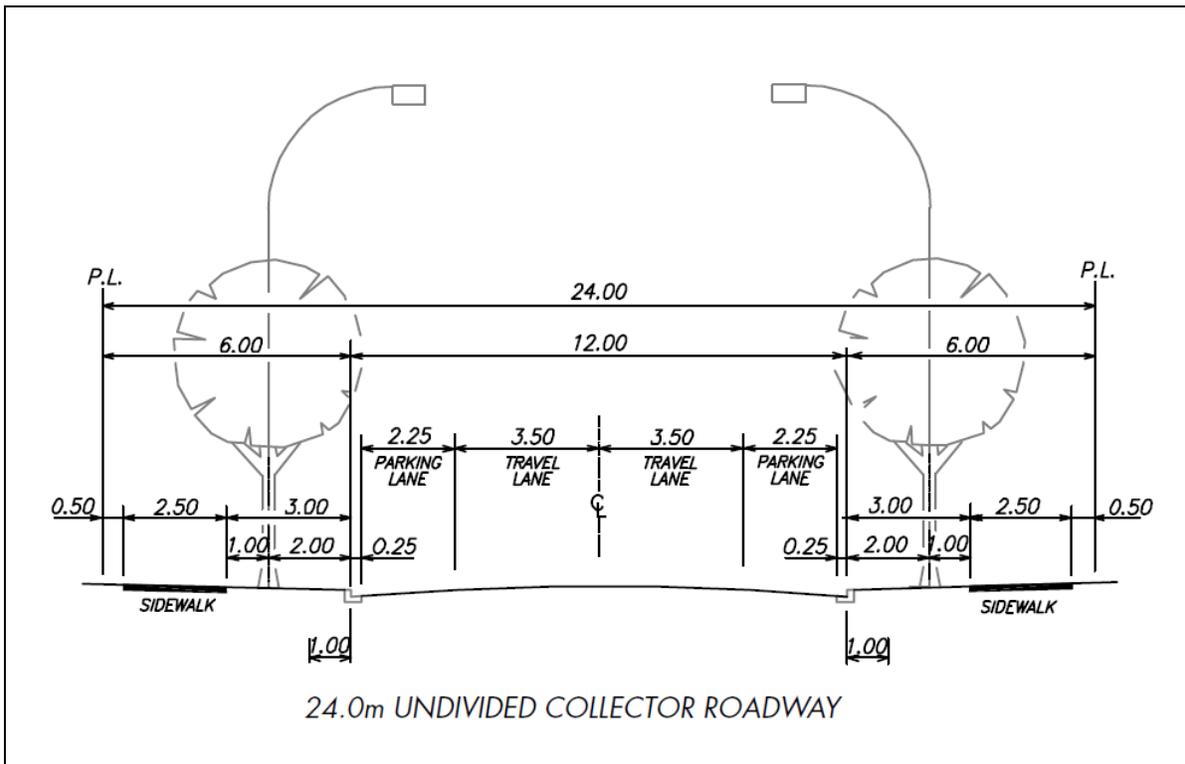


Figure 17: Hawkrige Boulevard Cross-section



Figure 18: Hawkrigde Boulevard



Figure 19: Hawkrigde Boulevard

Lucina Street (east of Highway 2A)

Road Width: 12 m (39.4 ft.)
 Sidewalk Width: 2.5 m (8.2 ft.)
 Sidewalk Location: South sides of Lucina Street

Lucina Street is a major continuous east-west collector road that links onto Waskasoo Avenue where the Town’s Multiplex and Regional High School are be located. The road width of Lucina Street is 12.2 m (40 ft.) on the east side of Highway 2A. The intersection with Highway 2A and Lucina Street provides one of two crosswalks along the Highway 2A corridor within Town boundaries. With the exception between Fleming Avenue and Windsor Avenue, Lucina Street has concrete sidewalks only along the south side.

Constraints	Opportunities
There are no sidewalks on the north side of Lucina east of Highway 2A	<p>It would be ideal to construct a 2.5m (8.2 ft.) wide multi-use trail along north side of Lucina Street from Highway 2A to Waskasoo Avenue, however, the space available for development in the existing boulevard is limited. This 2.5 m (8.2 ft.) wide multi-use trail could be accommodated within the existing road right-of-way as the road width of Lucina Street is wide enough to accommodate this proposed use.</p> <p>The multi-use trail could split and join the existing gravel trail north adjacent to the storm pond, and straight along Lucina Street to link with Waskasoo Avenue and the Multiplex recreation park.</p>
Existing overhead powerlines along the north side of Lucina Street	<p>The existing overhead powerlines along the north side of Lucina Street creates challenges for completing a sidewalk linkage. The space available is quite limited.</p> <p>Should sidewalks be considered for this section of Lucina Street, consideration should be given to removing the overhead powerlines. Alternatively, a 1.2 m (3.9 ft.) wide sidewalk could be developed within the available space and into a portion of the road network.</p>
On-street parking	<p>On-street parking does make it a little more difficult to accommodate safe bicycle lanes, but given the width of Lucina east of Highway 2A it may be possible to accommodate both. However, with the development of a multi-use trail, this would provide sufficient space for cyclists, pedestrians and others.</p>
Incomplete sidewalk at Lucina Street and Highway 2A	<p>At the south corner of Lucina Street and Highway 2A, the sidewalk is incomplete. This portion of sidewalk leads to the pedestrian cross-walk at the Highway 2A intersection. Completing this sidewalk extension is a high priority for the safety of the pedestrian.</p>

The 1.2 m (3.9 ft.) sidewalk located on the south side of Lucina Street provides pedestrians with the opportunity to travel from one end of Town to the other. Being a major east-west collector road through town, both pedestrian and bicycle facilities should be accommodated.



Figure 20: Corner of Lucina Street and Highway 2A



Figure 21: Lucina Street (east of Highway 2A) – sidewalks located along south side of street



Figure 22: Lucina Street (east of Highway 2A – north side of the street)

Lucina Street (west of Highway 2A)

Road Width: 10.4 m (34 ft.)
Sidewalk Width: 1.4 m (4.5 ft.)
Sidewalk Location: North & South sides of Lucina Street

Lucina Streets serves as an access to additional employment and commercial destinations and is an important active transportation link. Though the Town is not large enough to warrant bike lanes, the option of a multiple-use trail is an opportunity for people to choose a variety of methods of travel.

Constraints	Opportunities
No sidewalk along the north side of Lucina between Highway 2A and Windsor Avenue	There is sufficient room within the existing road right-of-way to accommodate a 1.4 m (4.5 ft.) sidewalk on the north side between Highway 2A and Windsor Avenue.

Minto Street

Road Width: 11.6 m (38 ft.)
Sidewalk Width: 1.4 m (4.5 ft.)
Sidewalk Location: North & South sides of Minto Street

The southern portion between Highway 2A and Robinson Avenue has treed boulevards with 1.2 m (4 ft.) sidewalks and a 1.8 m (6 ft.) boulevard separating the sidewalk from the street

Minto Street is an important east-west connector from Highway 2A into the Industrial developments on the west side, near the railway. This collector road does not continue beyond Robinson Avenue and is not an ideal road to support a bike lane; as Lucina Street as stated previously provides for better overall linkage throughout the Town, including employment and commercial destinations.



Figure 23: Minto Street (facing east @ Fleming Avenue)

Newton Drive

Road Width: 11.6 m (38 ft.) – 15 m (49 ft.)
Sidewalk Width: 1.2 m (4 ft.) - 1.8 m (5.9 ft.)
Sidewalk Location: East & West sides of Newton Drive

Newton Drive is a major link to Jessie Duncan School and has various sidewalk widths and finishes. Sidewalk widths range from 1.2m (4 ft.) on the west side of Newton Drive to 1.8m (6 ft.) on the east side. Newton Drive also serves as a western access to Lincoln Street, which runs north of the Jessie Duncan School, the Splash Park, and the Lincoln Street Recreation Centre. A continuous sidewalk network or multi-use trail system should be provided to ensure safe active transportation for children to school.

The roadway in front of Jessie Duncan School was designed to be slightly wider than the rest of the roadway in order to accommodate on-street parking for student pick-up and drop-offs.

Constraints	Opportunities
No continuous sidewalk on the east side of Newton Drive	<p>Opportunity to continue the 1.8 m (5.9 ft.) trail along the east side of Newton Drive with the exception of north of Hayter Street since having a sidewalk there doesn't lend itself to creating an overall active transportation network.</p> <p>A multi-use trail should be developed between Elreg and Lee Street as this would not take away from the road width or right-of-way on the school property and would lend itself to providing a smooth and continuous linkage towards the school and park facilities.</p>
No dedicated bike lanes	Limiting on-street parking would provide room to accommodate a bike lane along the east side of Newton Drive; <i>alternatively</i> cyclists would benefit from a 2.5m (8.2 ft.) wide multi-use trail development along the east side of Newton Drive.



Figure 24: Newton Drive

Lincoln Street

Road Width: 11.6 m (38 ft.)
Sidewalk Width: 1.2 m (3.9 ft.)
Sidewalk Location: South sides of Lincoln Street

The Lincoln Street collector roadway connects east to west at Waskasoo Avenue to Newton Drive with sidewalks along the north side of the street. Lincoln Street is an important local collector roadway as it runs alongside major local destination locations geared towards young families.

The lack of sidewalk along the south side of Lincoln Street forces pedestrians to either walk alongside the street or cross to the north side of the street. This can be unpleasant for users as the destination locations such as Jessie Duncan School, the splash park and ice rink is on the south side of the street. The sidewalk along the north side of Lincoln Street will connect to the trail along Waskasoo Avenue.

Constraints	Opportunities
No continuous sidewalk or trail system along the south side of Lincoln Street	Opportunity to develop a 2.5m (8.2ft.) wide trail network on the south side of Lincoln Street connecting from Newton Drive to the Town's open space, splash park and ice rink.



Figure 25: Lincoln Street south side – opportunity for pathway development & connection



Figure 26: Lincoln Street – established sidewalk network along north side of the street

Windsor Avenue

Road Width: 12.2 m (40 ft.)
Sidewalk Width: 1.2 m (4 ft.)
Sidewalk Location: Treed boulevards on both east and west sides of Windsor Avenue at Grey Street towards Lucina Street & concrete from Lucina to Emma on the west side of Windsor Avenue

Windsor Avenue is an established mature street that provides residents residential and commercial destinations. Windsor Avenue has a continuous landscaped boulevard from Grey Street to Lucina Street. Street trees are an important element in creating aesthetically pleasing walkable environments for pedestrians. On-street parking also provides an additional buffer between pedestrians and the motorist.

Constraints	Opportunities
Quality and aesthetics of the sidewalk network along Windsor Avenue, north of Lucina Street is significantly sparse in streetscape appearance	Opportunity to repair and create a more attractive streetscape design through repairs and replacement of damaged sidewalks
No sidewalk curb roll and disconnect of sidewalk quality	Opportunity to develop a continuous sidewalk system and install curb rolls as the sidewalks are replaced.



Figure 27: Windsor Avenue

3.5 Minor Collector Roadways (Local Streets)

Local streets cater to low volume and low speed traffic, bike lanes are typically not necessary, however there may be opportunity to create a bike lane along Grey Street which would serve as a direct link to Tranquility Park and Fleming Marsh.

Sidewalks should be provided on both sides of the street and a physical separation such as a planted boulevard is not necessary due to the low volume and speed of traffic along these streets. Where there are areas of non-continuous sidewalk systems along some of the local streets, there is opportunity to create a more vibrant friendly streetscape.

Grey Street

Grey Street is a shorter local collector road on the west side of Highway 2A. Grey Street is important for connecting from the major arterial road to the industrial developments at the west side of Town. Sidewalks can be found on the south side of Grey with a majority of residents utilizing this route to access the crosswalk across Highway 2A to Tranquility Park and other desirable destinations located on the east side of Highway 2A.

Constraints	Opportunities
No continuous sidewalk along the north side of Grey Street	Opportunity to develop a 1.8 m (5.9 ft.) wide sidewalk along the north side of Grey Street as a continuous sidewalk provision to the marked crosswalk at the corner of Grey Street and Highway 2A.



Figure 28: Grey Street

3.6 Consideration for Future Bike Lanes

Under the *Highway Traffic Act*, bicycles are recognized as vehicles. Cyclists are permitted to ride on roadways. Bicycles are lightweight and therefore more susceptible to irregularities in road conditions. Maintenance of the roadway is essential (removal of debris) to ensure high level of comfort and safety. The design of bicycle lanes should be well connected to desirable destinations and provide visibility of the cyclist.

When considering future bicycle lanes along collector streets, bike lanes should be a minimum of 1.2 m (4 ft.) and striped in the presence of on-street parking. A marked 1.8 m (5.9 ft.) wide bicycle lane width with curb would be ideal to allow for additional clearance between cyclists and opening car doors. A marked or stencil painted lane on the roadway offers an alternative to a physical separation and is also considered being a cost effective measure for introducing bicycle friendly streets.

Should future bicycle lanes be considered along Robinson Avenue, as there are sections of road width measuring 20 m (66 ft.) The option may also be extended to restrict parking to either side of Robinson Avenue. However, this scenario could cause confusion on where on-street parking is allowed and bicycle traffic would be weaving back and forth into the travel lane thereby causing some concern.

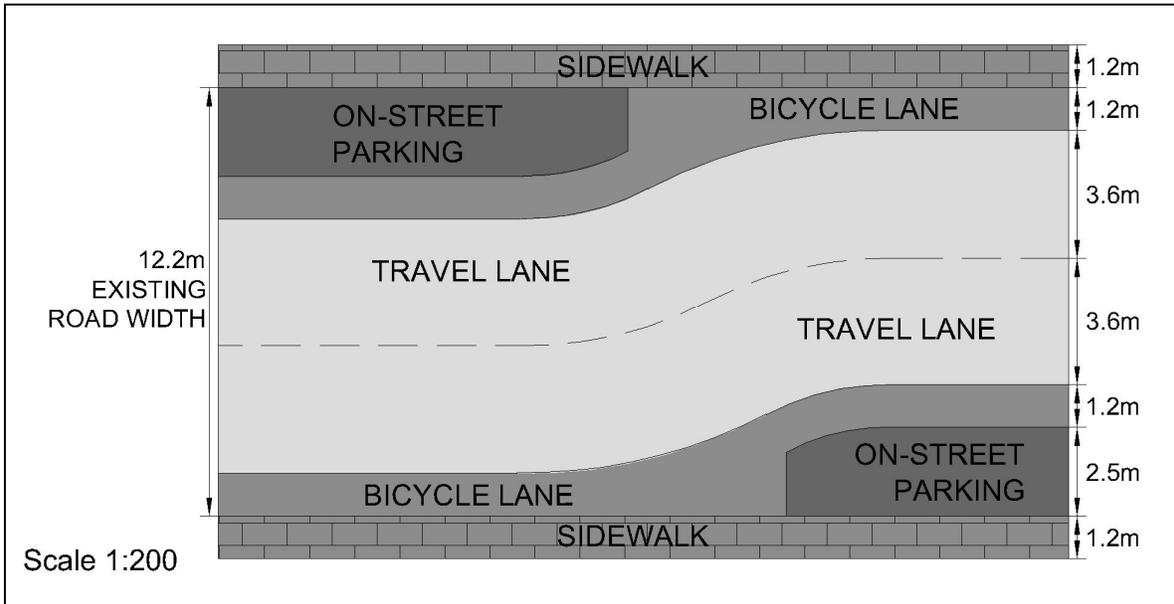


Figure 29: Example of a proposed future bike lane along Robinson Avenue (north)

4.0 Trail Network

4.1 Existing Trails and Pathways, Issues and Conditions

There are a number of asphalt and gravel trails throughout the Town's parks, open spaces and recreation areas. Map 5 identifies the current trail and pathway inventory throughout the Town.

Opportunities for trail and pathway improvements and restoration or extension of existing or disconnected trails are identified in Map 6. Map 6 further identifies gravel pathways which would greatly benefit from improvements and upgrades to an asphalt trail system. While these gravel pathways provide connectivity, an upgrade to asphalt would provide users with more options for use, greater mobility options while continuing to promote and encourage active use.

The 2.5m (8.2 ft.) wide asphalt trails provide connection to major points of interest throughout Town and are located within open park spaces and along collector roadways. Asphalt trails are considered to be major pedestrian connectors to points of interest. The surfacing of these trails provide for multiple uses such as in-line skating, walking, cycling, those in wheel chairs or for stroller use. These popular multi-use trails are proposed along major collector roads throughout Town and within the various subdivision open spaces such as Oxford Landing, Hawkridge Estates, Waskasoo Avenue and the Palisades. When designing and building new asphalt pathways along major arterial and collector roadways, meandering of the path should be considered as they often provide a higher level of landscaping requirements, which offers an additional feature to the pedestrian.



Figure 30: Waskasoo Avenue Multi-use Trail at Robinson Ave. & Waskasoo Ave. – south facing



Figure 31: 1.5 m (4.9 ft.) wide asphalt trail along Oxford Boulevard (north)



Figure 32: 2.5m (8.2 ft.) wide concrete sidewalk with landscaped boulevard in Oxford Landing



SECONDARY HIGHWAY 592

HIGHWAY 2A

HIGHWAY 42

HIGHWAY 2A

HIGHWAY 2A

HIGHWAY 2A

Fleming Marsh

BOUNDARY ST

VETERANWAY

ASSINIBOINE



Map 5: Trails and Pathways Inventory

Legend

- Crosswalk
 - Playgrounds
 - Designated Park
- Park and Open Space Classification**
- Environmental/Municipal Reserve
 - Public/Community Service
 - Public Utility Lot (PUL)
- Trail**
- Trail, Asphalt,
 - Trail, Gravel, Existing
 - Trail, Proposed
 - Trail, Extension Opportunity

There are several 1.5m (4.9 ft.) wide crushed gravel pathways located along pipelines and in and around the open spaces. These lower maintenance pathways were developed to accommodate the pedestrian and the cyclists. Strollers, in-line skaters and those in wheel chairs have more difficulty navigating these trails and they do not accommodate for the smaller wheels. Gravel pathways are considered to be lower maintenance since they help to reduce erosion and provide a designated route.



Figure 33: Gravel Trail along Lucina Storm Pond

There are several areas within the open spaces and recreational areas where there is no trail or pathway provided to the user and as such, natural pathways are created by the user accessing a desired destination and that has not been formally connected or identified. Areas where a natural pathway has been created increases the potential for erosion and potential drainage issues of the site as the permeability of the soil becomes less as the compaction of the ground becomes more present.

4.2 Opportunities for Trail and Pathway Improvements

Trail networks are an important amenity to a community as they connect people to their destinations. When trails are well planned and maintained they function well for connectivity they become an efficient and excellent connector for its users. Within the Town's trail network, there are several opportunities for improvement.

Map 6 provides an overview of the Town's existing trails and pathways and identifies recommended locations for improvement and opportunities.

Opportunities for trail and pathway improvements within Town include:

1. *Trail extension at Lucina Street and Maplewood Boulevard*

Along Lucina Street, the sidewalk is complete at the south side. The sidewalk at Maplewood Boulevard stops once it reaches Lucina Street at the north side. There is an opportunity to create a connecting asphalt trail from the corner of Maplewood Boulevard and Lucina Street towards the existing trail system around the Lucina storm pond, providing for a complete pedestrian connection.



Figure 34: Sidewalk at the corner of Maplewood Boulevard and Lucina Street – opportunity to extend a trail east towards the existing trail within the open space area

2. *Lucina Street Storm Pond Trail Network*

The trail around the Lucina storm pond is gravel which is not comfortable for pedestrians to walk and creates challenges to those with limited mobility. Upgrading the existing gravel trail network to an asphalt trail would accommodate multiple modes of pedestrian uses.



Figure 35: Lucina storm pond – gravel trail



Figure 36: Gravel trail network around the Lucina Storm pond – opportunity to upgrade existing gravel trail to asphalt



Figure 37: Lucina storm pond & open space park

3. *Lucina Street (east of Maplewood Boulevard and west of Waskasoo Avenue)*

Another connection opportunity is at the north side of Lucina Street at Waskasoo Avenue. An asphalt trail development along the top of the north side berm at Lucina Street from Waskasoo Avenue towards the Lucina storm pond trail system would reduce the number of times pedestrians would be required to cross Lucina Street, as well as provide a connection to the a number of multi-use trails. Currently, pedestrians are required to cross at the south side of Lucina Street when travelling towards Waskasoo Avenue.



Figure 38: Corner of Lucina Street & Waskasoo Avenue

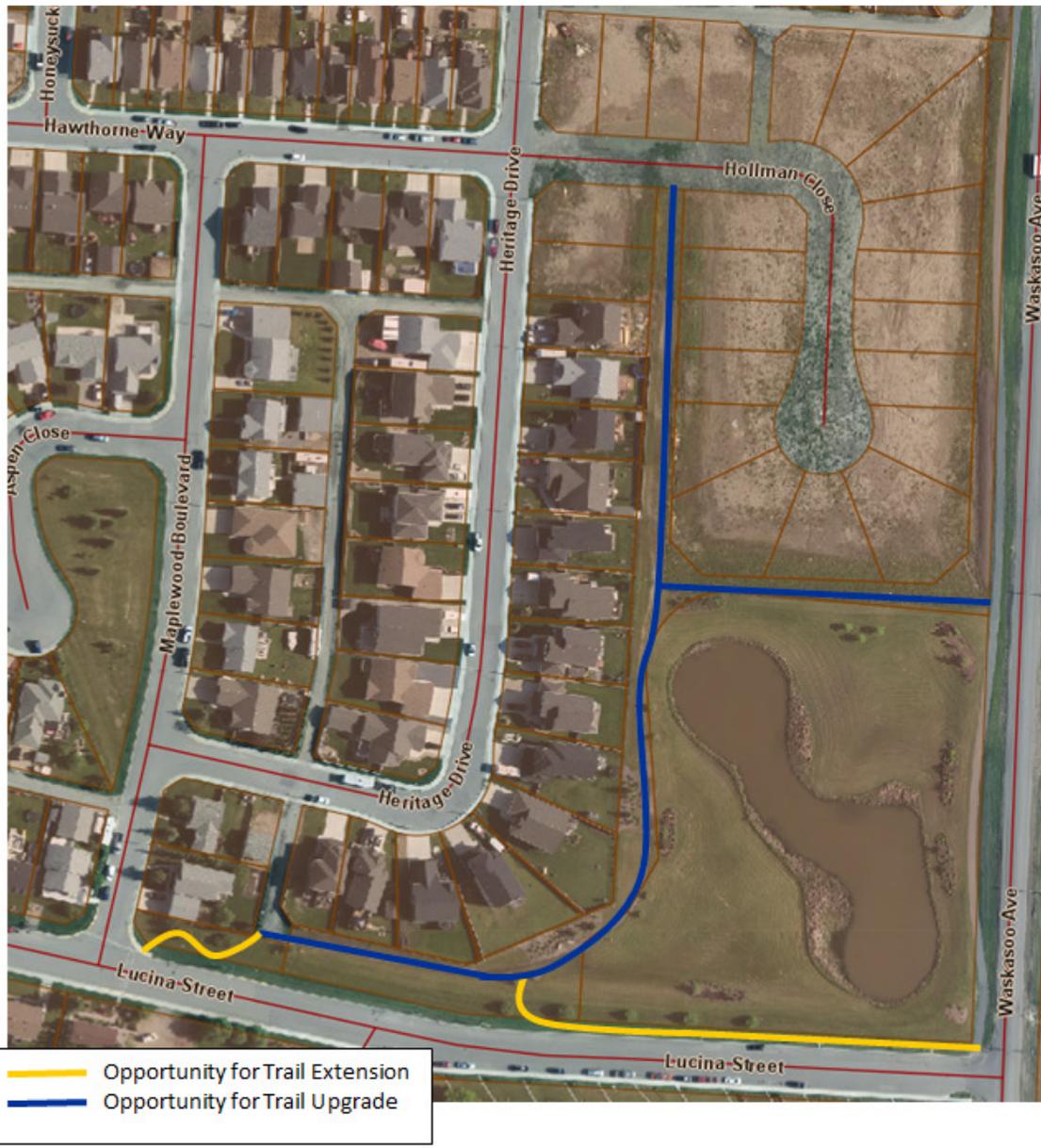


Figure 39: Extend a meandering asphalt trail along the north side of Lucina Street berm from Maplewood Boulevard towards Waskasoo Avenue

4. *Hawkrige Boulevard (north/south pipeline trail)*

There is an opportunity to upgrade and improve the existing gravel trail to an asphalt trail. This trail extends north to south along the pipeline at Hawkrige Boulevard towards the alley at the north side of Lucina Street. The trail network is currently a gravel pathway, which creates challenges to some pedestrian users with limited mobility such as the use of wheelchairs, strollers or inline skates. Upgrading this trail network from gravel to asphalt would accommodate the abilities of all users.



Figure 40: Opportunity to upgrade the existing gravel trail to an asphalt trail at Hawkrige Boulevard connecting south towards Lucina Street.

5. *Lucina Street (public utility lot)*

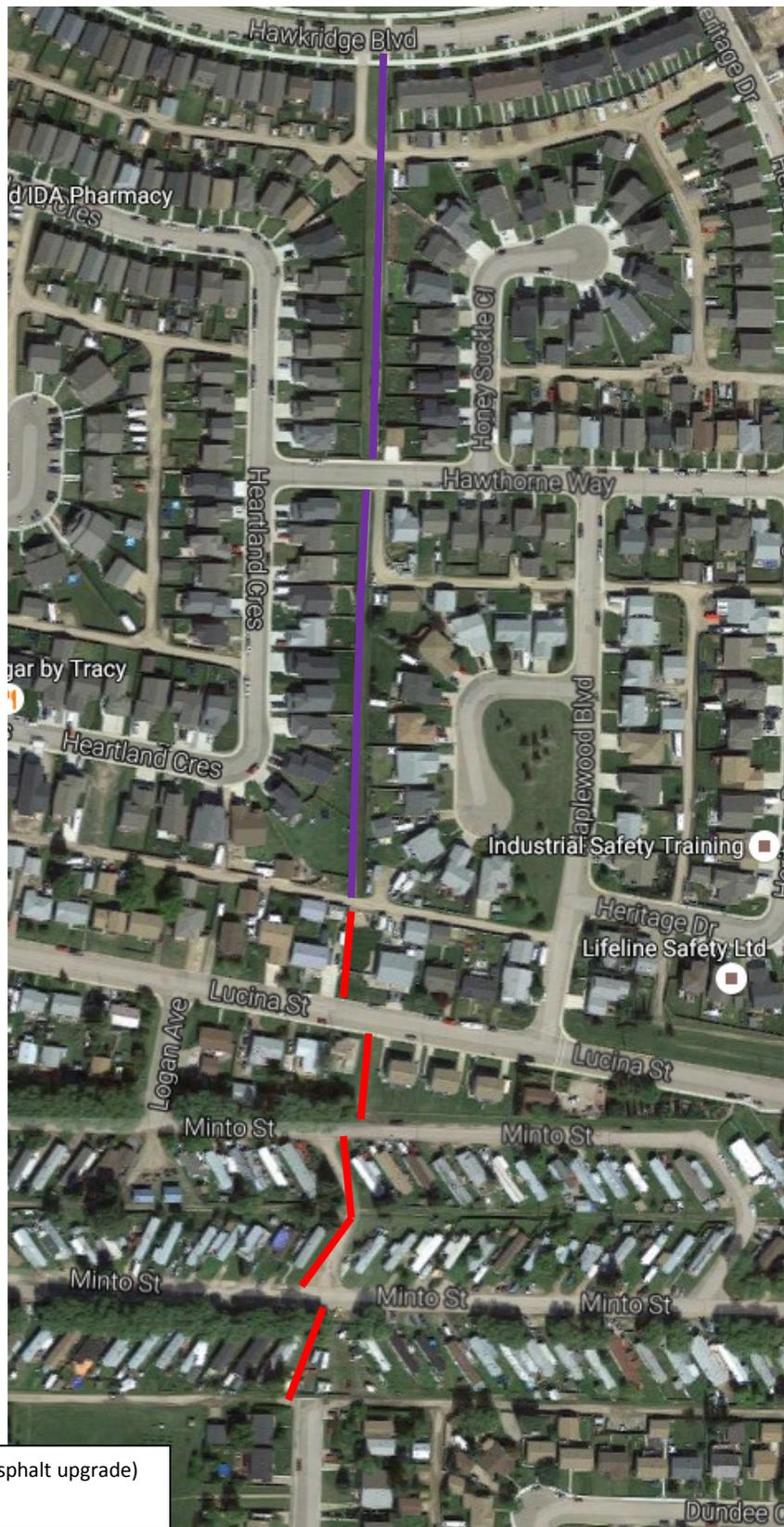
Upgrading the existing gravel north/south multi-use asphalt trail through to the Lucina Street public utility lot would provide for alternative pedestrian connection opportunities directly north and south, adjacent to the Waskasoo Avenue multi-use trail. This north/south trail connection through the Lucina Street public utility lot would connect to the existing Hawkrigde pipeline trail system. The existing trail along this pipeline currently ends at the lane directly north adjacent to this public utility lot. A painted crosswalk would be required at the end of this trail extension to allow pedestrians to continue along Lucina Street along the south side.

The Lucina Street public utility lot was leased to the adjacent landowner, however the Town may request that the agreement be terminated as there is a proposed use for the site for the overall betterment of the Town.



Figure 41: Lucina Street Public Utility Lot

As a further extension of the Hawkrigde Boulevard pipeline trail, the future extension of the north/south connection could potentially cross at Lucina Street at a painted crosswalk and connect through the manufactured home park to Newton Drive. This proposed north/south pipeline trail development would assist to complete and provide an alternative pedestrian route from developments in the north and south.



- Existing Gravel Trail (proposed for asphalt upgrade)
- Opportunity for Trail Extension

Figure 42: Potential North/South Hawkridge Boulevard Pipeline Trail Extension

6. *Lucina Street & Highway 2A*

The completion of this sidewalk along the south side of Lucina Street is important as it provides a setback to the pedestrian from traffic and ensures the pedestrian is able to reach the crosswalk at Highway 2A safely.



Figure 43: Corner of Lucina Street & Highway 2A 0 incomplete sidewalk.

7. *Robinson Avenue*

During the sidewalk inventory collection, it was noted that there are no sidewalks along the west side of Robinson Avenue between a portion of Lucina Street and Minto Street through to Douglas Street. Although not warranted, sidewalk development along this portion of roadway would be highly desirable as there is access connection to Tranquility Park at the west side of Robinson Avenue.

With the proposed asphalt trail network to be shaped through Tranquility Park, the development of a continuous sidewalk or asphalt trail connection along the west side of Robinson Avenue to Tranquility Park would provide pedestrians a barrier free travel opportunity. However with the road width of Robinson Avenue, there are a number of alternative pedestrian redevelopment opportunities available.

One pedestrian development opportunity would be the consideration for completing the sidewalk along the west side of Robinson Avenue between Lucina Street and Minto Street. This pedestrian connection could continue south as an asphalt trail from Minto Street to Douglas Street, passing and connecting at Tranquility Park. Further, the road width and utility-right-of-way for this section of Robinson Avenue would provide for sufficient space.



Figure 44: Robinson Avenue at Minto Street (south facing)



Figure 45: Robinson Avenue at Lee Street (north facing)

The second alternative would be to redesign several separate sections of Robinson Avenue. The first section would start at Lucina Street to Minto Street and again at Minto Street to Douglas Street. With consideration of the road width, there is an opportunity to create a more balanced and complete streetscape whereby Robinson Avenue would be fashioned in a manner that meets the needs and compliments both the motorist and the pedestrian through a functional and aesthetically pleasing streetscape.

This functional and aesthetically enhanced streetscape may be achieved through the development of safe travel routes for the motorist and pedestrian. Traffic calming measures such as expanded street corners provide space for defined pedestrian space through place making elements such as bollards, planters, landscaping and benches. The road width of Robinson Avenue could further accommodate the implementation of sidewalks to extend the entire length of Robinson Avenue or facilitate alternative methods of transportation such as bike lanes.

The Town's Streetscape and Design Guidelines can provide better direction, suggestions and methods when consideration the streetscape design upgrade for these sections along Robinson Avenue.

8. Tranquility Park

Tranquility Park is a serene open space within the Town with no defined trails that allow pedestrians to move fluidly to their destination. Pedestrians have made their own pathways within the grassed areas of the park. The current development of the asphalt trail within the park provides an opportunity for an enjoyable pedestrian route across the park towards Highway 2A and Robinson Avenue.



Figure 46: Asphalt trail development opportunity within Tranquility Park



Figure 47: Tranquility Park (before the asphalt trail development)



Figure 48: Tranquility Park (current construction of the asphalt trail)

9. *Robinson Avenue (at Tranquility Park)*

With the proposed 1.5 m (4.9 ft.) asphalt trail development proposed to connect through Tranquility Park, it would be highly recommended to continue the asphalt trail south along Robinson Avenue towards Douglas Street. By extending this asphalt trail network from the park, it will provide pedestrians a continuous connection from the park to a designated crossing point across Robinson Avenue towards Lee Street.



Figure 49: Robinson Avenue and Douglas Street

10. Lincoln Street

Newton Drive is a major link to Jessie Duncan School with many opportunities to link pedestrian networks to the school to ensure safe active transportation routes. Newton Drive serves as a western access to Lincoln Street, which runs north of the Jessie Duncan School, the splash park, skating rink and the Reg Newton Recreation Centre.

There are several opportunities for pedestrian commuting improvement along Lincoln Street Park. The first opportunity would be to develop a 1.5 m (4.9 ft.) asphalt trail along the south side of Lincoln Street from Newton Drive towards Dundee Crescent. The Current crosswalk at Dundee Crescent and Lincoln Street connects to a man-made pathway at the south side of Lincoln Street. By providing an asphalt pathway, it would allow for opportunities to multiple users to the school and adjacent park system.



Figure 50: Opportunity to create a connecting asphalt trail from the corner of Newton Drive and Lincoln Street east towards the park system



Figure 51: South side of Lincoln Street – opportunity to connect a trail to the crosswalk



Figure 52: Corner of Dundee Crescent and Lincoln Street – crosswalk to Jessie Duncan School & park amenities

Access and connectivity of these areas are highly desired as the development of an identifiable and useable trail system would provide an enormous amount of opportunity to its potential and existing users. Pedestrians often seek the shortest and best possible routes when travelling to their desired destinations. There are many opportunities within Town to improve existing trails and sidewalk connectivity to provide an enjoyable and pleasant commute.



Figure 53: South side of Lincoln Street at the school yard entrance

The second opportunity for pedestrian movement improvement would be to continue the asphalt trail extension along the south side of Lincoln Street the crosswalk at Dundee to the amenities at Newton Park. Providing this trail along the south side of Lincoln Street will assist to reduce the number of times the pedestrian is required to cross in route to their destination.



Figure 54: Trail development opportunity along the south side of Lincoln Street

11. *Newton Drive (south of Jessie Duncan School)*

Although there is continuous sidewalk along the west side of Newton Drive, an asphalt trail development parallel to Newton Drive within the open space would provide for beneficial pedestrian connection to the school.

The sidewalk along Newton Drive does not continue south towards Mann Drive from the school due to the location of a high pressure gas line located on the east side of Newton Drive. This disconnect of the pedestrian network creates challenges to students and residents needing to utilize the direct path to the school. These challenges are known significantly during the winter months with direct obstacles created by the snow.

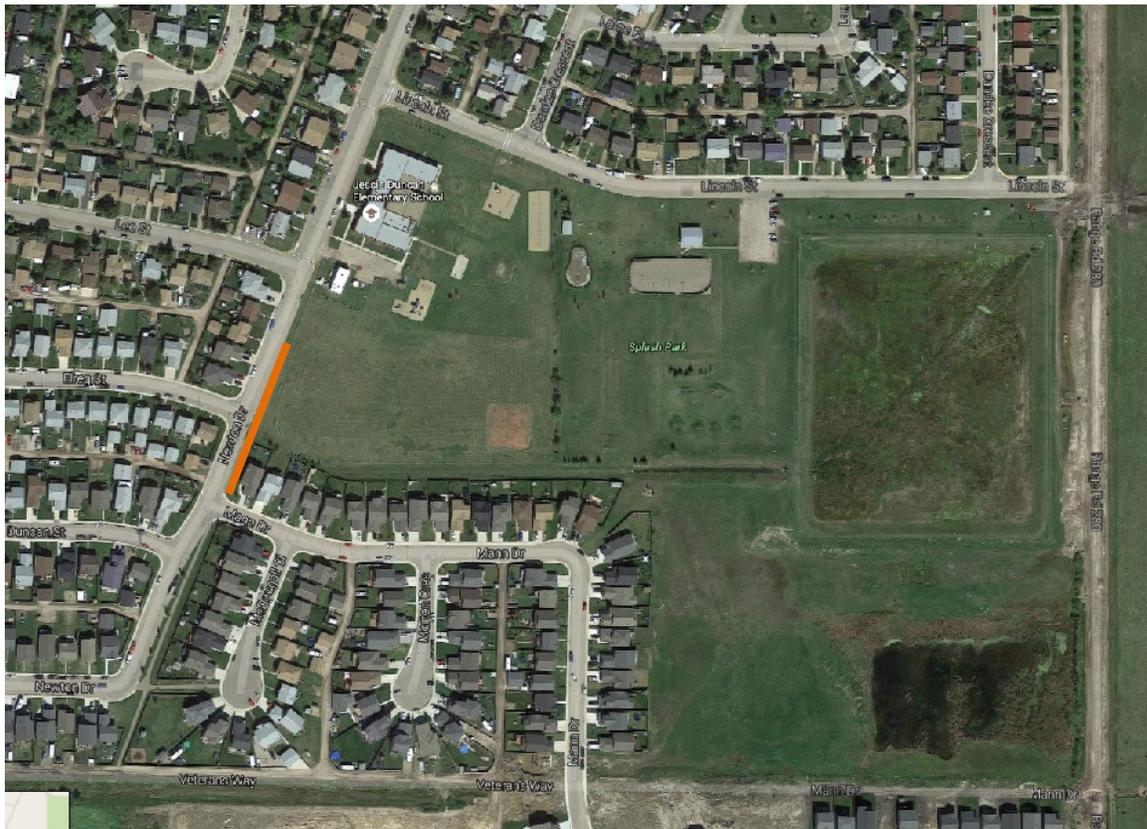


Figure 55: Trail development opportunity along the east side of Newton Drive

12. Lincoln Street (Newton Park & Storm Pond)

Consideration should be made for the development of an asphalt trail network connecting at Newton Park south towards through the open space park and east towards Waskasoo Avenue. This connective pedestrian trail will provide for opportunities for pedestrians to connect to residential developments at the south and to the amenities of the Newton Family Park and Waskasoo Avenue.

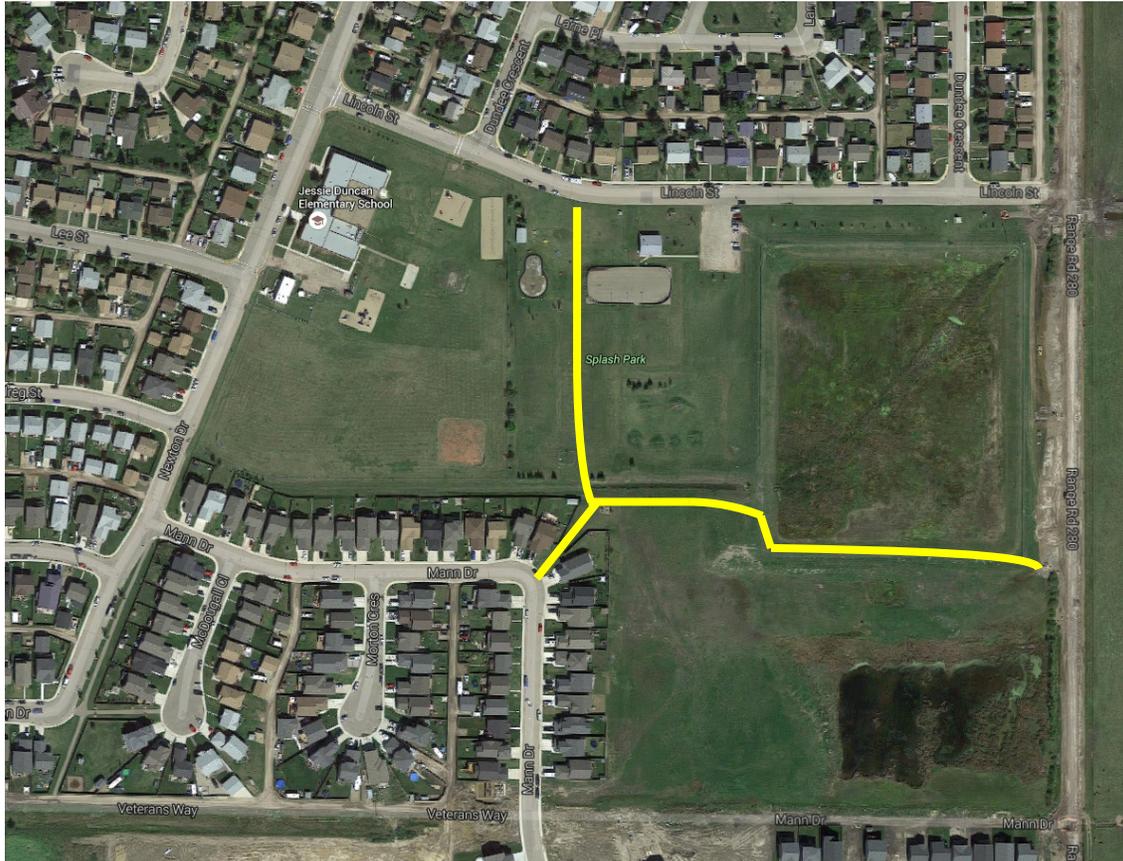


Figure 56: Opportunity to develop a connecting trail from the development in the south and Waskasoo Avenue with the amenities at Newton Park.

11. *Lee Street*

Lee Street contains a paving stone sidewalk along both sides of the street. The paving stone sidewalk connection is incomplete along the south side of Lee Street approaching Newton Drive.

When considering the future of Lee Street with regards to existing pedestrian infrastructure, consultation and discussions with the residents of Lee Street should be considered for the removal of the paving stones in its entirety along the south side of Lee Street and the replacement of the paving stones with concrete sidewalks along the north side of Lee Street. Upon completion of future discussions with the residents of Lee Street, a formal recommendation can be provided for this section of active transportation.



Figure 57: Lee Street south side (west facing)



Figure 58: Lee Street south side (east facing)

14. *Waskasoo Avenue (east at Hawkridge Boulevard)*

Along Waskasoo Avenue, the multiuse trail provides opportunities for cyclists to join and share the route with the pedestrian without conflict. Travelling north along Waskasoo Avenue north is challenging as there is no continuous pathway available.

The existing asphalt trail begins mid-way within the Multiplex parking lot and does not lend itself to easy accessibility to students traveling to the Penhold Secondary School. Students currently use the marked trail within the Multiplex parking lot and create their own manmade shortcuts within the grassed boulevard. The extension of the trail should run the entire length of Waskasoo Avenue from Highway 42 to the parking entrance way along Waskasoo Avenue.



Figure 59: East side of Waskasoo Avenue – trail extension opportunity

Further, with the future recreation development around the Penhold Multiplex and Penhold Secondary School, there is the desire to accommodate pedestrian travel in the better manner possible. The development and continuation of the 2.5 m (8.2 ft.) wide asphalt trail along the east side of Waskasoo Avenue lends an optimal situation that will allow students, residents and visitors a complete travel network from one destination to another. This trail will decrease the number of times a pedestrian may need to cross Waskasoo Avenue and would provide them with a clearly identified route of transport.

The detailed design of the recreational open space has not been finalized as of yet, but it is proposed to have a setback distance from the roadway that would allow for the asphalt trail development. Providing a designated asphalt trail will decrease the desire to create manmade trails in undesirable locations. The extension of the current trail along the east side would also provide for safe accessibility to the recreational amenities, open space, school and the multiplex. To support for this pedestrian linkage, future consideration should also be given for the removal of the overhead powerlines along the east side of Waskasoo Avenue.



Figure 60: East side of Waskasoo Avenue adjacent to the Penhold Secondary School

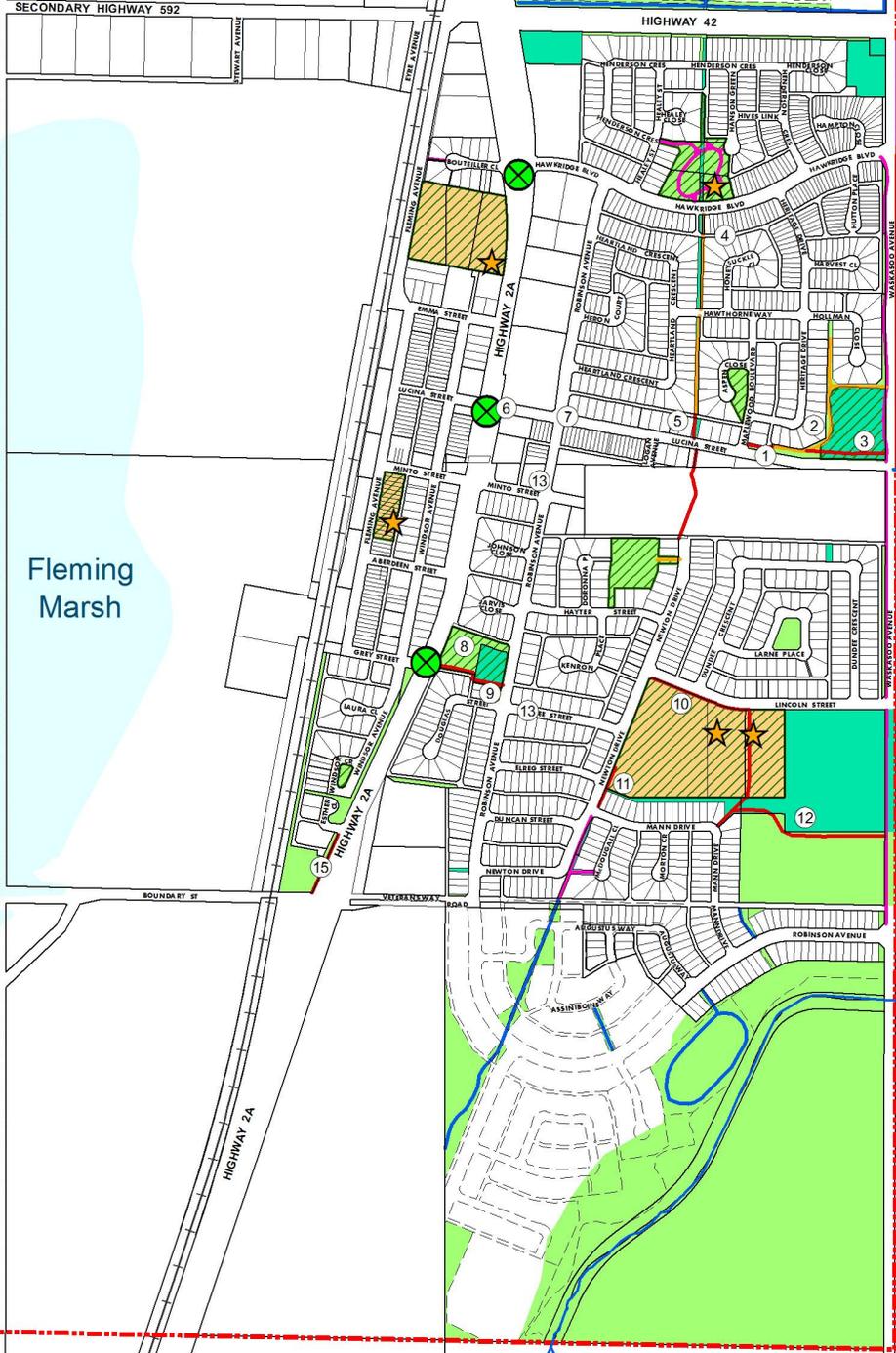
15. *Esther Close (municipal reserve south)*

The municipal reserve located along the west side of Highway 2A and south of Esther Close provides an opportunity to develop an asphalt trail to Town amenities such as the Museum and Ice Cream Shop.



Figure 61: Municipal Reserve located south of Esther Close

- 1) Lucina Street & Maplewood Boulevard
- 2) Lucina Street Storm Pond Trail Network
- 3) Lucina Street (East of Maplewood Blvd.)
- 4) Hawkrigde Boulevard (North & South Pipeline Trail)
- 5) Lucina Street (Public Utility Lot)
- 6) Lucina Street & Highway 2A
- 7) Robinson Avenue
- 8) Tranquility Park
- 9) Robinson Avenue (Tranquility Park)
- 10) Lincoln Street
- 11) Newton Drive (South of Jessie Duncan)
- 12) Lincoln Street Storm Pond
- 13) Lee Street
- 14) Waskasoo Avenue (East of Hawkrigde)
- 15) Municipal Reserve (South of Esther)



Map 6: Trail Improvements/ Opportunities

Legend

- Crosswalk
- Playgrounds

Trail

- Trail, Asphalt, Existing
- Trail, Gravel, Existing
- Trail, Proposed
- Trail, Extension Opportunity

Designated Park

Park and Open Space Classification

- Environmental/Municipal Reserve
- Public/Community Service
- Public Utility Lot (PUL)



Date Saved:
Sep. 16, 2016



5.0 Streetscape Enhancement Opportunities

Part of planning for the pedestrian communities is having well-designed and interesting walking environments that cater to all abilities. The enhancement of the environment is important and can be done by providing street furniture such as benches, pedestrian street lighting and garbage receptacles along major sidewalk and trail networks, including within parks and open spaces. Street furniture is often designed to benefit pedestrians and to enhance the pedestrian environment.

Landscaping design, design of walking surface texture, street furniture and placement enhances the pedestrian environment by creating visual interest and encourage greater pedestrian use. When considering street furniture placement, the color, style and design should complement the surrounding environment in which it is to be located and should fulfill its intended use.

Map 7 identifies areas within the Town's trail network that may benefit from having additional streetscape amenities.



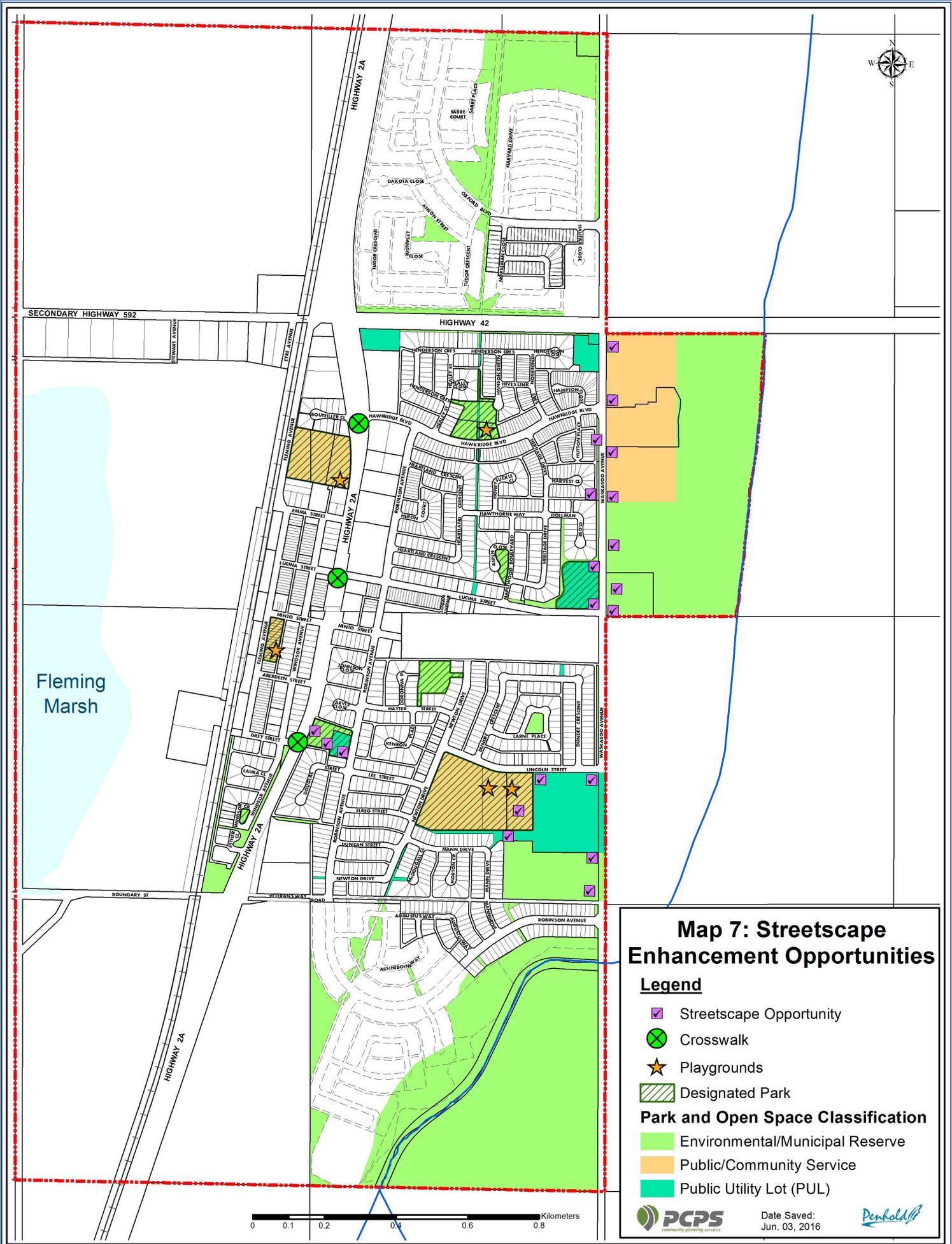
Figure 62: Town of Penhold garbage can located along the Waskasoo Avenue multi-use trail



Figure 63: Standard wooden park bench



Figure 64: Standard Street Furniture located at Hawkrige Boulevard Playground



Map 7: Streetscape Enhancement Opportunities

Legend

- Streetscape Opportunity
- Crosswalk
- Playgrounds
- Designated Park

Park and Open Space Classification

- Environmental/Municipal Reserve
- Public/Community Service
- Public Utility Lot (PUL)



Date Saved: Jun. 03, 2016



6.0 Facilitating Safe Year-Round Active Transportation

Although we can't control the weather in central Alberta, there are ways to make active transportation a more attractive alternative/option during our long, cold winters and inclement weather. Year round access to these opportunities is a key factor to the success of the active transportation plan development.

Some options to promote year-round use of the Town's trail network would be to consider:

- Identify and implement winter maintenance for pedestrian commuter routes;
- Implement snow removal strategies for major trails network during the winter months;
- Ensure that all active transportation systems are designed to avoid poor drainage, blind corners and steep slopes;
- Maintain trails and sidewalks to encourages year-round use, including keeping sidewalks and trails free from snow and ice in the winter;
- Ensure a barrier-free transition at crossing points for pedestrians using skateboards, wheelchairs or pushing strollers;
- Provide distance between the pedestrian and motorist through the design of separate sidewalks with landscaped boulevards;
- Provide opportunities for winter-specific modes of active transportation – cross-country skiing and snowshoeing within the trail systems;
- Promote events, festivals and recreational activities that encourage active participation in the community.

Year round accessibility and maintenance of active transportation networks is important for the year round well-being of its users. During the winter months, accessibility to active transportation routes becomes increasingly important. It is important to continue to find ways to manage and maintain accessibility opportunities to encourage active participation. By providing these opportunities, it creates a safety and convenience for people to continue to participate in the use of the active transportation system year round.

Map 8 provides an overall picture of the town's current active transportation system.



SECONDARY HIGHWAY 592

HIGHWAY 2A

HIGHWAY 42

HIGHWAY 2A

HIGHWAY 2A

HIGHWAY 2A

Fleming Marsh

Map 8: Transportation Systems

Legend

- Crosswalk
- Playgrounds
- Existing Multi-Use Trail
- Multi-Use Trail Opportunity

Trail

- Trail, Asphalt, Existing
- Trail, Gravel, Existing
- Trail, Proposed
- Trail, Extension Opportunity

Sidewalks

- Concrete
- Concrete With Boulevard
- Pavers
- Tread
- None
- Sidewalk Extension
- Designated Park

Park and Open Space Classification

- Environmental/Municipal Reserve
- Public/Community Service
- Public Utility Lot (PUL)



Date Saved: Sep. 16, 2016



7.0 Implementation & Strategies

Whenever possible, complete streets should be designed, implemented and maintained. Complete street designs cater to all ages and abilities of the pedestrian in collaboration with vehicles and roadways. Pedestrian networks for new subdivisions and existing developments should be designed in a manner that provides for the shortest and most direct travel route possible for the pedestrian. Incomplete and disconnected pedestrian networks should be identified and completed with consideration given to the multi-use trails along major collector roadways.

Active transportation systems are encouraged to be designed around scenic and interesting sights. Implementation for the improvement of the proposed trails, sidewalks and pathways are evaluated based on community needs, pedestrian usage and available funding.

Active Transportation Policies:

1. Estimate costs and budget for pedestrian infrastructure improvements.
2. Create and promote active transportation within the community.
3. Ensure complete street and pedestrian connectivity whenever possible.
4. Whenever possible, create interesting streetscapes for pedestrian travel.
5. Ensure that pedestrian networks and connections are accessible and complete, specifically for trails leading to playgrounds, recreational facilities and open spaces.
6. Provide pedestrian level-street lighting that improves the visibility, comfort and security of the pedestrians.
7. Create a sense of place and visibility for pedestrians through the placement and use of street furniture, landscaping and urban design.
8. Consideration for the implementation of Crime Prevention through Environmental Design (CPTED) strategies.
9. Provide a community area map which includes destinations of interest and trail networks within Town.
10. Whenever possible, develop balanced streetscapes which consider both the motorist and the pedestrian.

Suggested timeframes for development and improvements, including the implementation of the active transportation strategies may take place over a period of time. Short-term action items would include those projects that provide connection opportunities and are immediately remedied. Longer-term action items would include those projects that would provide benefit and opportunity to the Town over time, but are not immediate.

The following proposed improvements are currently under construction or have been identified to be completed within a **short-term** time period.

1. Upgrade *all* existing gravel trails/pathways within Town to asphalt trails/pathways
2. Tranquility Park – development of a meandering asphalt pathway through the park.
3. Tranquility Park – development of an asphalt trail extension from the park south along Robinson Avenue towards Douglas Street.
4. Lucina Street (east of Highway 2A) - sidewalk extension on the south side of Lucina Street, east of Highway 2A to the crosswalk.
5. Waskasoo Avenue (east at Hawkridge Boulevard) – develop a meandering asphalt trail connecting to existing pathway towards Highway 42
6. Lucina Street and Maplewood Boulevard – develop an asphalt trail connecting into the existing trail around the Lucina Street storm pond
7. Newton Drive & Lincoln Street – develop an asphalt trail at the end of the sidewalk along the south side of Lincoln Street to the existing crosswalk at Dundee Crescent
8. Esther Close (municipal reserve south) – develop an asphalt trail within the municipal reserve west of Highway 2A and south east of Esther Close towards the Museum
9. Lee Street (north & south) – consultation with residents of Lee Street for future removal of paving stones along the south side of Lee Street, removal and replacement of paving stones with concrete sidewalks along the north side of Lee Street

The **long-term** timeframe for active transportation improvements may include the following projects:

1. Hawkridge Boulevard (north/south pipeline trail network) – extend trail network south through the Lucina Street public utility lot
2. Lincoln Street (east of crosswalk at Dundee Crescent) – develop an asphalt trail along the south side of Lincoln Street to Newton Park
3. Lincoln Street (Newton Park & Storm Pond) – develop an asphalt trail that extends at Newton Park south towards the developments in the south and east to Waskasoo Avenue

Additional considerations may be given for **future** improvements to the active transportation networks. These projects may include:

1. Lucina Street (north side) between Maplewood Boulevard & Waskasoo Avenue – develop a meandering asphalt trail along the top of the berm connecting into the existing Lucina Street storm pond trail system
2. Hawkridge Boulevard (north/south pipeline trail network) – consideration for further extension through the existing manufactured home park to Newton Drive
3. Newton Drive (south of Jessie Duncan School) – develop an asphalt trail along the east side of Newton Drive connecting at Elreg Street to Lee Street where the existing sidewalk is located
4. Robinson Avenue – consideration for future streetscaping, narrowing and pedestrian enhancement

8.0 Evaluation & Monitoring

Moving forward, Town Council will need to discuss priority and budgets relating to the proposed projects within each of the categorized timelines.

As the Town continues to grow and development continues to expand pedestrian networks and complete street designs identified improvements may require re-evaluation of priority and long-term future projects. Complete street and pedestrian networks connecting to desired destinations within Town will provide a direct method for evaluating the success of pedestrian connections. Periodic reviews of these overall pedestrian networks, connections and designs, including implementation policies will need to be done to ensure opportunities for improvements to the Town's active transportation network are identified.

9.0 Summary

The Town of Penhold continues to experience an increase in its residential population. With the 2014 Municipal Census indicating the Town's population was 2,842. This was a significant increase from 1,750 in 2004 or a 5.11% per year growth rate on average during the last 10 year time period. As the Town's continues to grow and motorized transportation will remain a dominant present, pedestrians cannot be forgotten. To ensure that opportunities for our community to live healthy and active lifestyles, planning and well-thought out pedestrian transportation routes will be required.

Proper planning for year-round sustainable, interconnected, user friendly active transportation network promotes and encourages a community to be active, mobile, healthy and inclusive. Ensuring that pedestrian networks are well thought out and are developed to provide continuous barrier free routes whenever possible it highly encouraged. Proper planning, maintenance and attention to these pedestrian connections and amenities encourage people to choose an active lifestyle.

The Active Transportation Plan will provide an inventory and recommended opportunities for improvement to existing transportation modes within the Town boundaries. One overall goal of the Active Transportation Study is to improve the Town's pedestrian trails and sidewalk network connections to areas of interest throughout town in hopes that it will provide the encouragement for people to continue to live an active lifestyle. The Active Transportation Study also continues to build upon interesting pedestrian connection opportunities and adapt to different types of lifestyles and mobility.

Moving forward, to ensure a more detailed and cohesive active transportation system, a formal set of active transportation policies, guidelines and priority implementation for future development and redevelopment of areas within Town should be established. This may take form of developing more in-depth interconnected streetscapes with trees, sidewalks and pedestrian priority leading the process.

As the Town continues to grow, the active transportation plan, projects and existing infrastructure will need to be periodically evaluated. Through continuous review, monitoring and maintenance of the Town's active transportation plan, pedestrian networks and infrastructure will allow the Town to ensure that the community's needs are being met.

