City of Lloydminster

Final Report

Trails and Sidewalk Masterplan

March 2022

ISL Engineering and Land Services Ltd. is an award-winning full-service consulting firm dedicated to working with all levels of government and the private sector to deliver planning and design solutions for transportation, water, and land projects.

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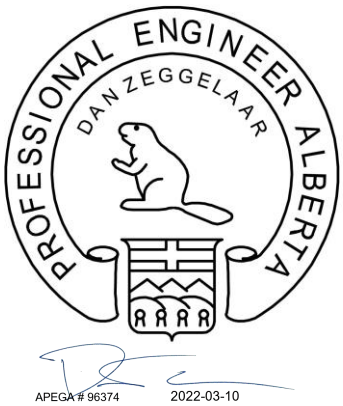

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1.0 Introduction

The City of Lloydminster thrives as the largest economic hub between the City of Saskatoon and the City of Edmonton, establishing itself as a regional centre providing recreational and cultural opportunities for a regional trading area of approximately 150,000 people. The City offers Bud Miller All-Season Park, Servus Sports Centre, Exhibition Grounds, Lakeland College, several schools, local parks, golf courses, and the downtown that highlight recreational and cultural activities and attract many regional visitors while servicing residents. Lloydminster is a northern Canadian City, and through its Municipal Development Plan (MDP) recognizes itself as a Winter City that allows residents to enjoy the City all year. This translates to treating trails and sidewalk connections as “all-season” transportation infrastructure providing good connections to various destinations for all types of trips, including commuting between areas and for recreational purposes.

In the region, the City and the County of Vermillion River, through the Intermunicipal Development Plan (IDP) recognize the opportunities for collaborating for trail development to leverage abundant quantities of open space in the County of Vermillion River region and potentially connecting to major destinations in the City. Existing collaboration between the City, RM of Britannia, and RM of Wilton, through the Lloydminster Planning District Commission (LPDC), provides the platform for identifying and implementing regional sidewalk and trail networks in the LPDC subject areas. Potential opportunities include connections from the future City development areas through the LPDC area and the Neale Lake area, which is considered a gem of a recreational facility in the region.

1.1 Project Objectives

Past efforts for planning a comprehensive trail and sidewalk network include components within the MDP, LPDC, IDP and the City’s Transportation Master Plan; however, a single focused study is the first for the City and the region. Understanding the needs and benefits of conducting this study helps for generating stakeholder, public, and administrative feedback for building the study outcomes, but educating these groups is an important early step to garner their understanding.

Key benefits for completing the study and allowing these group to understand the context are as follows:

- Engaging with internal and external stakeholders and the public to understand their needs for improving the existing trails and sidewalk network.
- Identifying gaps and opportunities for the existing trail and sidewalk network.
- Understanding conditions of existing networks, including surface, widths.
- Confirming local and regional aspirations for improving and/or expanding the local, and regional networks.
- Identifying potential alignments for local and regional networks for future planning.
- Providing direction for future land use planning studies for incorporating networks into their plans.
- Reviewing existing crosswalk safety and identifying prioritized needs for safety improvements.
- Establishing budgetary requirements for implementing changes to the network and crosswalk improvements for annual budgeting purposes.

1.2 Study Outline

The City's Trail and Sidewalks Master Plan was completed in four (4) phases, as follows:

- **Phase 1 Baseline, Internal Stakeholder Engagement, and Public Engagement Round One:** Review of existing plans and policies that affect the plan development review current practices for maintaining and expanding the network, and review similar studies conducted by other municipalities through the best practices review. The baseline also includes engaging with internal stakeholders and the public to develop a draft project vision.
- **Phase 2 Inventory and Analysis, Pedestrian Crossing Safety Assessment:** Data collection and mapping of all components of the existing network and conducting a preliminary gaps analysis to identify missing connections in the network. This phase also includes a separate study to develop and apply a pedestrian crossing safety assessment for all missing crossings identified in the preliminary gaps analysis.
- **Phase 3a External Stakeholder Engagement Round One, Plan Refinement:** Presentation of draft project vision and preliminary gaps analysis to external stakeholders for initial feedback and plan refinement.
- **Phase 3b External Stakeholder Round Two, Public Engagement Round Two:** Presentation of the refined plan, including the project vision, gaps analysis, and proposed short-term, medium-term and long-term prioritization plans to external stakeholders and the public for feedback.
- **Phase 4 Final Plan Creation:** Final short-term, medium-term and long-term prioritization plan for improving the network aligned with the final project vision including cost implications. Identification of areas for further study, where needed to address concerns from stakeholders and the public identified as outside of the master plan scope or those which may not align with the project vision.

2.0 Phase 1 (Baseline)

The purpose of the baseline phase is to garner a comprehensive understanding of the project from the City's perspective, understanding current practices, reviewing best practices from other municipalities, and confirming the project vision through collaboration with the City's administration. The baseline includes developing and confirming the engagement plan and includes the first of two public engagement sessions. The baseline phase includes the following components:

- **Section 2.1 – Best Practices Review:** Includes a review of other municipalities that have a similar type of project.
- **Section 2.2 – Current Policy Review:** Includes confirming our understanding of the City's current policies impacting trail and sidewalk planning.
- **Section 2.3 – Current Practices Review:** Includes confirming the City's current practices for identifying, implementing, planning, and prioritizing expansions to the trail and sidewalk network.
- **Section 2.4 – Public Engagement:** Conduct the first round of public engagement to introduce the project to the public, garner initial feedback from the public on existing conditions, issues, concerns and priorities.
- **Section 2.5 – Internal Stakeholder Engagement:** Consolidated effort compiling best practices review, current practices review, and engagement in a workshop with internal stakeholders to develop and the draft project vision that will direct the focus of subsequent project phases.

2.1 Best Practices Review

A desktop review of third-party documents was conducted to understand the current best practices relating to policy, strategy, and planning for open spaces and trails. Municipal planning documents were selected based on:

- their relevancy to the scope of work of this project;
- municipality characteristics; and
- municipality location.

Preference was given to planning documents from Alberta and Saskatchewan. The best practices review includes the following documents:

- City of Beaumont, Alberta – Population: 17,396: Open Spaces and Trails Master Plan
- City of St. Albert, Alberta– Population: 65,589: Active Transportation Plan Development Strategy and Gaps Assessment
- City of Saskatoon, Saskatchewan – Population: 273,010: Active Transportation Plan
- Town of Hinton, AB – Population: 9,882: Parks and Open Space Master Plan
- District of Summerland, BC – Population: 11,615: Sidewalk Master Plan and Trails Master Plan

An overview of each document is provided in the following sub-sections.

2.1.1 Open Space and Trails Master Plan – City of Beaumont, Alberta

Document Objective

The intent of the Open Space and Trails Master plan is to support the development of future open space and trail components in the City of Beaumont. This document includes an assessment of sportsfields and open spaces; however, only sections relating to trails are discussed.

Policy Context

The City of Beaumont's Open Space and Trails Master Plan was created to address two outcomes defined in the City's strategic plan and is influenced by three previous studies. The Community Services Needs Assessment conducted in 2010 includes general open space planning recommendations including the development of an open space classification system and the development of a Trails Master Plan. This led to the development of the Park Design Standards in 2012, which formalized an open spaces classification system and the Open Space Framework Plan in 2013, which expanded on the open space categories and trail classification system to be verified as part of the Open Spaces and Trails Master Plan.

Engagement Plan

Engagement sessions and programs were held with the public, as well as discussions with private developers, sports organizations, and Beaumont and the District Agricultural Society to understand the current views on open spaces and trails. From the consultation, it was determined that the trail system is highly valued and used with continued development desired.

Vision Statement

The trail system vision is as follows:

"The vision is an interconnected system of trails of various levels to provide residents a safe and enjoyable means of recreation and transport in close proximity to their residence."

Key Points

The insight gained from the consultation phase was used to understand facility usage, public perception, and general views on the City's current open spaces and trails to provide context for the study. An update to the 2010 needs assessment was also performed. A map of the existing trail system is provided. A review of the trail development standards and community input revealed that there are inconsistencies in the trail systems.

A trail system hierarchy was developed to identify the appropriate tread surfaces and widths for various trails within the City. Trail types and their uses are defined in detail. Several general trail system considerations are listed, including intended use, frequency of use, user needs, environmental protection, level of accessibility, diversity of experience, safety, and trail networks. To this end, trail network principles are provided with a list of actions to support the principles.

The implementation section provides recommendations for the trails system, as well as the financially responsible party, and the opinion of probable cost. The strategy recommendations include the creation of an inner and outer ring-road style bike route, as well as regional trail linkages. The recommendations were developed based on the consultation process throughout the project and the gaps assessment.

2.1.2 Active Transportation Plan Development Strategy and Gaps Assessment – City of St. Albert, Alberta

Document Objective

The City of St. Albert's Active Transportation Plan (ATP) Development Strategy and Gaps Assessment was developed to support the creation of an Active Transportation Plan. This document develops a framework and strategies for creating an effective ATP. Overall, the document is focused on planning; however, the gaps assessment portion of the document is focused on assessing the existing sidewalks and trails.

Policy Context

This document is related to several City plans and guidelines, including the municipal development plan, transportation master plan, transportation safety plan, and complete street guidelines. Active transportation has been incorporated as a section of the TMP in the past; however, a need for strengthened support of active transportation planning work was identified.

Engagement Plan

As this is a planning document for the development of an ATP, no engagement was performed; however, the need for transparent active transportation engagement in the future has been highlighted several times.

Vision Statement

The document includes a proposed vision statement for active transportation in St. Albert, which reads:

"St. Albert's active transportation system is planned and designed to create a safe, connected, inclusive, accessible, and affordable network for walking and bicycling by people of all ages and abilities."

Key Points

The document opens with a review of best practices and lessons learned from other municipalities, providing an overview of successful plans. Several case studies from around the world are reviewed, resulting in identifying key focus areas for an ATP, which include establishing a need for walking and cycling, developing high-quality networks, fostering the culture and appeal of active transportation, and outlining clear steps for implementation. The document provides a list of strategies for the ATP, including:

- Developing the ATP Foundation
- Planning the Active Transportation Network
- Designing Active Transportation Infrastructure
- Operating the Active Transportation System
- Creating a Culture of Support for Active Transportation
- Implementing & Maintaining the Active Transportation System

These strategies are then explored in greater detail with the actions provided for each strategy. The actions are then assigned a priority level, task, cost, department, and supporting departments.

The gaps assessment portion of the document lists the gaps in St. Albert's existing active transportation network, presents strategies for improvements, and recommends implementation priorities. A safety and comfort analysis was conducted, including assessing the Level of Traffic Stress used for a bicycle network assessment. The traffic level of stress is a four-point scale based on the "Four Types of Bicyclists" developed by Roger Geller of the Portland Department of transportation and validated at Portland State University. The levels range from Level 1, tolerable for users from eight to 80, to Level 4, tolerable for the adult population comfortable in shared traffic with no separation ("strong and fearless").

A map detailing the neighborhood's level of connectivity via low-stress roadways was then created. The presence of sidewalks along existing roadways was measured and mapped, along with existing and proposed transit stops and their distance to a sidewalk or trail. Data on the City's barriers to walking and biking was collected and mapped, with the most common barrier noted as no marked crosswalks and sightlines respectively. Travel pattern surveys were used to create a heat map of the destination within St. Albert, which supported the creation of active mode focus areas.

A proposed active mode network was then created, along with a prioritization strategy for improvements. Recommended improvements were prioritized based on the following (there is no weighting):

- Intersection safety, prioritizing intersections along St. Albert Trail, the main arterial, and those along spine and rib route crossings.
  - Spine routes are defined as paths or trails that are largely uninterrupted routes across large sections of a community.
  - Rib routes are defined as connections to major destinations, often on-street facilities connecting to a trail-based spine.
- Safe journeys to school, focusing on areas near or within Safe Journeys to School projects.
- Safe journey to transit, with a focus on expanding bicycling and walking facilities to expand the "catchment area" for transit services.
- Overlapping projects, emphasizing the need for adopted and proposed project charters factor active transportation gaps into the planning.
- Equity, stating that locations with relatively high concentrations of zero-car households should be prioritized.

Cost estimates for improvements are provided at the end of the document.

2.1.3 Active Transportation Plan – Saskatoon, Saskatchewan

Document Objective

The Saskatoon Active Transportation Plan (ATP) was written to support increasing transportation options by improving the accessibility, comfort, convenience, and safety of active transportation. The document establishes a vision, goals, targets and corresponding directions, and actions in support of active transportation in Saskatoon over the next 30 to 40 years.

Policy Context

The ATP is closely linked to and informed by several key policy and planning documents and serves as a component of Saskatoon's growth plan, *Growth Plan to Half a Million*. Other key documents that influenced the development of the plan include, but are not limited to, the 2013 – 2023 Strategic Plan, Parks and Recreation Master Plan (2015), Meewasin Trail Study (2014), and Traffic Control at Pedestrian Crossings Policy (2004).

Engagement Plan

An engagement plan was developed to provide an inclusive, accessible approach to building awareness of the plan and seeking input. It is noted that representative participation from community stakeholders and residents was integral to the creative process of the ATP. Three rounds of engagement were conducted, using a multitude of engagement techniques.

Vision Statement

The City of Saskatoon's ATP vision statement is as follows:

"In 2045, Saskatoon is a leading city for active transportation, where walking and cycling are convenient, comfortable, attractive, fun and normal ways of moving around the city year-round for residents and visitors of all ages and abilities. Saskatoon has developed an active transportation network, policies and programs through supportive partnerships that provide transportation choices and contribute to the City's robust economy, cultural and recreational experiences, environmental health, safety, physical beauty and neighbourhood connectivity."

Key points

The Active Transportation Plan has a detailed background/existing assessment, including examining active transportation in a land use context, as well as conducting demand, the potential to increase the active transportation mode share, and equity analysis. The document's goal is "to double walking and cycling trips to 24% of all daily trips and 15% of all commute trips by 2045." The document's key themes are connectivity, safety and security, convenience, land use and growth, maintenance and accessibility, and education and awareness. A set of directions and actions are provided to support each theme. An implementation plan with prioritized projects is provided, including cost estimates and timelines.

A set of variables were created to support project prioritization. Projects would be evaluated based on these variables, assigning a maximum of five points in each category. The points were then combined to develop a prioritized list of improvements. The prioritization variables include the following:

- **Network connectivity** – Degree to which the proposed network improvement addresses a gap (how the improvement connects to the existing network).
- **Generators** – Number of pedestrians in proximity to the proposed facility.
- **Access to Transit** – The majority of transit trips start and end with walking or cycling. Improvements closer to transit stops receive higher scores.
- **Potential** – The potential to increase the walking mode share based on land use patterns, population density, and transportation infrastructure.
- **Equity** – Assesses the greatest potential to improve access to traditionally underserved populations. Improvements with the greatest equity potential receive the highest score.

- **Safety** – The relative safety benefits of the proposed improvement based on collision data (vehicles, pedestrians, cyclists) over a 5-year period. Exposure of active transportation users to adjacent vehicle traffic was not considered but was recommended to be integrated into the analysis. Proposed improvements located on routes with the highest number of incidents receive the highest score.
- **Network Spokes** – Network spokes are defined as high-quality connections to the downtown. Improvements on routes designated as network spokes receive higher scores than routs that are part of the local network.

A crossing assessment was conducted to determine whether crossings within the City required upgrading; however, no details on how the crossing assessment was done is documented. A monitoring strategy with measures of success is also provided.

2.1.4 Parks, Open Space and Trails (POST) Master Plan – Town of Hinton, Alberta

Document Objective

The objective of this document was to analyze, catalogue, and evaluate existing POST infrastructure and make recommendations for provision and maintenance over a 15-year period. An extensive engagement took place to ensure the public was in the know and understood the initiative being undertaken. Policies, procedures, construction guidelines and development decision-making guidelines were all included within the document to ensure responsible and sustainable development of the POST network in Hinton.

Policy Context

The POST master plan was developed in conjunction with several other policy documents, such as various outline plans, infrastructure plans, land development guidelines, established area guidelines and area structure plans. All respond to, connect to, and are influenced by the Municipal Development Plan (2017). Detailed analysis of policy documents was undertaken to ensure consistencies are apparent between the documents. The Community Sustainability Plan (2011) provided a guideline for developing recommendations and POST experience. The POST Master Plan also made evident, which policy documents were needed to be developed moving forward to ensure policy documents and master plans are implemented appropriately.

Engagement Plan

Community engagement tool place through all phases of the project over 4 separate sessions. Community and stakeholder engagement sessions were conducted by the study team to obtain input and guidance throughout the process. Engagement methods included on-site attendance at community events, surveys, online interaction, and a series of public and stakeholder open houses. At the latter stages of the process, a final open house was facilitated to present and gather feedback on draft recommendations. All engagement activities were conducted using the International Association of Public Participation (IAP2) processes and protocols by certified study team members.

Vision Statement

The vision statement for the Hinton Parks, Open Space, and Trails (POST) Master Plan is below:

Welcome to YOUR Hinton! The Parks, Open Space and Trails (POST) Master Plan will guide future development of natural spaces and infrastructure in Hinton. Building upon the family-oriented spirit of Hinton, the POST network will be inclusive, accessible, engaging and immersive. The POST network will connect all of Hinton so you, your family and your neighbours can use the rich, natural context of our home. Parks, open space and trails in Hinton are abundant, well administered and improve the wellbeing of our citizens. So, get out and explore YOUR Hinton!

Key Points

The largest issue for Hinton was that there is a vast amount of POST infrastructure per resident. More specifically, Hinton has 9,882 residents and 370ha of parks and open space which equates to 37.44ha per 1,000 residents. In a municipal comparative analysis conducted, this is 20.29ha per 1,000 residents more than the next closest comparable municipality. These large provision quantities mean maintenance and operations have significant implications. These implications needed to be addressed within the Master Plan to ensure new development and provision of POST was sustainable and eased the pressure of maintenance and operations. This data was uncovered during phase 1, which conducted a thorough background analysis, comparative analysis and policy document analysis.

Eight vision goals were established early in the scope of work:

1. Access and Connectivity: POST is an inclusive network that has been developed to allow for access, usage and connectivity for all residents of and visitors to Hinton. Creating connections, trails, and pathways to link everyone to this vibrant network is imperative to its success.
2. Nature: Hinton has rich natural space that is highly used and cherished. Facilitating access and interpretation of these natural areas (forested areas, wetlands, and rivers) will help residents and visitors connect with nature.
3. Facilities: Ensuring the development of high-quality facilities to ultimately meet the diverse, recreational needs of residents and visitors who use the POST network is important to garnering as much benefit as possible from public investment.
4. Amenities: Development and maintenance of amenities will ensure the needs of users are met and will encourage prolonged visits to POST locations.
5. Public Safety: Enhancements to infrastructure and the creation of an exciting public realm through logical, thought-out design will develop safe environments for users to use POST facilities. Use of Crime Prevention Through Environmental Design (CPTED) principles throughout infrastructure development is one way to do this.
6. Management: Sustaining a high level of community involvement from individuals and community groups by implementing formalized management procedures and agreements.
7. Programming: Hinton, in partnership with community groups and organizations, facilitates and supports structured recreational activities, sports leagues, and outdoor programs to meet the needs of the community.
8. Community: Engaging the community and creating benefits for volunteers to enhance the POST experience and build a sense of ownership within Hinton.

Ultimately, these goals were developed to ensure the best possible POST experience for users. Parks, open spaces, and trails are cherished amenities in Hinton and are essential contributors to the quality of life and wellbeing of Hinton residents. Hinton acknowledges the need to provide, maintain and operate POST in a manner that allows users to connect with nature and participate in recreational and educational activities. The following vision has been developed to further articulate the Town's intentions related to POST; it is based on feedback from the community, research, and other strategic documents and initiatives of the Town. All goals and objectives directly tie back to the Community Sustainability Plan (2011) and attempt to satisfy the overarching goals and objectives set out within it.

2.1.5 Sidewalk Master Plan/Trails Master Plan – District of Summerland, British Columbia

Document Objective

Both documents have similar objectives, including documenting existing infrastructure and the potential to expand the sidewalk/trail network, ensuring the trails and sidewalks meet the needs of the community, and identifying policies and procedures to ensure maintenance, safety, promotion of the networks, and minimizing environmental impacts.

Policy Context

The Sidewalk Master Plan, Trails Master Plan, and Cycling Master Plan were developed concurrently and collectively influence active transportation in the District of Summerland. Both documents are influenced by the 2015 District of Summerland Official Community Plan, which focuses on the need for walking infrastructure in the Downtown and supports the development of the trail network, as well as the 2008 Transportation Master Plan. The Sidewalk Master Plan is also linked to the Subdivision and Development Servicing Bylaw (99-004) and the Snow, Ice, and Rubbish Bylaw (93-065), while the Trails Master Plan is linked to the 2018 Parks and Recreation Master Plan and the 2018 Giant's Head Mountain Trails Re-Development Plan.

Engagement Plan

Community engagement was conducted during the second and third phases of the project, to collect information on existing trails and sidewalk conditions in the second phase and present the primary themes and actions to be included in the Master Plans as well as the long-term sidewalk and trails networks.

Vision Statement

The vision statement for the trails, sidewalk, and cycling master plans is provided below:

"Summerland is a community where active and healthy living is encouraged and walking, cycling and other forms of active transportation are safe and comfortable for people of all ages and abilities, year-round, and for all trip purposes, including recreation and commuting."

Key Points

Both Master Plans included the same three themes, which include network, safety and accessibility, and infrastructure. A review of the community context, including the demographics, land use, and relevant policies and guidelines is provided. Barriers to the trails and sidewalk networks were noted as the distance between neigbourhoods, as well as a highway that divides the district. The documents also include an existing conditions assessment for the sidewalks and trails in Summerland. An online survey was conducted to determine the key issues and opportunities for sidewalks and trails. Gaps in the network are the primary issue noted for both surveys.
The three themes, network, safety and accessibility, and infrastructure, are expanded upon, with several actions provided for each theme. Examples of network actions within the Master Plan are developing a complete sidewalk network, integrating the trail network with the sidewalk and cycling networks, and identifying trail design standards based on uses.

Implementation strategies are provided in both Master Plans. The implementation Strategy includes the cost of improvement, timeframe (5 years, 5 – 15 years, 15 + years), method of implementation, and responsibility. Prioritization was based on increasing sidewalk coverage on major roads, streets that provide access to schools, and within the downtown and urban growth areas, as well as stakeholder and resident feedback.

2.1.6 Best Practices Review Discussion

The following are insights into the components of a successful trails and sidewalk master plan based on the best practices review:

- **Influencing and Driving Documents:** Most of the documents reviewed were primarily policy-driven, with actions to support the core themes. Each document was linked to and influenced by existing policy documents, falling into the category of a driving document that recommends the creation of the plan or an influencing document impacts the development of the plan, with policy level directions.
  - Example driving documents (recommending the master plan) include strategic plan, open space framework plan, transportation master plan.
  - Influencing documents include community plans, transportation master plans, parks and recreation master plan, growth plans, accessibility action plan, and park design standards.
- **Vision Statements:** All projects included a vision statement, although the focus of the vision statement varied. Example terms used in other vision statements include interconnected trails, safety, defined goals to increase active transportation mode share (target mode share percentage), inclusivity and equity, increase the attractiveness of active transportation, supporting recreation and commuting trips.
- **Public Engagement:** Transparent engagement with the public and stakeholders is critical for a successful plan. Residents were often aware of gaps in the trails and sidewalk systems and expressed a desire for these gaps to be resolved.
- **Gaps Assessment:** A review of existing infrastructure supports gaps assessment, which is a valuable tool and method to include collecting public feedback or desktop level review. The gaps assessment in St. Albert's Active Transportation Plan considered connectivity via low-stress connections, defined as those tolerable for all users from eight to 80 years of age.
- **Capital Planning:** All documents reviewed provided a timeline for future projects or actions in support of improving the trails and sidewalk network and usage.

- **Prioritizing Projects:** Saskatoon's Active Transportation Plan is the only document that provides a refined, weighting system for prioritizing projects. Other prioritization methods are qualitative and varied with common factors to determining a project's priority including the potential to close network gaps, location of the trail/sidewalks to key destinations or corridors, proximity to transit, equity and safety for all users, connectivity to specific land uses (schools/retail) and others.
- **Pedestrian Crossing Safety:** While crossing safety and reviews were conducted in some of the documents, there does not appear to be a defined method for conducting the assessments, with several assessments appearing to be observation/feedback based.
- **Trail Experience:** Defining trail experience pertains not only to trail materials and decisions around where to put certain trails, but also to the connections and destinations these trails lead to. Trail experience intends to high the amenities and/or environmental features along a trail route or interactions at trail intersections. Examples for enhancing trail user experience included adding art, interpretive displays, urban forest, social gathering amenities (benches, gazebos), fitness amenities (gym equipment), and wayfinding signage. Some facilities could be developed in existing parks adjacent to trails or even within intersections.

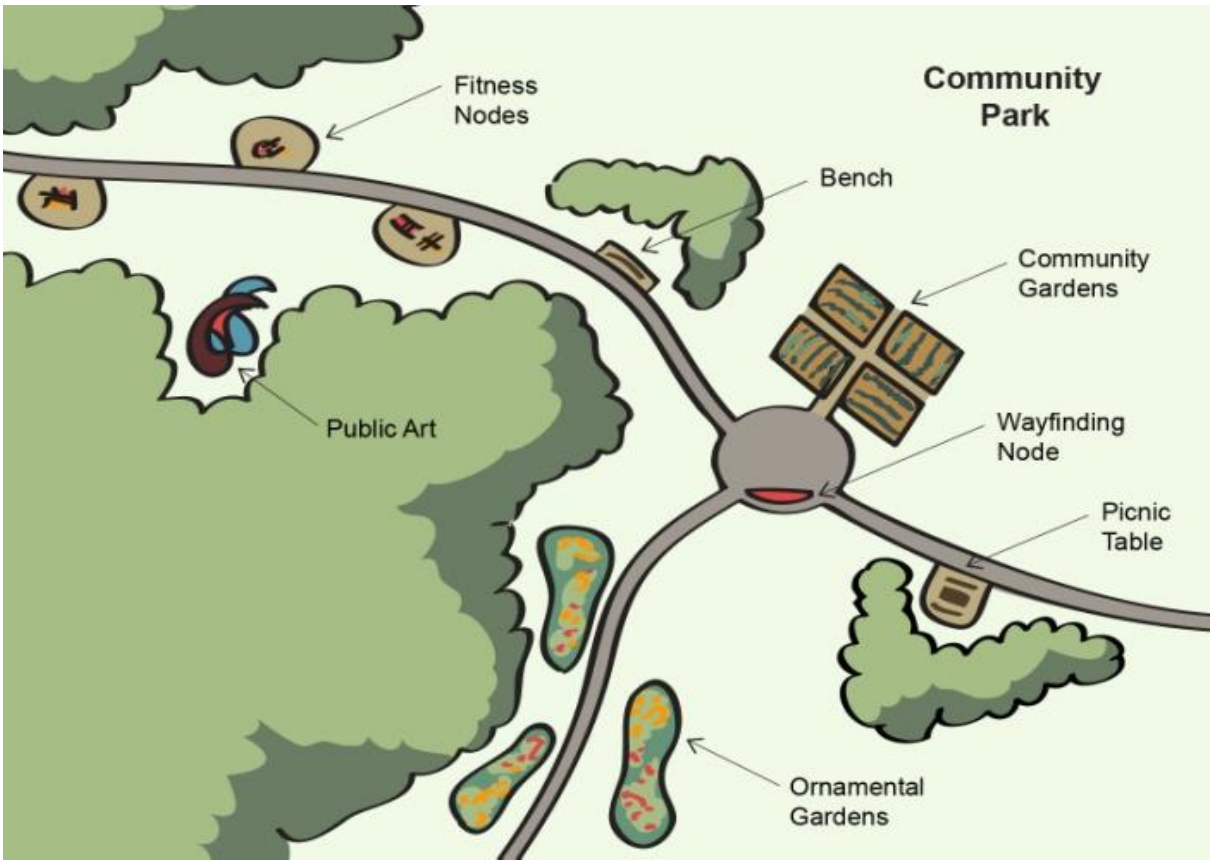


Figure 2.1: Trail Experience Sample Diagram

- **Trail Hierarchy:** The Beaumont Open Scape and Trails Master Plan provides a trail hierarchy that indicates the type of trail or sidewalk, width, surface type. A trail system hierarchy was developed to identify the appropriate tread surfaces and widths for various trails within the City. Trail types and their uses are defined in detail. Several general trail system considerations are listed, including intended use, frequency of use, user needs, environmental protection, level of accessibility, diversity of experience, safety, and trail networks.

Implications of Best Practices Review

Initiating this study was driven by the City Council, rather than a specific higher-level planning document as found in other municipalities. Influencing documents include statutory and non-statutory plans and these are reviewed in the next section, under current plans and practices review.

Developing a vision statement is recommended in this study as an overarching directive for developing the plan, influencing decision making, evaluating options, and finalizing recommendations.

Confirming the focus for potentially enhancing trail user experience with art, interpretive displays, benches, gazebos, and other amenities are recommended through developing the project vision and defining how projects are prioritized. The project vision needs to confirm the level of focus for enhancing trail user experience and how much priority should be given over expanding the recreation of the commuter trail system. Vision statement items are dependent on the needs of the City but example vision terms from others could be used to seed discussion. Example terms used in other vision statements include interconnected trails, safety, defined goals to increase active transportation mode share (target mode share percentage), inclusivity and equity, increase the attractiveness of active transportation, and supporting recreation and commuting trips.

Four of five documents reviewed use a qualitative prioritization system, and this is recommended for the City of Lloydminster. Developing a detailed prioritization system, like the complex weighted scoring used in Saskatoon's Active Transportation Plan is not warranted due to the smaller size of the City of Lloydminster. Alternatively, a qualitative prioritization system reflecting the project vision and defining prioritization elements is recommended. Suggested items for prioritizing projects include potential to close network gaps, location of the trail/sidewalks to key destinations or corridors, proximity to transit, expanding recreational trails, equity and safety for all users, connectivity to specific land uses (schools/retail) and others as needed.

Other items including gaps assessment, public and stakeholder engagement, and capital planning are in line with other studies reviewed and included with this study. Conducting the gaps assessment through desktop-level analysis and public input is included in this study and consistent with other plans reviewed.

Developing and applying techniques for evaluating pedestrian crossing safety was not found in other documents reviewed but is included in this study making it unique.

2.2 Current Plans and Practices Review

Similar to the documents in the best practices review, the Trail and Sidewalk Master Plan is closely linked to and informed by the City's existing policies and plans. These are categorized into the following main categories:

- **Statutory Plans/Bylaws:** Municipal Development Plan (MDP), Intermunicipal Development Plan (City and County of Vermillion River), Lloydminster District Planning Commission (LDPC), Land Use Bylaw (LUB).
- **Non-statutory Plans:** Transportation Master Plan (TMP), Growth Strategy and Assessment.
- **Current Practices:** Summary of day-to-day decision-making practices.

The following is an overview of these as they are related to the Trails and Sidewalk Master Plan.

2.2.1 Statutory Plans

Municipal Development Plan (MDP)

The MDP is a statutory document intended to guide the growth and development of the City of Lloydminster. The document provides a 20-year planning time frame from 2013 to 2032 in which the population is anticipated to grow to approximately 50,000 people.

The City's MDP contains policies indicating the need for promoting active transportation in the City.

Implications of MDP: Completing this study aligns with the policies outlined within the MDP for promoting active transportation. Improving the connectivity of sidewalks and trails through the completion of this project will promote active transportation and make it a more attractive option.

Intermunicipal Development (IDP)

The IDP provides a framework for collaboration between the City and County of Vermillion River and confirms the need for providing a regional trail system designed to take advantage of open spaces and linear right of ways as an option for providing off-road alternatives for cycling, cross-country skiing and walking. Opportunities for regional trails include potential connections between the City and the employment areas located along Highway 16, west of the City boundary and possibly taking ownership of the abandoned rail right of way located in the City's northwest.

Implications of the IDP: Completing this study aligns with the overall philosophy outlined within the IDP to develop linear infrastructure, including regional trails.

Lloydminster District Planning Commission (LDPC)

The LDPC acts as more of a bylaw for controlling land use development with the assigned LDPC area. Provisions, guidance and requirements for including active transportation plans are missing from the LDPC, although there are incredible offerings for parks and open spaces within the area, including Neale Lake. As the City expands to the east, collaboration opportunities between the RMs of Wilton and Britannia and the City are especially significant where there is a need.

Implications of LDPC: Future updates of the LDPC may reflect the outcomes of this study, including provisions, guidance and requirements for including active transportation plans in applicable areas within the LDPC area. This is subject to discussions between the City and external stakeholders as well as the Rural Municipalities of Wilton and Britannia.

Land Use Bylaw (LUB)

The LUB (2016) does delineate circulation requirements for development permit approval in the form of sidewalks, trails, and necessary connections. Further to this, trail and sidewalk development recommendations for specific conditions and pedestrian safety considerations are provided. Terms like “safe crossing” are used for conditions to be achieved but not defined in a quantitative way. Specific recommendations pertaining to development standards and types of trails to be provisioned are not provided; however, the City does have guidelines in place for new development to ensure new trails and sidewalks are built in appropriate locations.

Implications of LUB: A future addendum to the LUB may include provisions for development to connect existing trails and sidewalks to the trail and sidewalk network formalized in this study.

2.2.2 Non-Statutory Plans

Transportation Master Plan

The Lloydminster Transportation Master Plan identifies the City’s long-range and shorter-term transportation requirements and capital plans. The document includes an active transportation gap assessment and priority recommendations, review and development of the pedestrian and cyclist circulation system, traffic signals review, and a trails and sidewalks review that may be reviewed for this Master Plan. Improvements to trail and sidewalk connectivity are listed in the short-, medium-, and long-term capital plans.

Implications of the Transportation Master Plan: Completing this Master Plan supports the planning and capital planning of improvements.

Growth Strategy and Service Assessment

Completed in 2013, the Growth Strategy and Service Assessment formed two parts of the City of Lloydminster Comprehensive Growth Strategy to determine growth directions over the next thirty (30) years. The Servicing Assessment identifies long-term infrastructure requirements for the Growth Study. The findings of the Comprehensive Growth Strategy will inform the possible expansion of the City’s boundaries to ensure there are adequate lands for the next thirty (30) years of development.

Implication of the Growth Strategy and Service Assessment: While the Growth Strategy does not address active transportation, the information on the City’s population and demographics may be used as inputs for assessing the City’s active transportation needs. The Servicing Assessment is not anticipated to influence the Trails and Sidewalks Master Plan, except for potentially providing insight into the most likely areas for the City to expand.

2.2.3 Current Practices

Current practices are those that include the day-to-day decision-making related to the City’s sidewalks, trails and crosswalks network. Understanding the City’s current practices is excellent input for developing the project, carrying forward practices that currently work well, expanding on current practices where relevant and eliminating and/or replacing practices not meeting the City’s goals. To understand the City’s current practices, a series of questions were submitted to the City and discussed at the start of the project.

1. **How do you currently make decisions as follows:**
   a. **Location of trails**
      i. Through a review of subdivision design approvals and reviews, the engineering team uses best judgment and sound reasoning to determine if there is an opportunity to implement or relocate trails.
      ii. By review of public requests/concerns, the City uses best judgment and sound reasoning to determine need and viability of new trail (e.g. 52 Street between 50 Avenue and 62 Avenue, opted to get a design made due to demand and concerns to improve connectivity)
      iii. Via internal request, the City uses best judgment and sound reasoning to determine the need and viability of new the trail.
      iv. Note that factors like link completion, connectivity improvement, demand (frequency of request/concern).
      v. In summary, up to this point, the City has not had a defined decision matrix and/or road map for determining where trails will be put and what connectivity links are completed. A lot of the trail locations are more reactive than they are proactive.
   b. **Types of trails (or are they all standard asphalt)**
      i. Newly built trails are all asphalt.
      ii. Shale - these trails are being upgraded to the asphalt on an annual basis. The City has been opting to upgrade all trails to an asphalt concrete pavement and move away from "eco" trails that consist of shale, mulch, etc. as the City has found the maintenance of these trails to be burdensome. In the original Bud Miller All Seasons Park, mulch and shale trails would have fit in good however we do not have areas within the City where an "eco" trail would be well accepted by the public.
   c. **Crosswalk improvements (any internal guidelines?)**
      i. Currently using the Transportation Association of Canada (TAC), Pedestrian Crossing Control Guide. Some examples of this include the implementation of several rectangular rapid flashing beacons (RRFB) at select locations.
   d. **Trails for new development**
      i. As mentioned above, use the best judgment if there's an opportunity to implement; the City's development coordinator is key in the process and works closely with developers to seek more information regarding trail placement and location.
2. **How important is trail experience to the City?**
   a. Standard drawings for construction exist but the City will veer from standards in rehab situations as needed
   b. Trail system is a growing priority and the City is looking for:
      i. A more objective means of determining the need or warranting for trail construction
      ii. A more objective means of determining the location of the trail
      iii. Determining if there is an opportunity to consider several different types of trails.
   c. A good example is the trail that was added to 62 Avenue, receiving positive feedback from the public, and seeded discussion for new trails.
   d. A more challenging example is a proposed trail on the north property of Bud Miller Park, which received negative feedback from the public. Trail planned behind residential lots, abutting the east/west fence line (shown in the aerial below).

Figure 2.2: Previously Proposed Trail

3. **Do you have any existing minimum standards for trails/sidewalks within the construction standards, including width/material and landscape design? (other than from the road standards).**
   a. Municipal development standards only.
4. **How is trail/sidewalk maintenance performed?**
   a. As needed based on visual inspection and request by parks.
   b. Any trail that is not currently asphalt needs to be upgraded to asphalt as budget allows.
   c. Snow clearing as needed

2.3 Public Engagement Round 1

In June 2020, online engagement was launched on May 28, 2020, until June 18 to gather feedback from residents and the public to understand the following to inform the development of a project vision:

- What does the public value about trails and sidewalks?
- How does the public currently use the trail and sidewalk network and how you would like to use it in the future?
- What elements of trails and sidewalks are most important to the public?
- What current issues exist?
- What ideas and opportunities do people see for the future?

The online engagement was conducted on the City's webpage: https://yourvoicelloyd.ca/trails and included the following opportunities:

- Online survey
- Mapping Tool
- Q & A Tool

2.3.1 Public Engagement Results

There were 316 participants in the online survey. The type of users that completed the survey are illustrated in the following chart.

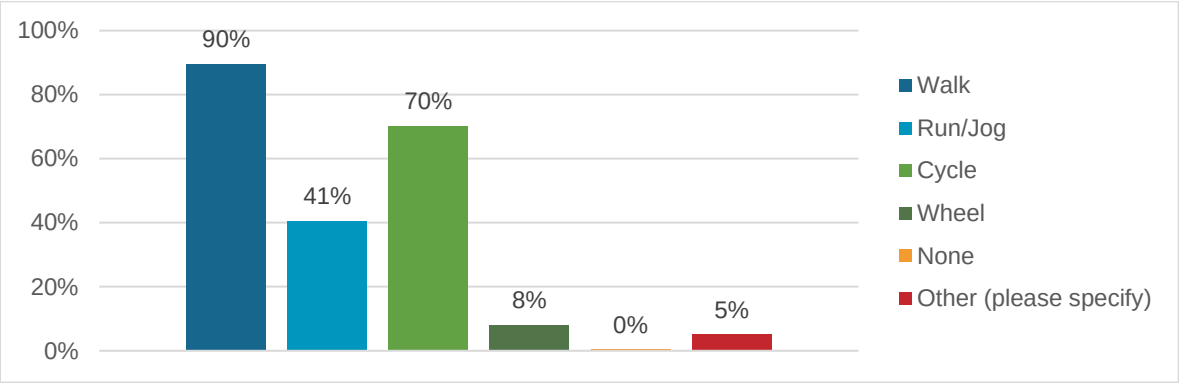


Figure 2.3: Online Survey (User)

Overall key themes are summarized in the subsequent sections. Details of key themes we heard in response to each question are included in a summary of feedback received from the online survey and mapping tool in **Appendix A**.

Ranking Based on Importance

The public was asked to rank the level of importance within the following seven themes:

1. **Safety:** Safety for users of trails, sidewalks and at intersections.
2. **Connectivity:** Network connectivity of trails and sidewalks as an option for getting to key destinations.
3. **Accessibility:** Accessibility for all types of users, ages and abilities (Examples: wheelchair, walker, stroller accessibility, etc.)
4. **Protecting Environment:** Protecting the natural environment and maintaining greenspace.
5. **New Expansion:** Expanded trail system providing more areas for recreation purposes.
6. **Wayfinding:** Wayfinding Signage (Examples: network maps, directional signage, trail names or colours, etc.
7. **User Experience:** User experience enhancements through trail amenities (Examples: benches, gazebos, public art, educational plaques, etc.)

The results based on importance is provided in the following table.

Table 2.1: Public Engagement Results (Ranked by Theme)

Rank	Theme	Results of Survey				
		Unimportant	Somewhat Important	Neutral	Somewhat Important	Important
1	Safety	0%	2%	4%	9%	85%
2	Connectivity	1%	1%	4%	15%	79%
3	Accessibility	0%	1%	5%	17%	77%
4	Protecting Environment	0%	2%	12%	26%	60%
5	New Expansion	2%	2%	14%	26%	55%
6	Wayfinding	4%	8%	26%	31%	30%
7	User Experience	12%	13%	27%	29%	20%

As shown in Table 2.1, safety, connectivity, and accessibility stand out as the top three priorities for the trails and sidewalk network based on public input. Some key comments and items of importance received are as follows (taken from the **Appendix A** report):

- **Safety:** Safety is especially important at intersections, relating to crossing control safety including the crossing controls in place (visibility, lighting, timing, maintenance and user behavior)
  - Feeling safe on the trail and sidewalk system affects people's decisions to use trails. Relating to the need for improved lighting on trails, continual maintenance throughout all seasons. physically separating the network from vehicle traffic and providing safe crossings.
- **Connectivity:** Increasing connectivity would make using the trail and sidewalk network a more viable alternative mode of transportation, reduce confusion for users (where there are missing connections) and provide more variety of trail connection options with more uninterrupted lengths for users.
- **Accessibility:** All trails and sidewalks should be accessible to residents, with a focus on ensuring proper transitions between surfaces, proper hard surfacing, widths, grading, continual maintenance and proper intersection crossing timings support accessibility for all users.
- **Natural Environment:** Greenspaces add a lot of natural beauty and are important for a healthy environment and users enjoy many benefits including, increasing enjoyment, improving mental health and improving physical health. Greenspaces need to prevent negative impacts on the environment.
- **New Expansion:** Expansion of the network would provide new places to be explored, where there is additional greenspace available; however, the current trails system should be better connected.
- **Wayfinding:** Wayfinding signage and marking would increase awareness of connectivity; however, there are some concerns about costs, maintenance and potential vandalism. There are opportunities for improving the current online maps as are considered confusing and somewhat inadequate.
- **Experience:** Improving user experience would increase the enjoyment of the network and encourage more people to use the network and opportunities include providing public art, public education displays (plaques), benches/seating, shelters, garbage cans, washrooms, water fountains, and others. Opposing concerns about costs, maintenance, vandalism and overall improving experience is less a priority compared to improving connectivity.

Ranking Based on Prioritization

The public was asked to rank the level of prioritization needed within the following subject areas:

- **Connectivity:** Adding connections to important destinations (Examples: schools, downtown, shopping areas, etc.)
- **User Experience:** Adding user experience enhancements (Examples: benches, gazebos, public art, educational plaques, etc.)
- **Expansion of Existing:** Expanding the network and improving connectivity.

The results are provided in Table 2.2.

Table 2.2: Public Engagement Results (Ranked by Prioritization)

Rank	Theme	Results of Survey~			
		Not a Priority	Low Priority	Mid Priority	High Priority
1	Expansion of Existing	3%	23%	23%	71%
2	Connectivity	4%	10%	35%	49%
3	User Experience	15%	36%	36%	12%

As shown in Table 2.2, expanding the recreation trail network is the highest priority, and this is interpreted similarly to closing gaps in the existing network and improving connectivity. It is also interpreted as different than expanding the existing network to create more opportunities for recreational purposes as this was given a lower ranking of importance.

Use of the Current and Future Network

The public was asked to identify their current and future use of the network and this is illustrated in the following figures.

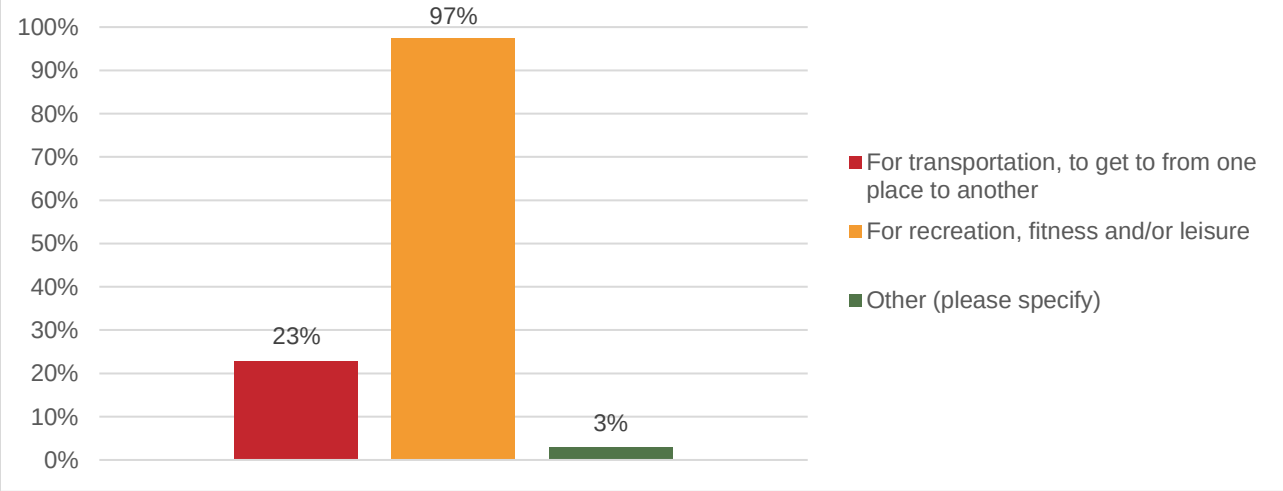


Figure 2.4: Current Use

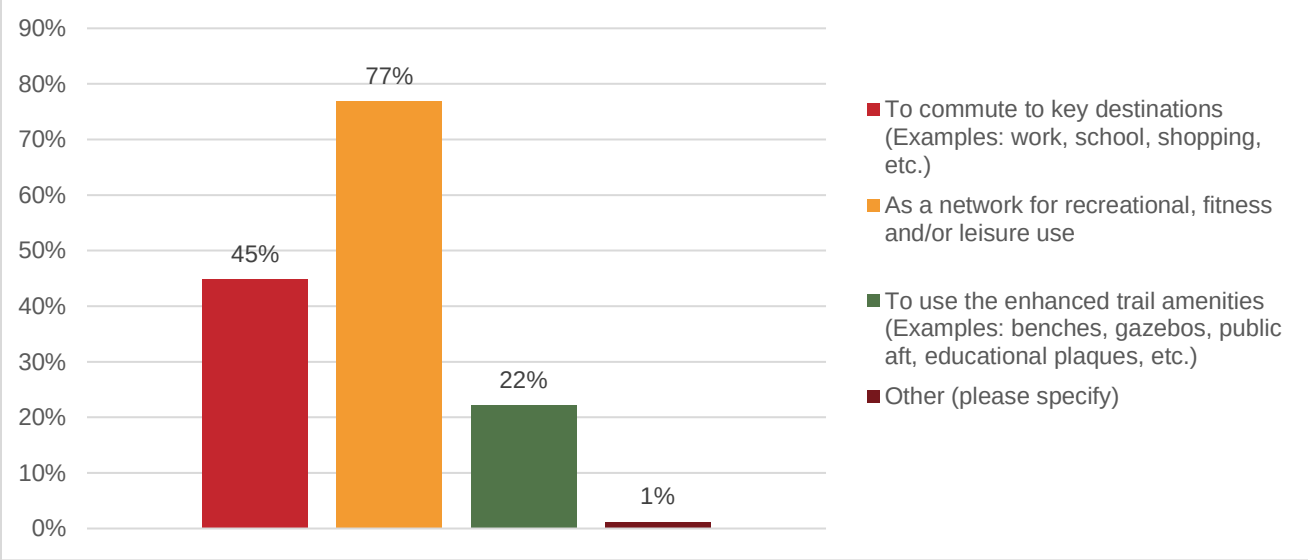


Figure 2.5: Future Use

3.0 Phase 2 (Inventory and Analysis)

3.1 Project Visioning

On Wednesday, May 20, 2020, an internal visioning workshop was held virtually via Microsoft Teams from 3:00 p.m. to 4:00 p.m. The event took place in Phase 1 of the Trails and Sidewalk Master Plan project. The purpose of the event was to develop an understanding of important elements and priorities for internal City departments to inform the project Vision. The workshop was held virtually via Microsoft Teams. ISL's project manager narrated a PowerPoint presentation to provide project information to the participants while ISL's communications team facilitated roundtable conversations to gather feedback on specific questions throughout the presentation. A detailed record of the workshop is provided in **Appendix B**.

The following is a summary of key messages received as a result of the internal visioning workshop.

- Short-term priorities for the Trails and Sidewalks Master Plan should focus on closing network gaps in the existing network, rather than expanding the network. Attention needs to focus on ensuring the existing system is functional prior to planning expansions to the network.
- Projects should be prioritized, considering the need to close network gaps, maintenance requirements, and consider public requests.
- Improvements need to consider maintenance requirements as a high priority.
- Trail experience is not the highest priority; however, the City currently only offers minimal amenities along trails and should focus on providing entry-level amenities (benches, trail mapping and signage) at a minimum.
- Long term priorities could focus on expanding the trail and sidewalk network.
- A pedestrian crossing control evaluation is needed to objectively determine whether an existing location requires a crosswalk or expanded safety measures. and whether a crosswalk is needed in a future developed area.

Implications of the project visions session on the project area are as follows:

- Gaps assessment phase to focus on network improvements to close existing gaps and opportunities for installing entry-level amenities to improve user experience.
- Project priority should be based on closing network gaps and reducing maintenance requirements, which may involve paving existing shale trails.
- Long-term priorities for expanding the trail and sidewalk network should build on the requirements for accommodating future growth, but also focus on expanding the short-term network as determined by the gaps assessment.
- Minimizing maintenance requirements may mean improving the existing shale trail network.

Draft Project Vision

A major outcome of the session was the draft project vision, and this is as follows:

The Trails and Sidewalk Master Plan improves the existing network as follows:

- Improving access and ease of use through increasing connectivity through the existing network.
- Creating a safe and welcoming space for users of all ages and abilities to enjoy the natural environment.
- Encouraging active modes of transportation, physical activity, and outdoor recreation.

3.2 Data Collection

Data Collection Methodology

ISL performed data collection for all roadways and trails within the City of Lloydminster during the spring of 2020. The scope of this work included taking 360-degree photos of these roadways and trails using whatever means was ideal and most efficient. It was determined that there would be two methods of obtaining this data that would work best for this project, as follows:

- **Vehicle Mounted 360-Degree Camera:** The first method would include mounting this 360-degree camera to the top of one of the ISL's Ford F-150 using a device developed by our project engineer. This device was essentially a set of industrial glass movers with large suction cups that could hold tightly to the top of the ISL truck to prevent slippage, with a large screw attached in the middle of this apparatus to allow the camera to be fastened tightly to it and ensuring that it was secure during travel. When driving, the vehicle would travel at around 30 km/h maximum in order to obtain enough photos of the roadway as the camera would take an image approximately every 8 seconds. Slow travel was required to ensure that every road was covered, and no areas were missed due to driving too quickly. This method was used to obtain imagery of the roadways throughout the City of Lloydminster.
- **Backpack Mounted 360-Degree Camera:** The second method involved mounting the 360-degree camera to a large pole that could fit inside of a backpack and allow the user to carry this device on their backs. The pole, which the camera was mounted to, would stand approximately 2-3 feet above the user's head allowing optimal viewing of any trails that were travelled on. This method was used for capturing imagery of local trails throughout the City. Alternatively, if the user decided that the trail which was being travelled was too long for walking, a bicycle was used, and the backpack was worn while biking in order to optimize the efficiency and energy of the user.

Using either of these two methods would also require the use of survey equipment to provide coordinates for where each photo was taken as the 360-degree camera would not provide this information automatically. It was through a combination of all the equipment described that ISL was able to obtain photos of the roadways and trails within the City.

3.3 Existing Network

The existing network is mapped based on the data collection as follows:

- Exhibit 3.1: Existing Facilities (Sidewalks, multiuse paths, trails and natural paths)
- Exhibit 3.2: Existing Surface condition
- Exhibit 3.3: Existing Crosswalks

Detailed descriptions of each type of facility are provided in the following sub headers.

3.3.1 Existing Facilities (Sidewalks, Multiuse Paths, Trails, and Natural Paths)

Existing facilities are illustrated in Exhibit 3.1 and a detailed description of the facilities is shown as follows.

Sidewalks

A sidewalk is defined as a paved, often of concrete, path along the side of a roadway. Sidewalks are designed for pedestrians and not intended to accommodate cyclists. This type of pedestrian facility may be mono-walks, in which the sidewalks are connected to the curb or separated. Examples of sidewalks within the City are provided below.

Examples of Sidewalks within the City of Lloydminster (mono-walk (Left), separated (Right))

Multi-Use Path

A multi-use path is defined as a wide, paved path, often asphalt, that is designated for pedestrian and cyclist use. For the purpose of this master plan, multi-use paths are on one side of a roadway, with a sidewalk on the other side. Multi-use paths are a part of a city's bike network, providing users with the option to bike on the multi-use path or walk on the sidewalk without encountering cyclists. Examples of a multi-use path within the City are provided below.

Examples of Multi-Use Paths in the City of Lloydminster

Trail

Trails are a type of path that is not along a roadway and is often associated with parks and open greenspace. Trails may be paved or unpaved and vary in width. Trails are intended to encourage recreation and connect communities. Examples of trails within the City are provided below.

Examples of Trails in the City of Lloydminster

Natural Path

Natural paths are informal paths created by repeated pedestrian activity in a greenspace. They represent desire lines, paths in which there is no formal trail or sidewalk but is frequently traversed by pedestrians. Repeated pedestrian activity often damages or kills grass along the path, exposing the dirt underneath. Natural paths may indicate gaps in the trail and sidewalk network and are best seen from aerial images or in the winter when the snow becomes compacted. Examples of natural paths within the City are provided below.

Examples Natural Paths in the City (Source: Google Maps)

3.3.2 Existing Surface Condition

Existing surface conditions are illustrated in Exhibit 3.3 and a detailed description is as follows:

- **Concrete:** A cast in place mixture of cement and aggregate, typically a light grey colour. Control joints are added to the surface of the concrete to account for a freeze thaw cycles and reduces the likelihood of random cracking elsewhere. Concrete surfaces are often associated with sidewalks, curbs, curb ramps, and gutters.
- **Gravel:** Aggregate that is compacted to make a surface. Gravel surfaces include loose material that may result in loss of traction while biking or running. Susceptible to damage from water and requires regular maintenance. This type of surface is often associated with trails.
- **Asphalt:** A mixture of aggregate and bitumen that is compacted to make a surface. It is black in colour when initially installed but greys with age. Asphalt surfaces are often associated with multi-use paths and roadways.
- **Natural:** Associated with natural paths, this surface is created when repeated pedestrian or cyclist activity damages or removes grass along a line from a green space.

3.3.3 Existing Crosswalks

Existing crosswalks are mapped on Exhibit 3.3 and illustrations depicting crosswalk types are depicted on Exhibit 3.4.

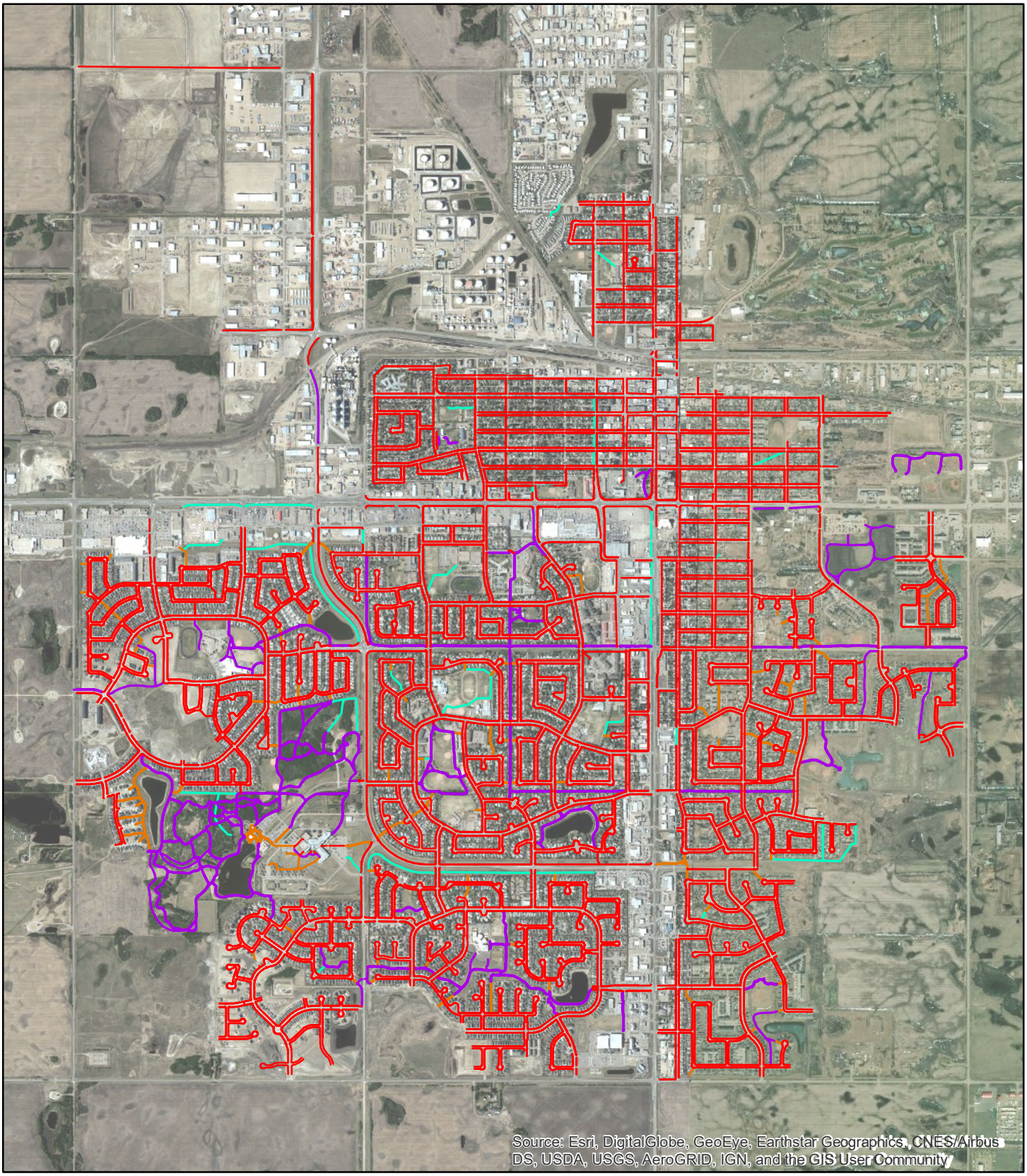
3.4 Preliminary Gaps Analysis

The gaps assessment defines missing connections as the following:

- Natural paths depicting the public's desired connection.
- Missing sidewalks, trails or multiuse paths that, without their connection, create dysconnectivity within the network and between major destinations, including recreational areas, shopping areas and institutional areas.
- Missing sidewalks, trails or multiuse paths, where there is no current connection along a roadway or where there could be a second connection.
- Any missing crosswalk, that connects between sidewalks, trails or multi-use paths.

The preliminary gaps analysis is provided in **Appendix E** as it was the subject of the first round of stakeholder engagement and is documented in Section 5.0 of this report.

Exhibit 3.1: Existing Facility Type
Exhibit 3.2: Existing Surface Condition
Exhibit 3.3: Existing Crosswalks
Exhibit 3.4: Crosswalk Types



N

1:30,000

- Sidewalk
- Multiuse Path
- Natural Path
- Trail

0 0.125 0.25 0.5 0.75 1 km

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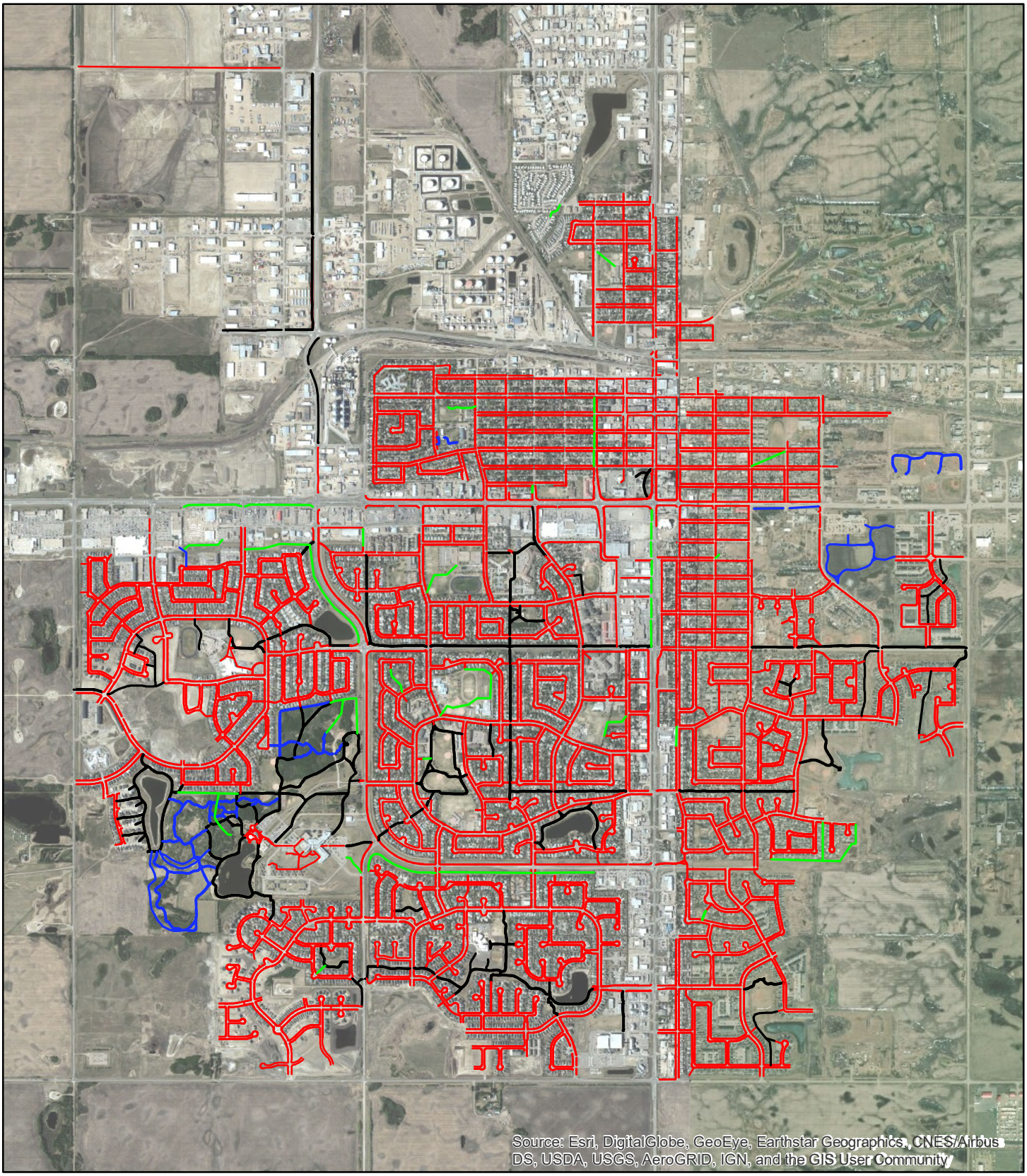
TRAILS AND SIDEWALKS MASTER PLAN

EXHIBIT 3.1: EXISTING FACILITY TYPE



N

1:30,000

- Concrete
- Gravel
- Asphalt
- Grass

0 0.125 0.25 0.5 0.75 1 km

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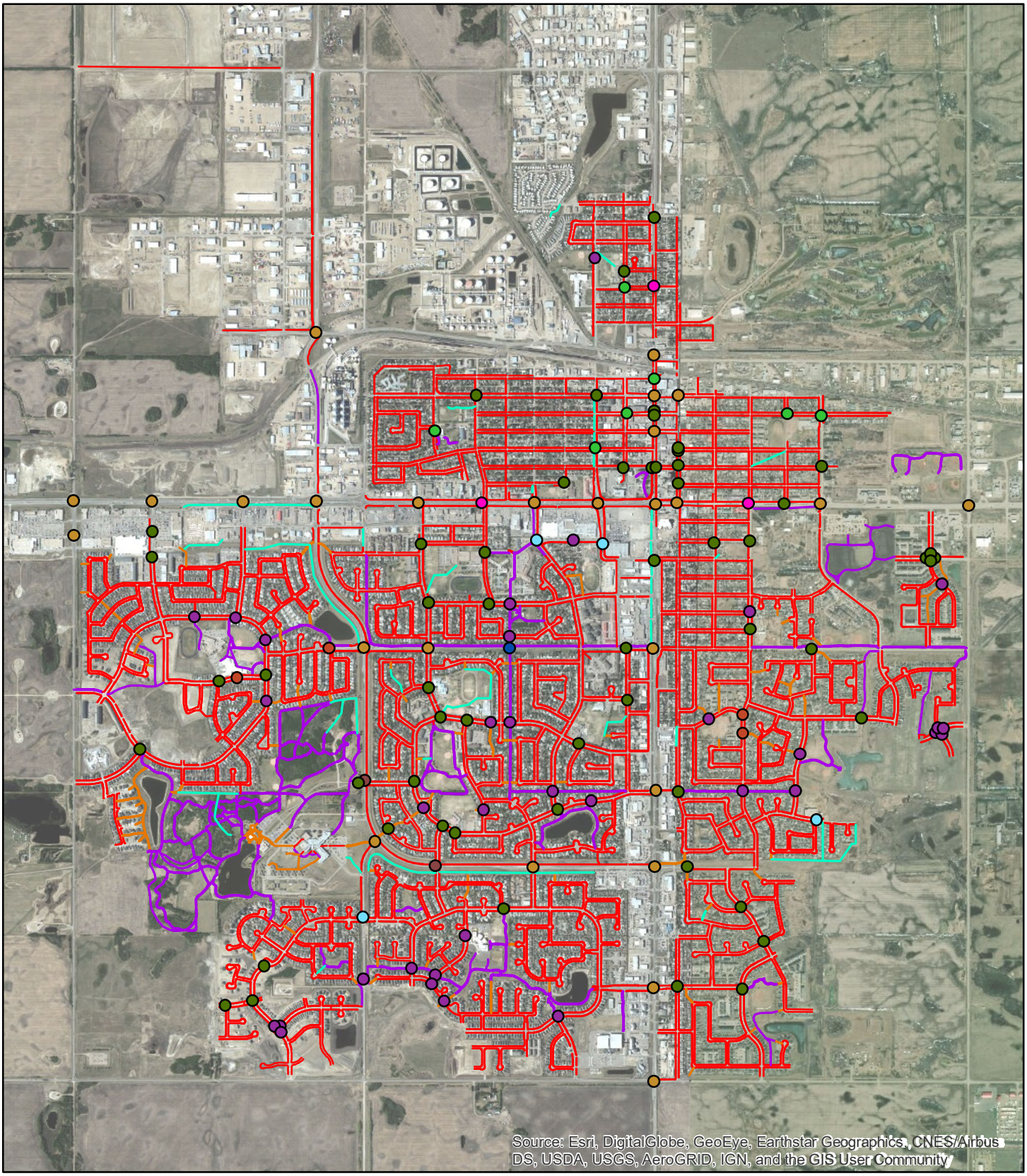
TRAILS AND SIDEWALKS MASTER PLAN

EXHIBIT 3.2: EXISTING SURFACE CONDITION



1:30,000

Crosswalk Type

- GM (P)
- GM (Z)
- RRFB (P)
- RRFB (Z)
- OF (P)
- OF (Z)
- PTS
- TS
- PL

Sidewalk Type

- Sidewalk
- Multiuse Path
- Natural Path
- Trail

0 0.125 0.25 0.5 0.75 1 km

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TRAILS AND SIDEWALKS MASTER PLAN

EXHIBIT 3.3: EXISTING CROSSWALKS

GROUND MOUNTED (GM):
Traditional ground mounted crosswalk signage mounted back to back on both sides of the with road markings.


57 Avenue, 27 Street

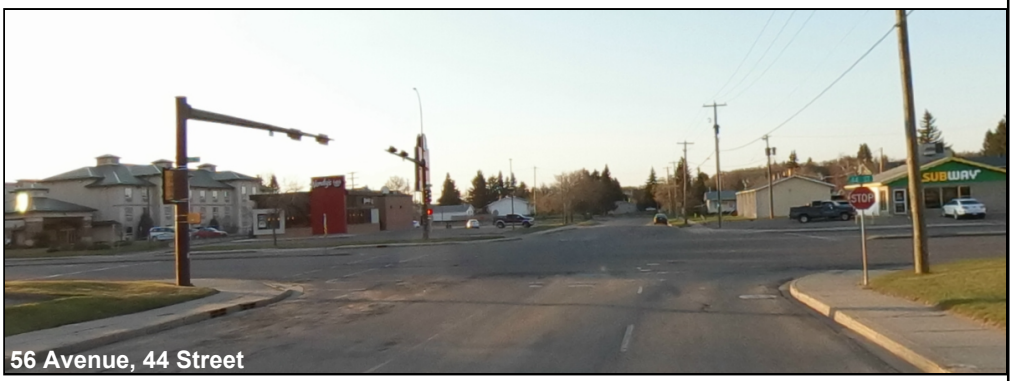
RECTANGULAR RAPID FLASHING BEACON (RRFB):
Ground mounted signage flashing light system with push button control.


59 Avenue, 23 Street

OVERHEAD FLASHING LIGHT (OF): Overhead flashing light system with push button control.


36 Street

PEDESTRIAN TRAFFIC SIGNAL (PTS): Traditional half traffic signal with push botton control. Indicates stop signal for cross street traffic.



56 Avenue, 44 Street

Others (no example shown)
Parallel (P): Parallel crosswalk markings are installed. (Eg. GM (P) = Ground Mounted with parallel crosswalk markings)
Zebra (Z): Zebra crosswalks markings are installed. (Eg. RRFB (Z) = Rectangular Rapid Flashing Beacons with zebra markings)
Traffic Signal (TS): Traditional full traffic signal. Parallel lines are used at traffic signals.
Parallel Lines (PL): Parallel crosswalk markings only. No crosswalk signage installed.

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TRAILS AND SIDEWALKS MASTER PLAN

MAP 3.4: CROSSWALK TYPE

4.0 Phase 2 (Pedestrian Crossing Safety Assessment)

Pedestrian crossings are critical for supporting the trail and sidewalk network. Pedestrian crossings can significantly improve the attractiveness of the trail and sidewalk network for the user by providing a safe way to cross roadways where it was not previously available but may not provide any value if they are perceived as unsafe due to not providing enough protection for users. A key input to the Trails and Sidewalk Master Plan is creating and applying a procedure for assessing the safety and effectiveness of pedestrian crossings that produces consistent recommendations, supports the overall goals of the project, and provides direction for assessing priority locations for improvements and capital planning.

In Phase one (Section 2.2), the City indicated that their current practices for assessing the safety and effectiveness of pedestrian crossings are by applying the Transportation Association of Canada's (TAC) Pedestrian Crossing Control Guide (PCCG). The TAC PCCG guide is an excellent tool as a starting point for creating a procedure associated with assessing the safety and effectiveness of pedestrian crossings and, with additional provisions to align with the goals of this project and local practices, will become a critical tool for this project and a future resource for the City.

4.1 TAC PCCG Summary and Applicability

The following reviews the TAC PCCG and its applicability in the City with the purpose to inform the development of the proposed pedestrian crossing safety assessment for the City, provided in Section 4.2.

The guide is a decision-making tool to help practitioners and municipalities with two (2) main goals, as follows:

- **Goal One:** Establishing the need for controlling the traffic to allow pedestrians to safely cross, and
- **Goal Two:** Identifying the type of traffic control device suitable for a location based on the site conditions.

The TAC PCCG relies on the use of an assessment procedure to justify pedestrian crossing implementation decisions. The assessment procedure outlined in the TAC PPCG intends to achieve the following four (4) objectives:

1. **Objective One:** Create a rational and defensible basis for decisions to be made.
2. **Objective Two:** Support decisions with numerical criteria and data.
3. **Objective Three:** Promote consistency in design and implementation.
4. **Objective Four:** Establish minimum thresholds or general guidelines with qualitative criteria.

The TAC PCCG assessment procedure factors in the application of engineering judgement as there is some degree of interpretation in the application and results of the procedure. The TAC PCCG also warns against installing unwarranted pedestrian crossing control devices as they may detrimentally affect road safety. The assessment procedure relies on a holistic approach to assessing pedestrian crossings involving aspects from transportation, land use planning, and urban design. Each discipline has a direct relationship with the road users and the way they utilize the road system.

The PCCG follows a simple six-step process to approaching the implementation of a pedestrian crossing control.

- **Initiation Event (Task One):** The initial event in which a request from the public is made for installing a new crosswalk or reviewing an existing crosswalk for possible improvements. The City may conduct an initial review of the location against any background data available to determine their priority for conducting a formal review. The City may review crosswalks regularly as part of their ongoing monitor and/or may initiate a review as part of a construction project.
- **Preliminary Assessment, Treatment Selection, Potential Impacts (Task Two to Four):** Includes the assessment of the crosswalk location to confirm the need for a crosswalk and the type of crosswalk treatment required. This is discussed in detail in the following section.
- **Treatment Installation, Monitoring and Evaluation (Task Five and Six):** Construction of the selected improvement, monitoring and evaluation to determine the effectiveness of the improvement compared to the expected outcomes.

4.1.1 Preliminary Assessment (Task Two)

The following is a summary and discussion of the TAC PCCG step 2, preliminary assessment, including a step, by step flow of the process. The purpose of providing the summary is to provide a discussion of challenges that are common when applying the guidelines to refine the process. The practitioner follows the step-by-step flow as outlined below to determine whether a crossing is needed.

- **Step 1 – Are traffic signals warranted (based on the TAC Traffic Control Warrant Procedure)?**
  - Yes, consider installing traffic signals.
  - No, move to step 2.
- **Step 2 – Are daily traffic volumes >1,500 with >15 Equivalent Adult Units (EAU).**
  - Yes, move to step 3.
  - No, move to step 4.
- **Step 3 – Is location a minimum of distance ‘d’ from an existing crosswalk.**
  - Yes, crosswalk warranted.
  - No move to step 5.
- **Step 4 – Is location a minimum of distance ‘d’ from an existing crosswalk.**
  - Yes, move to step 6.
  - No, crosswalk not warranted.
- **Step 5 – Is location on a pedestrian desire line**
  - Yes – Crosswalk warranted.
  - No – Crosswalk not warranted.
- **Step 6 – Is there latent pedestrian crossing demand >15 (EAUs) or is there a requirement for network connectivity?**
  - Yes, crosswalk is warrant.
  - No – crosswalk not warrant.

From the assessment procedure, the following is observed.

- **Traffic Signals:** If signals are warranted, the need for signals governs.
- **Pedestrian Volumes (EAUs) Threshold:** The volume threshold of 15 is challenging to measure at subject locations that do not currently have a crosswalk. The EAU factors pedestrian volumes based on their age/ability and requires a certain level of judgement. Notably, pedestrian crossing volumes are only needed to confirm the need for a crosswalk located on a desire line that is within distance “d” to another crossing location.
- **Traffic Volume Threshold:** The minimum daily volume threshold of 1,500 vehicles is based on the minimum practical traffic volume at which the installation of a pedestrian crossing control device should be considered. The guide indicates this value is based on available research but does not indicate whether higher or lower values are worth considering based on municipality size.
- **Crosswalk Needed (Network Connectivity Met):** If traffic- and pedestrian-volume minimums are not met, crosswalks can still be needed if it is required for network connectivity. The term network connectivity may be defined by the individual municipalities.
- **Crosswalk Warranted (Volumes Met, Desire Lines Met, Within Distance ‘d’):** If traffic volumes and pedestrian volumes are met, but the crosswalk is too close to another crosswalk, defined by distance ‘d’ a crosswalk can still be warranted if along a pedestrian desire line. Desire line requirements are loosely defined in the guide, requiring a certain degree of engineering judgement, but could be further defined by individual municipalities.
- **Crosswalk Not Warranted (Volumes Not Met, Network Connectivity Not Met):** Crosswalks are not warranted where volume minimums and network connectivity requirements are not met.
- **Crosswalk Not Warranted (Volumes Met, No Desire Line):** Crosswalks are not warranted where volume minimums are met, but the location is not on a pedestrian desire line.
- **Minimum Distance ‘d’:** Minimum distance ‘d’ is suggested to range from 100 – 200 m in the TAC guide but can be defined by the individual municipality. Distance ‘d’ could be defined based on balancing the need for prioritizing pedestrians with protecting the functional roadway classification. Lower values are appropriate on local and collector roadways and higher values are appropriate on arterials.
- **Latent Pedestrian Demand:** Estimating pedestrian demand includes conducting a trip generation analysis for each land use within a five to 10-minute walk of the crosswalk. Overall, the process is cumbersome and relies on multiple points of inputs applying engineering judgement, with no specific pedestrian demand data available and examples of utilizing the process are not known. In addition, the assessment excludes reviewing the crossing location as part of a larger network, which may be utilized by those outside of the 10-minute walking area. A simpler measure is whether the crosswalk is needed for network connectivity and latent pedestrian demand estimating is only needed in special cases for locations that do not provide network connectivity.
- **Collision History:** The assessment tool does not consider collision history, however the City may use collision history in the future (to confirm need and prioritize).

If the subject locations meet the requirement as outlined in step 2, the following step (treatment selection) applies.

4.1.2 Treatment Selection (Task 3)

If the preliminary assessment results in the need for a crosswalk, the TAC PCCG outlines a process for selecting an appropriate crosswalk type, based on daily traffic volume, speed limits and the total number of lanes (driving and parking lanes). The selection tool indicates which crosswalk type is recommended and the types of crosswalks available are outlined as follows, from the lowest level of pedestrian protection to the highest level.

- **Ground Mounted (GM1):** Traditional crosswalks signage mounted back to back on both sides of the undivided roadway or one on the right side and one in the median of a divided roadway. Twin parallel line marking is used to indicate the crosswalk. Zebra markings are used in school zones. Advanced warning signage installed, where visibility is limited. Stopping prohibition for a minimum of 15 m on each approach. Passing and lane change restrictions on multiple-lane approaches using a solid white line.
- **Ground Mounted + (GM+):** Similar to GM1, with some advanced features, including overhead signage as shown in the example.
- **Rapid Rectangular Flashing Beacon (RRFB):** Ground-mounted flashing light system with pushbuttons.
- **Overhead Flashers (OF):** Same line marking and regulatory signage as GM, except with overhead illuminated pedestrian crosswalk signage, with alternating amber flashing beacons, down lighting and pushbuttons.
- **Pedestrian Traffic Signal (PTS):** Twin parallel crosswalk markings, stop lines for vehicles, primary and secondary signal indicators (as needed), push-button, stop sign on cross street (as needed).

For each of the crosswalks available, the TAC PCCG outlines recommended and desirable crosswalk components. The recommended components are summarized in the above descriptions and illustrated in the following figure, sourced from the TAC PCCG.

Ground Mounted System (GM)

Enhanced Ground Mounted System (GM+)

Note: example illustrates overhead mounted signs and a curb extension. Other available enhancements are not illustrated in the picture.

Rectangular Rapid Flashing Beacon System (RRFB)

Overhead Flashing Beacon System (OF) or Special Crosswalk

Pedestrian Signal (PTS)

Figure 4.1: Typical Crosswalk Types Recommended by the Guide (Source: TAC PCCG, 2019)

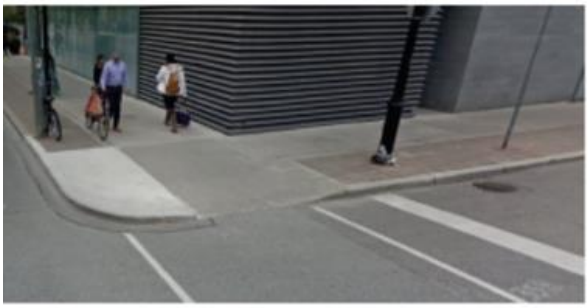
These components are those in addition to the recommended components and may be selected/used based on local needs. There is no direction available in the guide indicating when and how these desirable components should be used. Desirable crosswalk components are outlined in the following examples.

Raised refuge – continuous centre median

Raised refuge – pedestrian crossing island

Offset crosswalk

Curb extension



Curb corner radius reduction

Raised crosswalk

Figure 4.2: Desirable Crosswalk Components

From the treatment selection, the following is observed.

- **Illumination:** Downlighting (illumination at the crosswalk), is only required for OF crosswalks. There is no requirement for downlighting at other crosswalks. Consideration for installing downlighting at all crosswalks should be given based on the shorter daylight periods in Northern Alberta.
- **Sight Distance:** The guide explicitly recommends the need to ensure there is adequate sight distance at crosswalks and requires that sightlines meet the requirements outlined in the TAC Geometric Design Guide and recommends applying various tools to address sightlines. Sightline improvements are not included within the recommended component; therefore, it is implied that the designer will review sightlines and recommend sightline improvements necessary. To expand on the guide, sightline improvements should be outlined in the recommended components for each crosswalk type. This is recommended as parking is allowed up to 5 m from the crosswalk and vehicles parked in this area are known sightline obstructions. To improve sightlines due to parked vehicles a no parking zone greater than 5 m is required and this should be assessed for each site.
- **Overhead Pedestrian Crossing Sign:** In previous versions of the pedestrian crossing guide, overhead crossing signs were an acceptable solution, but appear to be removed from the guide in the 2019 version. Any use of overhead crossing signs should be reviewed.

4.2 Proposed Lloydminster Pedestrian Crossing Safety Assessment

Adoption of the TAC Pedestrian Control Manual is proposed, with several additional measures of refinement, applicable to the City of Lloydminster.

Initial Event (Task One)

The decision to assess the need for a crosswalk or improvement to an existing crosswalk may be made proactively or reactively and both responses are acceptable based on the TAC PCCG. Example situations which could initiate a review include the following events:

- Request from the public.
- Internal decision based on internal monitoring.
- As part of an existing operations study (similar to this one), identifying, assessing and prioritizing the need for improvements.
- As an input to a construction project, presenting an opportunity for installing improvements.
- At a planning level, as part of a future development transportation planning study.

Preliminary Assessment (Task Two)

The primary test to determine whether a subject location may be a candidate for a crosswalk is the daily traffic volumes and number of traffic lanes.

- **Initial Screen line:** The TAC PCCG minimum daily traffic volume threshold is 1,500 vehicles per day and 15 EAU's per hour. The City should consider applying a 20% reduction factor to the daily traffic volume threshold, reducing it to 1,200 vehicles per day. This is suggested as a means of respecting the relatively smaller size of the City and is based on experience from ISL, where there is often higher levels of traffic congestion accepted by residents in larger Cities.

- **Secondary Assessment:** Where the daily volumes are met, the following procedure provides the methodology for conducting crossing assessments.
  - Step 1 – Are traffic signals warranted?
    - Yes, consider installing traffic signals.
    - No, move to step 2.
  - Step 2 – Is the location distance ‘d’ from an existing crossing?
    - Yes, move to step 3.
    - No, move to step 4.
  - Step 3 – Is the location needed for network connectivity?
    - Yes, consider installing a crosswalk.
    - No, move to step 4.
  - Step 4 – is the location on a pedestrian desire line?
    - Yes, move to step 5.
    - No, a crosswalk is not required.
  - Step 5 – Are traffic volumes >1,200 vehicles per day
    - Yes, move to step 6.
    - No, a crosswalk is not required.
  - Step 6 – Are pedestrian volumes >12 per hour
    - Yes, consider installing a crosswalk.
    - No, crosswalk not required.
    - If pedestrian volumes are unknown move to step 7.
  - Step 7 – Conduct a pedestrian generation study to confirm that pedestrian demand is >12 per hour
    - Yes, a crosswalk is required.
    - No, a crosswalk is not required.

Distance D

- The spacing between crosswalks that applies varies as a balance between protecting roadway function and providing a high-quality network. For lower classification of roadways, shorter spacing is acceptable and for higher classification of roadways, longer spacing is acceptable. In a depending on roadway functional classification.
  - Local/Collector = 150 m
  - Arterial = At public intersections or mid-block @ 200 – 250 m spacing

Network Connectivity

- Define network connectivity as providing connectivity for a trail system or sidewalk system within a higher pedestrian utilized area (downtown and around schools) located on collector and local roads. Define network connectivity as providing connectivity for a trail system crossing an arterial roadway.

Desire Lines

For the trails and sidewalk master plan, the following recommendations are proposed.

- Adapt the TAC assessment procedure with the following additional provisions.
- Define desire lines as those providing a direct connection between specific destinations in Lloydminster where there is a need to prioritize pedestrian movement. The TAC guide provides some examples of desire lines in areas around schools, community centres, hospitals, parks and seniors homes, but requires the evaluator to apply engineering judgement.
- Specific areas in the City to focus on providing crossing treatments include the followings:
  - School zones
  - Playground zones
  - Downtown (include area boundary)

Treatment Selection (Task Three)

Utilize the crosswalk types as recommended by the guide, with the following exceptions:

- Zebra markings are used at mid-block crossings.
- Pedestrian downlighting is installed for all crosswalk types.
- Stopping sight distance requirements are assessed for all crosswalk types and provisions for improving sightlines are installed. Suggested measures include increased no parking areas and installing curb extensions.

4.3 Pedestrian Crossing Assessment

The proposed crossing safety assessment is applied to the missing crosswalks identified in the preliminary gaps analysis (section 3.3) of this report.

4.3.1 Missing Crosswalks (Arterials)

Missing crosswalks at arterial roadways are assessed applying the recommendation crossing safety assessment. Detailed assessment sheets and notes are provided in **Appendix D**. Detailed traffic volumes are provided in **Appendix C**.

1. **44 Street and 59 Avenue:** Needed for connectivity because it is the end of the sidewalk on both sides of 44 Street, connecting neighbourhoods north/south of 44 Street to land retail and other land uses. Discussed with stakeholders as a highly used crossing location.
2. **62 Avenue (south of 43 Street):** Needed for network connectivity because it would provide a key connection for the neighbourhoods and trails. Could be placed at 43 Street as a half signal to provide connectivity across 43 Street for more users (combined users on the trail and 43 Street).
3. **50 Avenue and 35 Street:** Needed for connectivity due to lack of east/west connections crossing 50 Avenue between 36 Street and 27 Street.
4. **50 Avenue and 15 Street:** Needed for connectivity providing access between residential and commercial areas east/west of 50 Avenue as well as the recreation centre to the west.
5. **59 Avenue and College Access:** Connects to the natural trail leading to college.
6. **36 Street and 43 Avenue:** Marked as a missing crosswalk in the preliminary gaps analysis but upon further review is an all-way stop.
7. **44 Street and 48 Avenue:** Needed for network connectivity to connect sidewalks on 44 Street. Upon further review noted to likely have very low pedestrian demand as this does not connect to any significant destinations. No crosswalk is recommended.

Table 4.1: Missing Crosswalks Arterials

Location	Number of Crossing Lanes	Crossing Daily Traffic Volumes	Proximity to Alternative	Recommended Treatment
44 Street/59 Avenue	Six	22,500	250 m (east) 300 m (west	Pedestrian Half Signal
62 Avenue (south of 43 Street)	Four	12,500	200 m (north) 700 m (south)	RRFB
50 Avenue/35 Street	Two	4,000	220 m (north) 570 m (south)	Ground Mounted (P)
50 Avenue/15 Street	Two	17,000	220 m (north) 280 m (south)	RRFB
59 Avenue/College Access	Two	6,000	205 m (north) 230 m (south)	GM (Z) or RRFB

4.3.2 Missing Crosswalks (Collectors)

Missing crosswalks on collector roadways noted in the preliminary gaps analysis will be reviewed in the future by the City through additional data collection (new traffic volumes) and detailed sightline analysis. To assist the City in determining which crosswalks should be given higher priority review, network connectivity was reviewed to understand the probable demand for the crosswalk based on its location within the larger sidewalk and trails network. For example, a missing crosswalk located along a continuous network corridor is assumed to have a higher level of demand, compared to a crosswalk located in a more isolated area.

This was supplemented by reviewing publicly available information from a popular smartphone-based application for tracking a wide range of outdoor recreational and fitness activities, in which walking, cycling and running are typically the most popular types of use in cities. Public data used is updated monthly, represents data collected over the previous two years and illustrates user collected information into heat maps showing areas that have relatively higher use. The use of this data was suggested by one of the stakeholders and their heat maps became available to the public in September 2020, purposefully as a tool for active transportation network planning purposes. The data represents the best possible data in lieu of collecting new information and is acceptable for understanding relative demand.

The anticipated demand based on network connectivity and Strava heat maps is illustrated in the following table. The Strava heat maps are provided in **Appendix G**. Relative demand is illustrated using several pedestrian symbols, e.g. to .

Table 4.2: Missing Crosswalks (Collectors), Review Priorities

Location	Relative Demand	Connectivity	Review Priority
52 Avenue/18 Street		Multi-Use Path	1
51 Avenue/27 Street		Sidewalk/Trail	2
47 Avenue (Mid-block) – south of 19 Street		Sidewalk/Trail	3
21 Street/61 Avenue		Sidewalk	4
53 Avenue/23 Street		Sidewalk	5
72 Avenue (Mid-block) – west of 70 Avenue		Multi-Use Path	6
28 Street (Mid-block) – east of 56 Avenue		Multi-Use Path	7
56 Avenue (mid-block) – south of 30 Street		Multi-Use Path	8
16 Street (Mid-block), west of 54 Avenue		Trail	9
22 Street/61 Avenue		Trail	10
14 Street and 47a Avenue		Sidewalk/Trail	11
27 Street/53 Avenue		Sidewalk	12
66 Avenue/42 Street		Sidewalk	13
13 Street and 47a Avenue		Sidewalk	14
45 Avenue and 32 Street		Sidewalk/Trail	15
29 Street/67 Avenue		Sidewalk	16
29 Street/66 Avenue		Sidewalk	17
52 Avenue/34 Street		Sidewalk	18
52 Avenue/23 Street		Sidewalk	19
52 Avenue/20 Street		Sidewalk	20
15 Street/55 Avenue		Sidewalk	21
22 Street and 47 Avenue		Sidewalk	22
43 Street and 57 Avenue		Sidewalk	23
43 Street and 56 Avenue		Sidewalk	24
54 Street and 49 Avenue		Sidewalk	25
47 Avenue (Mid-block), south of Barr Crescent		Sidewalk/Trail	26
51 Avenue/31 Street		Sidewalk	27
24 Street and 47 Avenue		Sidewalk	28

4.3.3 Missing Pedestrian Ramps

Missing pedestrian ramps are a barrier to people travelling in wheelchairs or motorized scooters and users pushing strollers and other wheel transportation needs. Disoriented non-standard pedestrian ramps are those with missing, or improperly oriented tooled grooves indicating the direction of travel for visually impaired users of the sidewalk and trails network. Improving the trails and sidewalk network and making it accessible for all users includes installing missing pedestrian ramps or replacing disoriented, non-standard pedestrian ramps. For reference, the City's standard drawing 2-200 is provided in the following figure, illustrating the general layout and tooled groves.

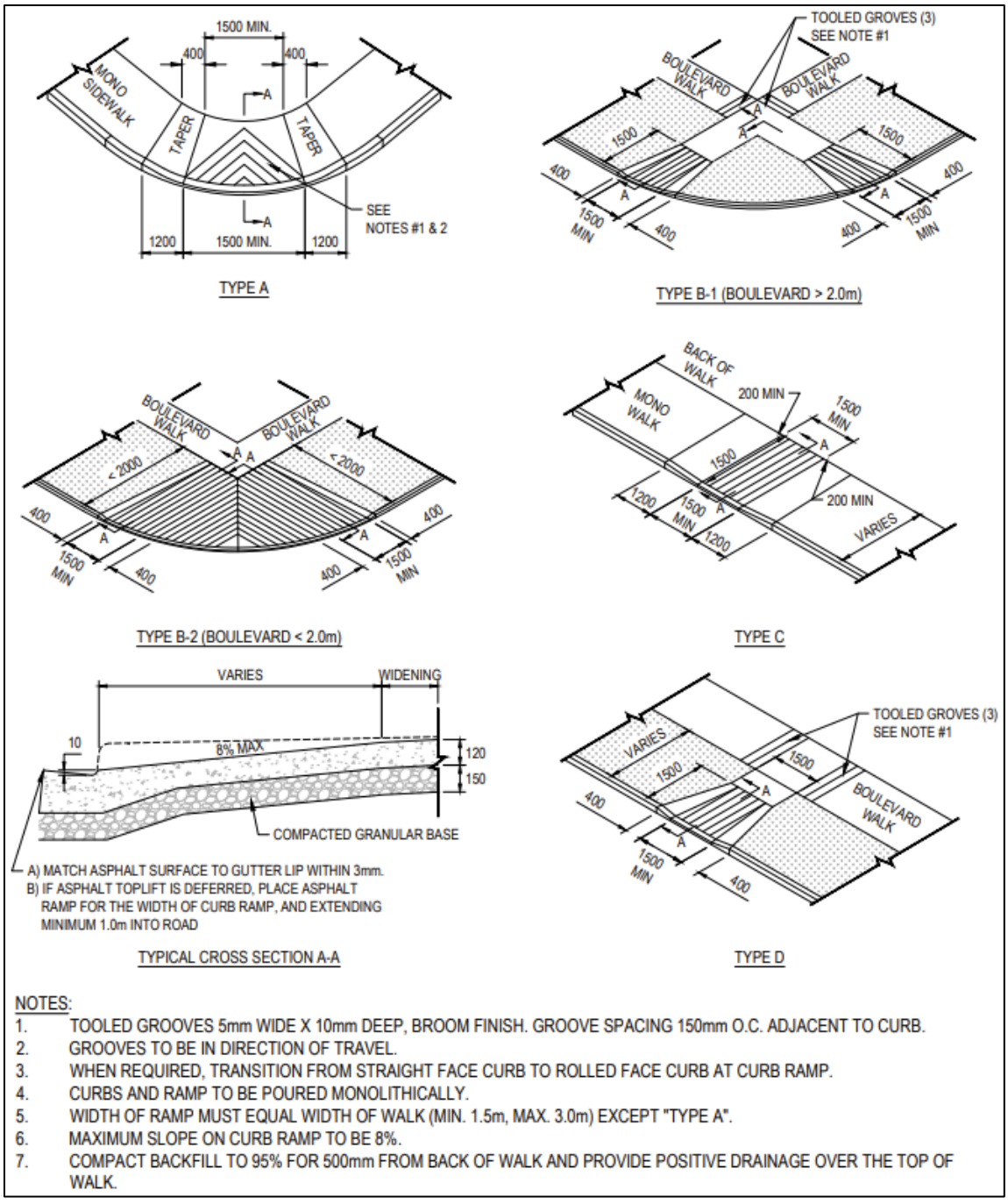
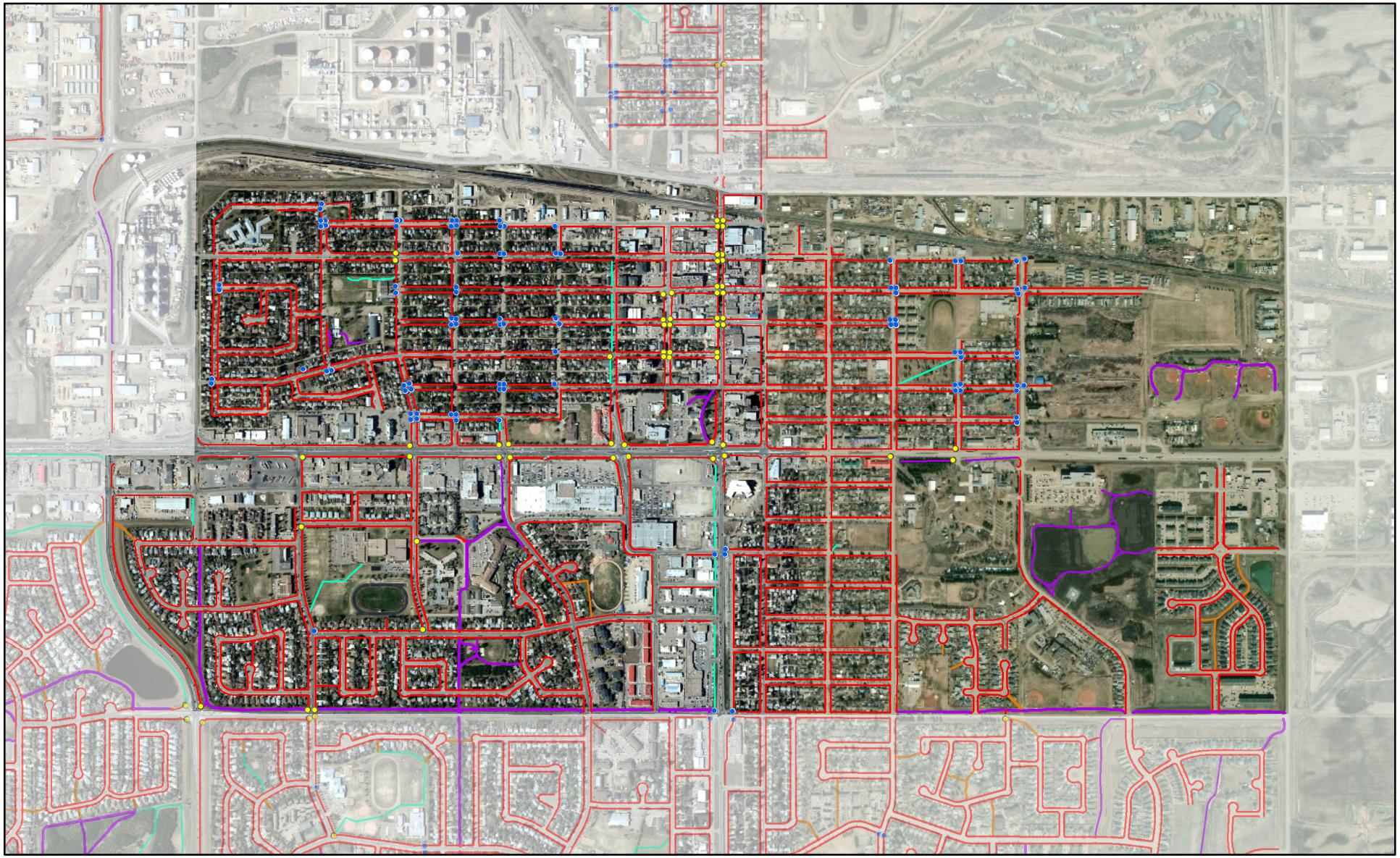


Figure 4.3: Pedestrian Curb Ramp (Standard Drawing 2-200)

Overall, there are many areas of the City that have applied the pedestrian ramp standard shown, except for some areas the central core, where it appears to have been developed prior to the pedestrian ramp standard being adopted. Exhibits 4.1 to 4.4 illustrate locations where there are missing pedestrian ramps or non-standard, disoriented pedestrian ramps, which should be replaced.



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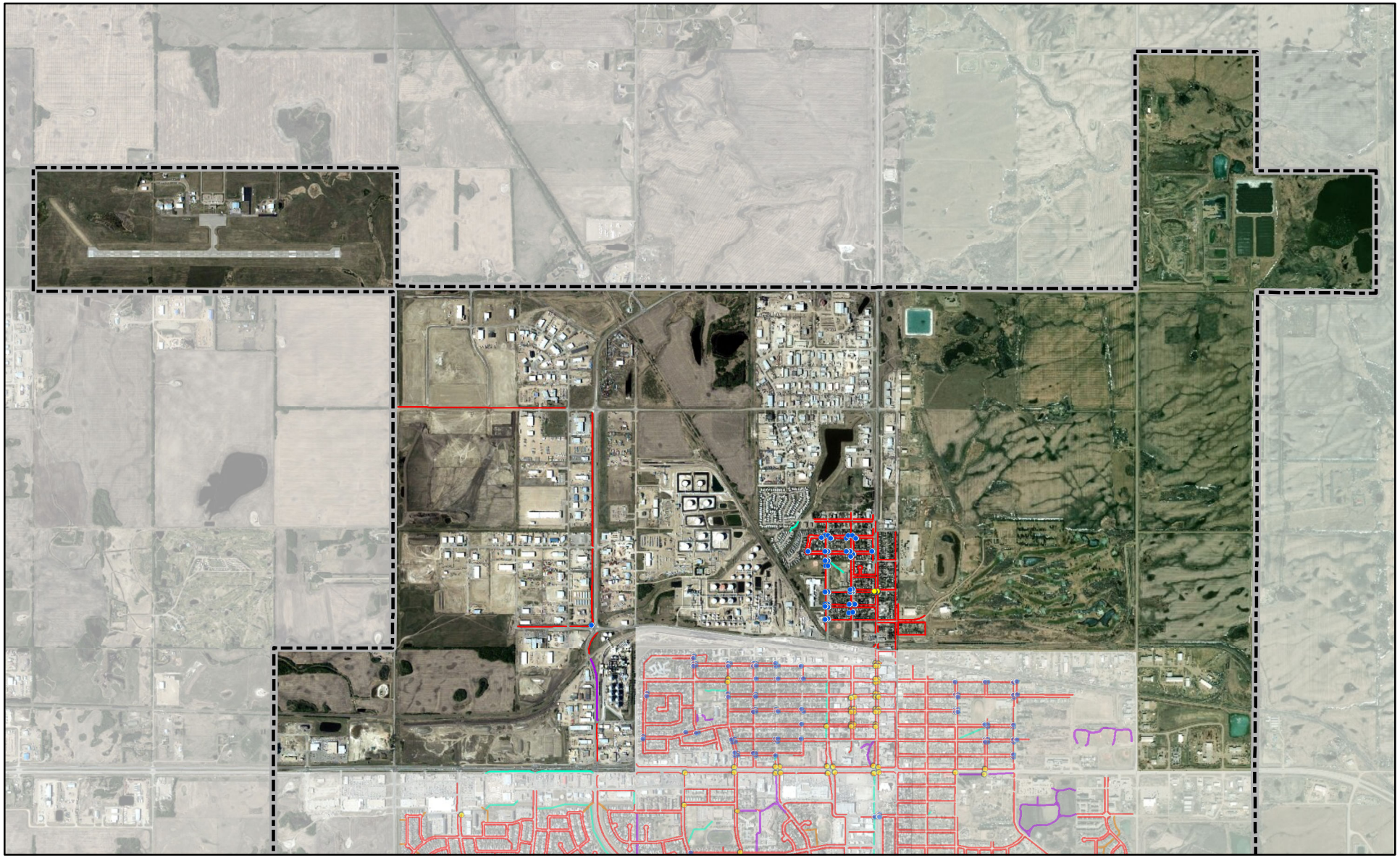
TRAILS AND SIDEWALKS MASTER PLAN

EXHIBIT 4.1: PEDESTRIAN ACCESSIBILITY REVIEW CENTRAL



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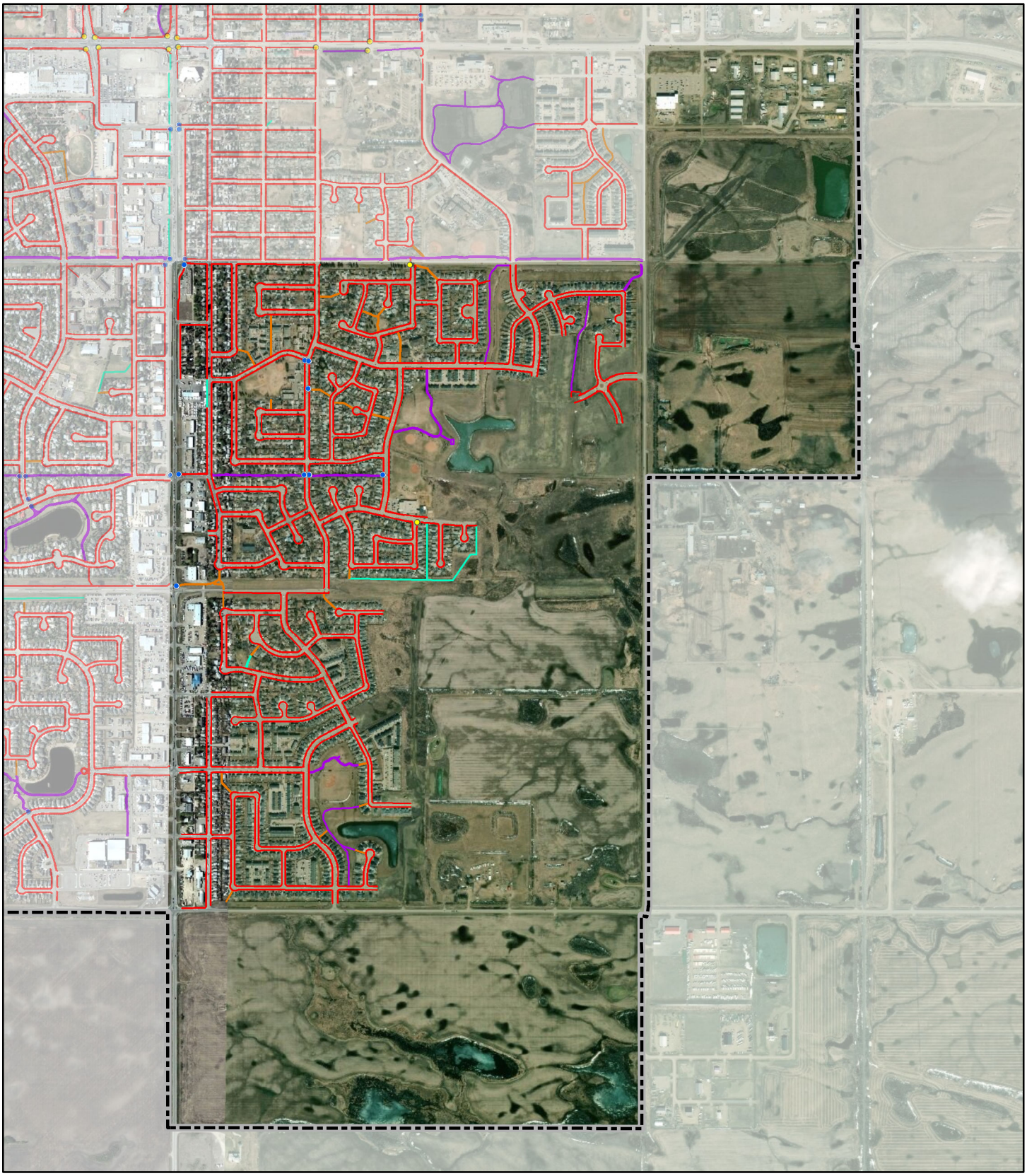
TRAILS AND SIDEWALKS MASTER PLAN

EXHIBIT 4.2: PEDESTRIAN ACCESSIBILITY REVIEW NORTH



N

1:20,000

- City Boundary
- Sidewalk
- Multiuse Path
- Natural Path
- Trail
- Missing Ramp
- Ramp Orientation

0 0.075 0.15 0.3 0.45 0.6 km

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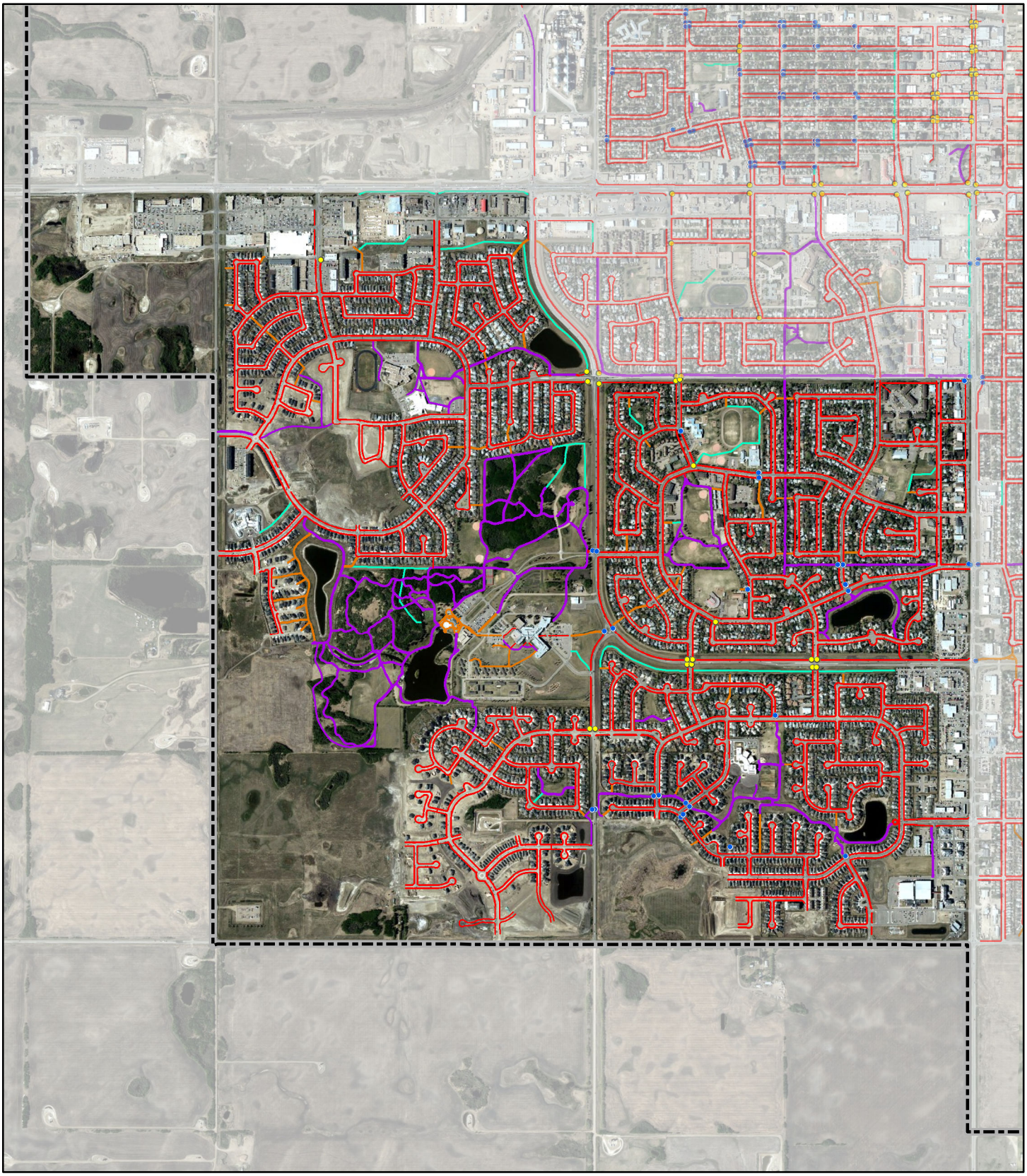
EXHIBIT 4.3: PEDESTRIAN ACCESSIBILITY REVIEW SOUTHEAST



N

1:23,000

- City Boundary
- Sidewalk
- Multiuse Path
- Natural Path
- Trail
- Missing Ramp
- Ramp Orientation

0 0.1 0.2 0.4 0.6 0.8 km

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EXHIBIT 4.4: PEDESTRIAN ACCESSIBILITY REVIEW SOUTHWEST

5.0 Phase 3a (Stakeholder Engagement Round 1)

5.1 Stakeholder Engagement Round 1 Feedback

On August 26, 2020, the City of Lloydminster Administration hosted a virtual stakeholder workshop regarding the Trails and Sidewalk Master Plan. During this workshop, the project team shared with participants project information and gathered feedback to confirm and refine the Project Vision and identified connection issues and opportunities in the current network.

The virtual workshop consisted of both group discussion and small break-out rooms where participants could discuss ask questions and provide feedback directly to the project team. Seven total participants joined the project team, with five participants attending the 12 to 1:15 p.m. workshop and two participants joined during the 6 to 7:15 p.m.
workshop

Feedback gathered from these workshops will help refine and finalize the project vision, identify gaps, and provide further local knowledge in the current network assessment.

5.2 Draft Project Vision Feedback

The draft project vision was presented as follows:

- The Trails and Sidewalk Master Plan improves the existing network as follows:
  - Improving access and ease of use by increasing connectivity through the existing network.
  - Creating a safe and welcoming space for users of all ages and abilities to enjoy the natural environment.
  - Encouraging active modes of transportation, physical activity and outdoor recreation.

Much of the project vision was were received, except that stakeholders felt the need to expand the vision in certain areas.

Likes:

- Considers safety, increasing connectivity, welcoming, and inclusive for all ages and abilities.

Dislikes:

- Integrating new technologies to improve user experience and wayfinding.
- Consider greater connectivity needs, outside of the City, expanding into future development.
- Consider the high level of importance to maintaining the network and environment (trees).
- Could include improving lighting to make people feel safer

5.3 Preliminary Gaps Analysis Feedback

Overall, stakeholders received the preliminary gaps analysis positively, with some comments provided that are worth noting as follows:

North

- Request for flashing crosswalk at 50 Street near the Pioneer Lodge (58 Avenue).
- Concerns with the large radius at the northeast corner of 50 Street and 57 Avenue
- Plan needs to consider connecting with North East ASP and Neale Lake area

Central

- 41 Street @ 50 Avenue is lacking lighting, with lighting on the non-sidewalk side, there is a desire for lighting on the sidewalk side as well.
  - Concerns were also noted regarding a possible short pedestrian crossing interval at the signal.
  - Desire to reduce pedestrian crossing width.
- Desire to have seen an improved sidewalk on the east side of 47 Avenue, from 36 Street to 44 Street.
- Missing connections between Jaycee Park and trail along the south side of 44 Street.
- Overall missing trail system in the central area of the City.
- Downtown is not considered pedestrian-friendly and is highly underutilized. New developments should consider pedestrians and multi-use access.

South East

- Opportunity for an expanded trail network, connecting 40 Avenue and 12 Street.

South West

- Need for better connections between Bud Miller Park and Kinsman Park, including expanded or wider sidewalks and trails.
- Signage and wayfinding needed for connecting to Bud Miller Park.
- Long traffic signal cycle length at 36 Street and 59 Avenue results in long wait times for pedestrians to cross.
- 12 Street is missing a sidewalk and is too narrow for walking.
- Expansion of Bud Miller Park trails is requested to give people different areas to use, reducing congestion throughout the park. A second access point to Bud Miller Park is also requested.
- Sidewalk along the College Drive could be improved to a trail with the type of users.
- Issues with drainage in Bud Miller Park, with some trails unusable during spring.

General comments

- Trails and sidewalks to school need to be maintained.
- Maintenance is an important issue to address, including upkeep to trees and snow clearing.
- Where the quality of the sidewalk is poor, or it is narrow, people may choose to use the road.
- Potential interest for the City to host events such as marathons, but infrastructure needs to support the length of segments needed for events.
- Desire for wayfinding.

Detailed stakeholder feedback is provided in **Appendix E**.

6.0 Phase 3a (Analysis)

The following section assesses the feedback received to date to generate project prioritization principals. Prioritization includes identifying improvements for the trails and sidewalk network for the short, medium and long terms. Improvements in the short term are those suggested for the City to prioritize in the one to five-year horizons, while those in the medium and long terms are those the 5 to 20-year horizons and depend on funding availability.

6.1 Sidewalk and Trails Network

The valuable insight gained from round one of stakeholder and public engagement providing levels of importance for improving the sidewalk and trail network directs the generation of the prioritization plan. Input from the public and stakeholders is provided in Section 2.3 and feedback received outlining the levels of importance for improving the network are re-iterated for reference as follows:

Public and Stakeholder Feedback (levels of importance):

1. **Safety:** Safety for users of trails, sidewalks and at intersections.
2. **Connectivity:** Network connectivity of trails and sidewalks as an option for getting to key destinations.
3. **Accessibility:** Accessibility for all types of users, ages and abilities (Examples: wheelchair, walker, stroller accessibility, etc.)
4. **Protecting Environment:** Protecting the natural environment and maintaining greenspace.
5. **New Expansion:** Expanded trail system providing more areas for recreation purposes.
6. **Wayfinding:** Wayfinding signage (Examples: network maps, directional signage, trail names or colours, etc.
7. **User Experience:** User experience enhancements through trail amenities (Examples: benches, gazebos, public art, educational plaques, etc.)

Interpreting the input from public and stakeholders and generating principals for identifying short, medium- and long-term priority is outlined as follows:

Short-Term Priority (minimum grid on arterials and between destinations)

- Improving safety, connectivity and accessibility by providing a minimum grid of sidewalks and trails along busy arterial roadways, where there is no available sidewalk or trail and between important destinations where there is a higher number of users expected, including to/from Bud Miller Park and between the network and important destinations (schools, employment and shopping areas).
- Improving safety, accessibility at crosswalks by assessing existing and/or missing crossing points and installing appropriate safety improvements where the trail and sidewalk network cross busy arterial roadways.
- Improve accessibility by installing curb ramps along the network on arterials and along the trail network.

Medium-Term Priority (minimum grid enhanced, collectors and locals, within parks)

- Improving safety, connectivity and accessibility by enhancing the grid of sidewalks and trails along local and collector roadways, where there is no sidewalk or trail, within the recreation trail/sidewalk network, including hard surfacing connections that provide a circuitous route and/or along direct desire lines and where there is a clear natural worn-in path.
- Further enhancing the grid by prioritizing secondary connections along arterial roadways.
- Improve accessibility by installing curb ramps along the network on collectors and local and along the trail network.

Long-Term (expanded grid)

- Additional expansion to the network, improving areas not included in the short-term and medium-term plans.

The prioritization plan is provided in **Appendix F** as these were the subject of the next round of stakeholder and public engagement.

6.2 Crosswalks

6.2.1 Arterials

Prioritization for crosswalks is based on the following criteria.

1. **Safety:** Protecting for vulnerable road users includes prioritizing crosswalks at locations with a higher number of lanes and a higher volume of daily traffic.
2. **Proximity to Alternative (connectivity and accessibility):** A larger distance to an alternative crossing location increases the extra distance for active modes of transportation to travel. Crosswalks that are further from alternatives are given higher priority. This also improves network connectivity and accessibility.
3. **Crossing Demand:** Prioritizing crossing where there is a high crossing demand aligns with the prioritization principles for improving the network connectivity and accessibility. Collecting crossing volumes at non-crossing locations is not practical, therefore crossing demand is reviewed qualitatively based on adjacent land uses and connectivity within the network and illustrated using several pedestrian symbols, e.g. 🚶 to 🚶🚶🚶🚶🚶.

Table 6.1: Crosswalk Prioritization

Horizon	Location	Traffic Lanes	Traffic Volumes	Proximity to Alternative	Demand	Priority
Short Term	44 Street/59 Avenue	Six	22,500	250 m (east) 300 m (west	🚶🚶🚶🚶	1
	50 Avenue/15 Street	Two	17,000	220 m (north) 280 m (south)	🚶🚶🚶🚶	2
	62 Avenue (south of 43 Street)	Four	12,500	200 m (north) 700 m (south)	🚶🚶🚶	3
	59 Avenue/College Access	Two	6,000	205 m (north) 230 m (south)	🚶🚶	4
	50 Avenue/35 Street	Two	4,000	220 m (north) 570 m (south)	🚶	5

7.0 Phase 3b (Stakeholder and Public Engagement Round 2)

In October and November 2020, a digital engagement campaign was open from October 26 until November 16, 2020, to gather feedback from stakeholders and the public to inform the development of the Trails and Sidewalk Master Plan. The following was asked:

- Level of support for the Project Vision.
- Missing Gaps.
- Level of support for the Areas of Prioritization.

The online engagement was conducted on the City's webpage: yourvoicelloyd.ca/trails and included the following opportunities:

- Online survey.
- Stakeholder Workshop.

7.1 Public Engagement Round 2

There were 42 total participants in the online survey. The overall key themes were developed with respect to both the diversity and frequency of comments heard. The summary of comments is provided as follows and the detailed report is provided in **Appendix F**.

Project Vision Feedback

Survey participants were asked about their level of support for the project vision and the results are shown in the following figure.

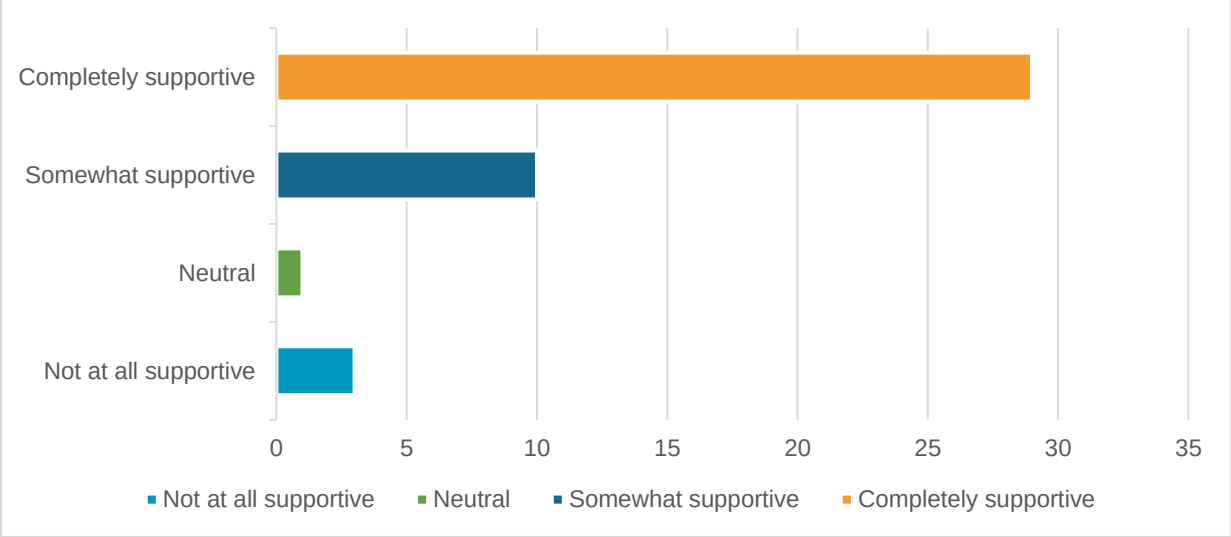

Figure 7.1: Project Vision Responses (Public Survey)

As a percentage, the responses from the public regarding the project vision are as follows.

- 91% supportive (67% completely supportive - 23% somewhat supportive).
- 7% not supportive at all.
- 2% Neutral.

The results indicate a very high level of support for the vision.

Project Priorities Feedback

Survey participants were about their level of support for the priorities shown on each of the plans and the results were overall positive as shown in the following figure.

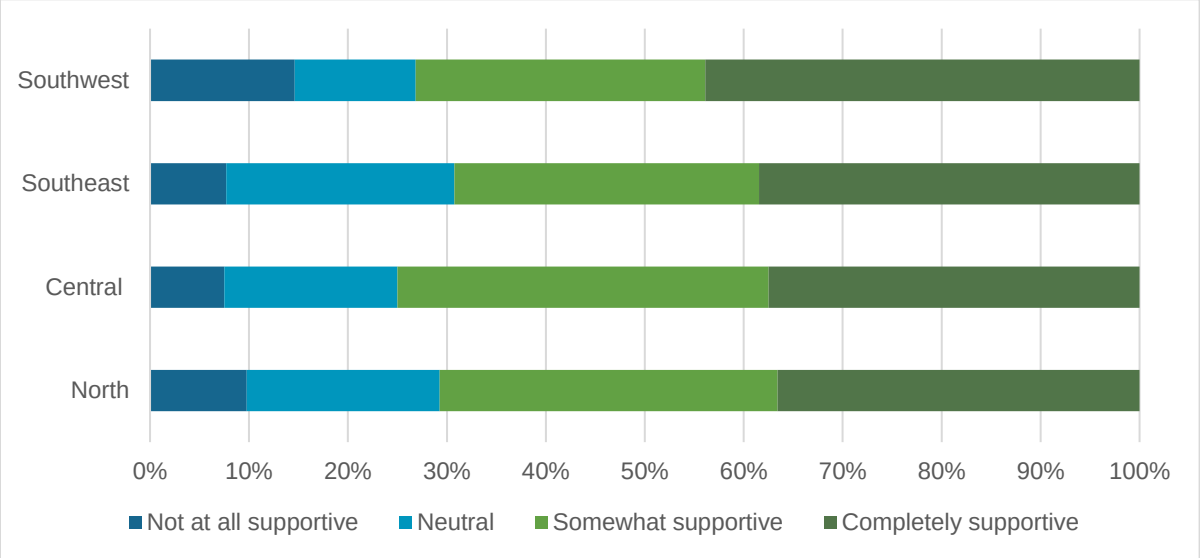

Figure 7.2: Project Priorities Responses (Public Survey).

As a percentage, the responses from the public regarding the project priorities are as follows:

- 69 to 75% supportive (37 to 44% completely supportive – 29 to 38% somewhat supportive).
- 8% to 15% not supportive at all (highest not support in the southwest).
- 12 to 23% Neutral.

The results indicate good general support (~2/3 support) for the project priorities. The specific responses receive inform site-specific areas where additional consideration is needed and is provided as follows.

- North Project Priorities
- Consider connections for the future NE redevelopment.
- Add trail along 54 Street near the cemetery.
- Add connections in the industrial area.
- Add crossings across the rail tracks and on 59 Street at 52 Avenue.
- Add a multiuse trail from 62 Street and 62 Avenue to 67 Street and Highway 17.
- Lower priority of 52 Street.

Central Project Priorities

- Add a multi-use path from 36 Street and 50 Avenue to 36 Street and 47 Avenue.
- Add crossing across Highway 17 at 44 Street.
- Add trail on the east side of Highway 17 between Highway 16 and 36 Street.

South East Project Priorities

- Add connections throughout residential neighbourhoods to create a continuous multi-use system for both people who walk and cycle.
- Add path from 45 Avenue and 29 Street East to 40 Avenue.
- Add connections between a baseball diamond and Winston Churchill School and link to the bike path in Jaycee Park.
- Add connectivity to Jaycee Park, such as from 18 Street.

South West Project Priorities

- Add connections between Lakeside and College Park and Bud Miller Park.
- Add connection between trail at 65 Avenue and 35 Street to 75 Avenue.
- Add crossing at 43 Street and 62 Avenue, and suggestion of an overpass.
- Add path further south along the east side of 59 Avenue between 25 Street and 23 Street to join up to College Park School.
- Lower priority for trails connecting Bud Miller Park around 67 Avenue.
- Keep natural trail south of 28 Street as is.
- Add a widened sidewalk east-west along 29 Street to better connect Bud Miller with Kinsman Park.

General comments:

- Keep natural paths as natural, not paved.
- Ensure maintenance of sidewalks and trails.
- Lower priority for trails along highways and major roads.
- Lower priority of sidewalks and trails along 75 Avenue, Highway 17, and 12 Street.
- Increase maintenance of existing trails and sidewalks and consider winter weather maintenance requirements, such as clearing overgrown foliage and snow.
- Include considerations for placemaking.
- A desire for site-specific engagement on individual paths, particularly regarding additional access into Bud Miller Park.
- Questions about construction timelines.
- Add path on 12 Street following the ring road to connect to 75 Avenue.

7.2 Stakeholder Engagement Round 2

There were six participants in the virtual workshops. The overall key themes were developed with respect to both the diversity and frequency of comments heard. Specific responses are provided as follows:

North Project Priorities

- 52 Street is a busy arterial and it will connect busy areas together (residential and industrial) but, it should be prioritized later in the short-term category.
- 52 Street and Highway 16 trails are needed.
- Lloydminster Village access points on 57 Street for buses and sidewalks for patrons.
- Concern about the use and benefit of prioritizing paths from residential areas to industrial areas.

Central Project Priorities

- Adding a crossing at 44 Street and 48 Avenue.
- Add enhanced crossing (flasher) along Highway 17, specifically at 42 Street (connection to Superstore) as a priority.

South East Project Priorities

- Add paths around the pond in Jaycee Park to create additional park options in the City.
- Make sure there is an opportunity for trail users to move north and south in this section to service existing and future communities.
- Add connections between 44 Street and 32 Street.
- Look for other opportunities in the future to add trails where natural paths are starting.
- Concerned about the pace of development of the areas south of Jaycee Park and making sure the sidewalks and trails are developed along with the communities.
- Concern about the Saskatchewan side being overlooked in the development of communities and amenities.

South West Project Priorities

- The sidewalk along 50 Avenue is a high-priority in the area, as it connects communities to service areas and business/places of work.
- Adding a path from the College south along 59 Avenue.
- Lower the priority of 75 Avenue.
- The connection along 59 Avenue (between Bud Miller Park and 36 Street) should be an “early” medium-term priority.
- Concerned about the area connecting 59 Avenue to Bud Miller Park, but desire to improve the entrance and traffic flow to Bud Miller Park.

General Comments

- Cyclists and runners would like to see a ring-trail around the City in the future.
- Routes/connections surrounding the schoolyards should be given higher priority.
- Add wayfinding signage for the trails system within Kinsmen Park and the transition out of the park and add signage to short-term priority.
- Consider collaborative opportunities to create safe bike lockups with the communities (City, residents, businesses, non-profits).

8.0 Conclusions And Recommendations

8.1 Conclusions

The Trails and Sidewalk Master Plan was developed through several phases including best practices review, current Practices, internal and external engagement, inventory and analysis, preliminary prioritization to guide the City with future infrastructure planning and decision making. The following conclusions are made based on this study.

8.1.1 Baseline (Section 2.0)

Establishing a baseline understanding for conducting the project included a review of existing plans and policies that affect the plan development, a review of current practices for maintaining and expanding the network, and a review of similar studies conducted by other municipalities through the best practices review. The baseline also included engaging with internal stakeholders and conducting a public survey to understand existing needs and to develop a draft project vision.

A summary of conclusions is provided based on each area of review.

Best Practices Review

Five similar studies were reviewed for mostly similar sized municipalities.

- Initiating this study was driven by City Council, rather than a specific higher-level planning document as found in other municipalities.
- Developing a vision statement in this study is important as an overarching directive for developing the plan, influencing decision making, evaluating options and finalizing recommendations.
- Four of five documents reviewed use a qualitative prioritization system and this is recommended for the City of Lloydminster. Developing a detailed prioritization system, like the complex weighted scoring used in Saskatoon's Active Transportation Plan is not recommended.
- Other items in this report, including gaps assessment, public and stakeholder engagement and capital planning are inconsistent with other studies reviewed.
- Developing and applying techniques for evaluating pedestrian crossing safety was not found in other documents reviewed but is included in this study making it unique.

Current Practices Review

This project is closely linked to and informed by the City's existing policies and plans. Documents and practices reviewed to understand implications for completing this project are as follows:

- **Statutory Plans/Bylaws:** Municipal Development Plan (MDP), Intermunicipal Development Plan (City and County of Vermillion River), Lloydminster District Planning Commission (LDPC), Land Use Bylaw (LUB).
- **Non-statutory Plans:** Transportation Master Plan (TMP), Growth Strategy and Assessment, Integrated Sustainability Plan
- **Current Practices:** Summary of day-to-day decision-making practices.

The following conclusions are provided based on the review of the current practices:

- Conducting this study aligns with the policies and plans within the MDP and IDP.
- Future updates of the LDPC may reflect the outcomes of this study, including provisions, guidance and requirements for including active transportation plans in applicable areas within the LDPC area. This is subject to discussions between the City and external stakeholders as well as the Rural Municipalities of Wilton and Britannia.
- A future addendum to the LUB may include provisions for development to connect existing trails and sidewalks to the trail and sidewalk network formalized in this study.
- Completing this Master Plan supports the planning and capital planning of improvements with the TMP.
- While the Growth Strategy does not address active transportation, the information on the City's population and demographics may be used as inputs for additionally assessing the future City's active transportation needs.
- Currently, the City does not have a detailed process or tool for determining where trails should be located and/or which connectivity links need to be completed. Current practices for planning the trails and sidewalk network is through best judgment and sound reasoning, through subdivision reviews, public/citizen request and internal requests.

Internal Stakeholder Engagement and Public Survey

Online engagement was launched on May 28, 2020, until June 18 to gather feedback from residents and the public. Key feedback is as follows:

Table 8.1: Public Engagement Results (Ranked by Theme)

Rank	Theme	Results of Survey				
		Unimportant	Somewhat Important	Neutral	Somewhat Important	Important
1	Safety	0%	2%	4%	9%	85%
2	Connectivity	1%	1%	4%	15%	79%
3	Accessibility	0%	1%	5%	17%	77%
4	Protecting Environment	0%	2%	12%	26%	60%
5	New Expansion	2%	2%	14%	26%	55%
6	Wayfinding	4%	8%	26%	31%	30%
7	User Experience	12%	13%	27%	29%	20%

As shown safety, connectivity and accessibility are the highest priorities based on public feedback.

On Wednesday, May 20, 2020, an internal visioning workshop was held virtually to develop the project vision as follows:

The Trails and Sidewalk Master Plan improves the existing network as follows:

- Improving access and ease of use by increasing connectivity through the existing network.
- Creating a safe and welcoming space for users of all ages and abilities to enjoy the natural environment.
- Encouraging active modes of transportation, physical activity and outdoor recreation.

8.1.2 Inventory and Analysis (Section 3.0)

ISL Engineering and Land Services performed data collection for all roadways and trails within the City of Lloydminster during the spring of 2020. The scope of this work included taking 360-degree photos of these roadways and trails using vehicle-mounted and backpack-mounted cameras to map out the existing trails and sidewalks, including types, surface condition and crosswalks. These are shown in Exhibits 3.1 to 3.3.

A preliminary gaps analysis of the network was conducted, and this was presented to external stakeholders on August 26, 2020. During this workshop, the project team shared with participants project information and gathered feedback to confirm and refine the Project Vision and identified connection issues and opportunities in the current network. The details are provided in **Appendix E**.

8.1.3 Pedestrian Crossing Safety Assessment (Section 4.0)

A key input to the project is creating and applying a procedure for assessing the safety and effectiveness of pedestrian crossings that produces consistent recommendations, supports the overall goals of the project, and provides direction for assessing priority locations for improvements and capital planning. The pedestrian crossing safety assessment was created for application in this project based on the Transportation Association of Canada's Pedestrian Crossing Control Guide. The proposed pedestrian crossing safety assessment is described in Section 4.2 and the missing crosswalks depicted in the preliminary gaps analysis were assessed in Section 4.3

8.1.4 Stakeholder Engagement Round 1 (Section 5.0)

On August 26, 2020, the City of Lloydminster Administration hosted a virtual stakeholder workshop where the project team shared with participants project information and gathered feedback to confirm and refine the Project Vision and preliminary gaps analysis. Feedback gathered from these workshops was used to help refine and finalize the project vision, to identify gaps and provide further local knowledge in the current network assessment. Detailed materials and feedback are provided in **Appendix E**.

8.1.5 Preliminary Prioritization (Section 6.0)

Prioritization includes identifying improvements for the trails and sidewalk network for the short, medium and long terms. Improvements in the short term are those suggested for the City to prioritize in the one to five-year horizons, while those in the medium and long terms are those the 5 to 20-year horizons and depend on funding availability. Valuable insight gained from previous public and stakeholder engagement regarding levels of importance for improving the sidewalk and trail network was used to create the preliminary prioritization principles for improving the trails and sidewalk network in the short, medium and long terms. Details may be found in Section 6.0, as this was preliminary and refined through subsequent engagement.

8.1.6 Stakeholder Engagement Round 2, Public Engagement Round 2 (Section 7.0)

In October and November 2020, a digital engagement campaign was open from October 26 until November 16, 2020, to gather feedback from stakeholders and the public to inform the development of the Trails and Sidewalk Master Plan. The following was asked:

- Level of support for the Project Vision.
- Missing Gaps.
- Level of support for the preliminary prioritization.

The final round of stakeholder and public engagement is considered the “litmus test” for understanding the level of support for the efforts completed to date. Feedback on the project vision is as follows based on the public survey is as follows.

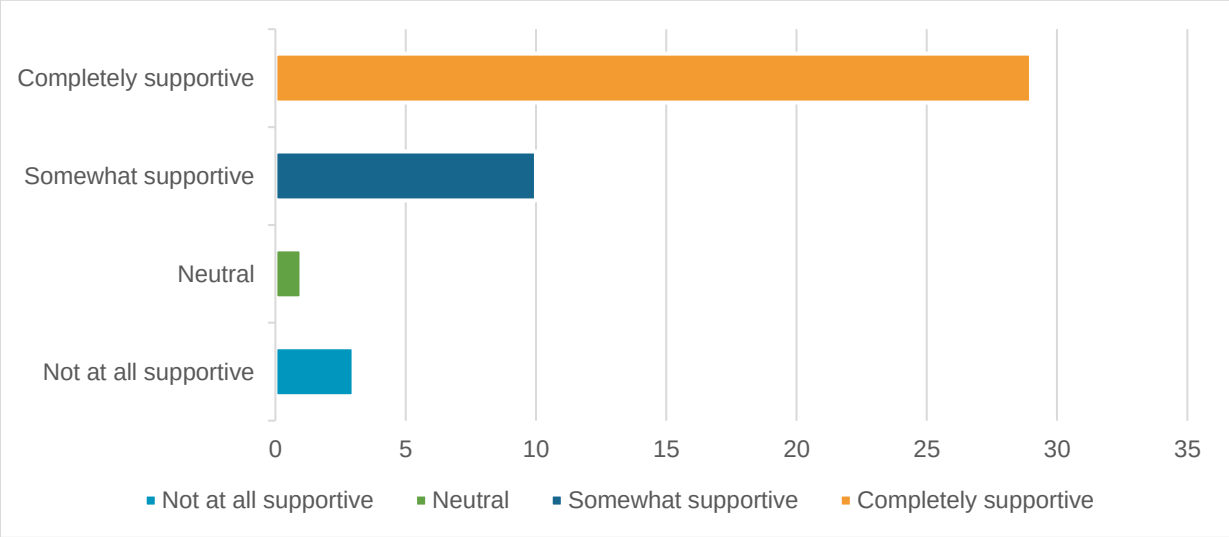

Figure 8.1: Project Vision Responses (Public Survey)

As a percentage, the responses from the public regarding the project vision are as follows.

- 91% supportive (67% completely supportive - 23% somewhat supportive).
- 7% not supportive at all.
- 2% Neutral.

The results indicate a very high level of support for the vision.

Survey participants were about their level of support for the priorities shown on each of the plans and the results were overall positive as shown in the following figure.

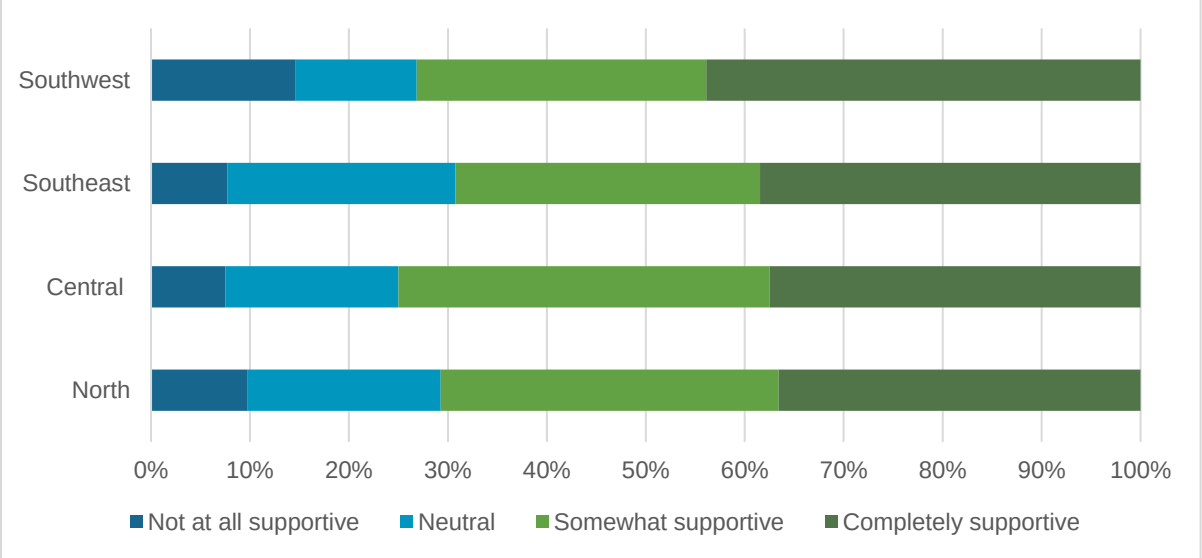

Figure 8.2: Project Priorities Responses (Public Survey).

As a percentage, the responses from the public regarding the project priorities are as follows:

- 69 to 75% supportive (37 to 44% completely supportive – 29 to 38% somewhat supportive)
- 8% to 15% not supportive at all (highest not support in the southwest)
- 12 to 23% Neutral

The results indicate good general support (~2/3 support) for the project priorities. Site-specific feedback collected regarding the project prioritization plan and projects included in the plan were incorporated into the final recommendations. The details of feedback used to create the final plan are provided in Section 7.0 and outlined in the following sections and exhibits.

8.2 Recommendations

8.2.1 Recommended Project Prioritization Principals

Prioritization includes identifying improvements for the trails and sidewalk network for the short, medium and long terms. Improvements in the short term are those suggested for the City to prioritize in the one to five-year horizons, while those in the medium and long terms are in the 5 to 20-year horizons and depend on funding availability.

Short Term Priority (0 – 5 years)

- **Busy Arterial Roadways (Sidewalks, trails):** Improving safety, connectivity and accessibility by providing a minimum grid of sidewalks and trails along busier arterial roadways as follows:
  - where there is no available sidewalk or trail, and,
  - between important destinations where there is a higher number of users expected, including to/from Bud Miller Park and between the network and important destinations (schools, employment and shopping areas).
- **Local and Collector Roads (Sidewalks, trails):** Enhancing connectivity of the network by replacing existing sidewalks with a multiuse path or trail to create a continuous route or to connect major recreational destinations.
- **Busy Arterials (Crosswalks):** Improving safety, accessibility at crosswalks by assessing existing and/or missing crossing points and installing appropriate safety improvements where the trail and sidewalk network cross busy arterial roadways.
- **Pedestrian Ramps:** Improving accessibility by constructing missing ramps.

Medium-Term Priority (5 – 10 years)

- **Busy Arterial Roadways (Sidewalks, trails)**: Further enhancing the grid by adding a secondary connection along busier arterial roadways, on the opposite side of the road.
- **Other Arterials (Sidewalks, trails):** Extending the network and providing sidewalks and trails along less busy arterials roads where there is no available sidewalk or trail and relatively less adjacent development.
- **Local and Collectors (Sidewalks, trails):** Improving safety, connectivity and accessibility by expanding the grid of sidewalks and trails along local and collector roadways, where there is no sidewalk or trail.
- **Recreational Areas and Desire Lines**: Improving connections within the recreation trail/sidewalk network, including hard surfacing connections that provide a circuitous route and/or along direct desire lines and where there is a clear natural worn-in path.
- **Pedestrian Ramps:** Improving accessibility by reconstructing misoriented pedestrian ramps.

Long-Term Priority (10 – 20 years)

- **Arterial (Sidewalks, Trails):** Extending the network further into relatively less developed areas, which have less busy arterials.
- **Local and Collectors (Sidewalks, Trails):** Further enhancing the existing grid by adding a second sidewalk on the opposite side of the road. Extending the network of sidewalks and trails on locals and collectors, concurrent with the extension of sidewalks and trails on arterials.

8.2.2 Other Potential Priorities

- **Circuit Route:** Stakeholder feedback indicated a desire for creating a circuit route of trails along 12 Street, 75 Avenue, 40 Avenue, 67 Street and other existing arterials that would support a longer and uninterrupted route for runners, cyclists, other fitness/recreation purposes and/or supporting the planning of larger events, including races and marathons. If there is a desire for creating a circuit route, it is recommended to be completed as a separate budgetary item in addition to the project priorities as these are recommended based on the project vision. Costs for the circuit routes are provided in the following section, generally for information/reference and discussion purposes.
- **Future Expansion:** Extension of the network into future development areas is expected to be completed as development occurs. Specific projects which may be planned and implemented through development, based on this study, public and stakeholder feedback are as follows:
  - **Southeast:** Future connectivity through undeveloped areas in the southeast, between 12 Street and 44 Street, through Jaycee Park, Winston Churchill School and connecting to Legion Park. Thoughtful design/planning of the neighbourhoods should be considered for providing trails and multi-use paths in these areas.
  - **Northeast**: Future connectivity through undeveloped areas in the northeast, including a connection from 50 Avenue to the Northeast Area Structure Plan, passing by the Lloydminster Golf and Curling Centre.
  - **Southwest:** Through future development, providing a secondary connection, from the southwest into Bud Miller Park. New connections could be added between existing trails and sidewalks in the Lakeside Area Structure Plan, Bud Miller Park and 12 Street.

8.2.3 Recommended Projects (Short, Medium and Long Term)

The recommended projects for the short, medium and long term, based on the prioritization principles are provided in Exhibits 8.1 to 8.4. The type of improvement (sidewalk, trail, multiuse path, pedestrian crosswalk) is discussed depicted in the cost estimates and detailed in **Appendix H**.

8.3 Costs

8.3.1 Costs (Trails, Sidewalks, Multiuse Paths and Crosswalks)

The cost for completing projects in the short, medium and long term is provided in the following table. The detailed costs for each project are provided in **Appendix H**. Suggested locations for the improvements shown in Appendix H are more relevant where there are existing connections. However, these locations are subject to change with further study and review as these projects become funded, particularly on segments with no current sidewalk or trail as the new connection may be placed on either side of the road.

All costs are based on 2020 dollars.

Table 8.2: Capital Costs (North)

Segment		From	To	Type	Term	Costs
17	62 Avenue	62 Street	67 Street/50 Avenue	Sidewalk	Long	$543,400
18	North Industrial			Sidewalk	Long	$503,800
19	50 Avenue	57 Street	67 Street	Sidewalk	Long	$343,200
16	62 Avenue	44 Street	62 Street	Multiuse Path	Long	$308,000
8	62 Avenue	44 Street	52 Street	Sidewalk	Long	$259,200
12	52 Avenue	52 Street	57 Street	Sidewalk	Long	$216,000
11	59 Avenue	44 Street	50 Street	Sidewalk	Long	$148,500
9	52 Street	67 Avenue	62 Avenue	Sidewalk	Long	$128,250
14	49 Avenue	52 Street	57 Street	Sidewalk	Long	$16,200
15	62 Street	63 Avenue	50 Avenue	Sidewalk	Medium	$567,000
2	52 Street	49 Avenue	40 Avenue	Sidewalk	Medium	$432,000
7	59 Avenue	52 Street	62 Street	Sidewalk	Medium	$391,500
4	63 Avenue	62 Street	56 Street	Sidewalk	Medium	$249,750
10	59 Avenue	44 Street	50 Street	Sidewalk	Medium	$148,500
3	56 Street	67 Avenue	62 Avenue	Sidewalk	Medium	$141,750
5	63 Avenue	56 Street	52 Street	Sidewalk	Medium	$141,750
6	67 Avenue	56 Street	52 Street	Sidewalk	Medium	$141,750
1	52 Street	62 Avenue	50 Avenue	Sidewalk	Short	$513,000
13	52 Avenue	54 Street	52 Street	Sidewalk	Short	$27,000

Table 8.3: Capital Costs (Central)

Segment		From	To	Type	Term	Costs
20	43 Avenue	36 Street	44 Street	Sidewalk	Long	$248,400
9	51 Street	54 Avenue	50 Avenue	Sidewalk	Long	$175,500
4	55 Avenue	Alley	51 Street	Sidewalk	Long	$172,800
6	54 Avenue	45 Street	52 Street	Sidewalk	Long	$159,300
10	53 Avenue	45 Street	51 Street	Sidewalk	Long	$156,600
23	48 Avenue	39 Street	44 Street	Sidewalk	Long	$126,900
29	51 Avenue	36 Street	41 Street	Sidewalk	Long	$126,900
16	45 Avenue	44 Street	Alley	Sidewalk	Long	$118,800
30	42 Street	54 Avenue	52 Avenue	Sidewalk	Long	$91,800
22	47 Street	41 Street	44 Street	Sidewalk	Long	$81,000
24	49 Avenue	41 Street	44 Street	Sidewalk	Long	$78,300
32	43 Street	59 Avenue	57 Avenue	Sidewalk	Long	$78,300
34	59 Avenue	41 Street	44 Street	Sidewalk	Long	$59,400
27	41 Street	51 Avenue	50 Avenue	Sidewalk	Long	$54,000
14	47 Avenue	47 Street	49 Street	Sidewalk	Long	$48,600
21	School	36 Street	School	Trail	Long	$48,600
3	57 Avenue	48 Street	50 Street	Sidewalk	Long	$47,250
25	50 Avenue	41 Street	43 Street	Sidewalk	Long	$40,500
13	48 Avenue	Alley	46 Street	Sidewalk	Long	$37,800
31	57 Avenue	42 Street	44 Street	Sidewalk	Long	$37,800
40	50 Street	50 Avenue	49 Avenue	Sidewalk	Long	$35,100
8	45 Street	54 Avenue	Existing sidewalk	Sidewalk	Long	$27,000
12	51 Avenue	48 Street	49 Street	Sidewalk	Long	$21,600
15	46 Avenue	46 Street	47 Street	Sidewalk	Long	$21,600
7	Alley	55 Avenue	Centre of block	Sidewalk	Long	$17,550
2	57 Avenue	47 Street	Alley	Sidewalk	Long	$9,450
18	40 Avenue	44 Street	36 Street	Multiuse Path	Medium	$167,200
5	54 Avenue	45 Street	52 Street	Sidewalk	Medium	$159,300
17	40 Avenue	44 Street	52 Street	Multiuse Path	Medium	$149,600
39	36 Street	50 Avenue	47 Avenue	Multiuse Path	Medium	$114,400
11	53 Avenue	46 Street	50 Street	Sidewalk	Medium	$102,600
33	43 Street	59 Avenue	57 Avenue	Sidewalk	Medium	$78,300
35	59 Avenue	41 Street	43 Street	Sidewalk	Medium	$24,300
26	50 Avenue	36 Street	44 Street	Sidewalk	Short	$205,200
19	44 Street	43 Avenue	40 Avenue	Multiuse Path	Short	$173,800
38	44 Street/59 Avenue			Pedestrian Signal	Short	$150,000
37	44 Street	62 Avenue	59 Street	Sidewalk	Short	$62,100
28	41 Street	51 Avenue	West of 50 Avenue	Sidewalk	Short	$24,300
36	59 Avenue	43 Street	44 Street	Sidewalk	Short	$21,600
41	50 Avenue/41 Street			RRFB	Short	$15,000

Table 8.4: Capital Costs (Southwest)

Segment	From	To	Type	Term	Costs
30	75 Avenue to 12 Street Circuit (multiuse path)			Long	$990,000
2	75 Avenue	43 Street	44 Street	Sidewalk	Long	$59,400
13	31 Street	51 Avenue	50 Avenue	Sidewalk	Long	$27,000
22	52B Avenue	12 Street	13 Street	Sidewalk	Long	$13,500
14	25 Street	59 Avenue	50 Avenue	Multiuse Path	Medium	$343,200
28	75 Avenue to	Trail	29 Street	Multiuse Path	Medium	$242,000
11	36 Street	57 Avenue	52 Avenue	Sidewalk	Medium	$224,100
7	62 Avenue	36 Street	44 Street	Multiuse Path	Medium	$218,700
23	Bud Miller Park	-	-	Multiuse Path	Medium	$180,400
20	15 Street/ Field	50 Avenue	Field	Sidewalk	Medium	$129,600
10	Bud Miller Park	2nd parking lot	SW Project #8	Trail	Medium	$97,200
17	59 Avenue	23 Street	25 Avenue	Multiuse Path	Medium	$92,400
18	59 Avenue	North of 18 Street	23 Street	Sidewalk	Medium	$86,400
26	Bud Miller Park			Multiuse Path	Medium	$85,800
24	Bud Miller Park			Multiuse Path	Medium	$79,200
4	70 Avenue	Access	44 Street	Sidewalk	Medium	$75,600
29	29 Street	59 Avenue	57a Avenue	Multiuse Path	Medium	$71,550
25	Bud Miller Park			Multiuse Path	Medium	$63,800
5	43 Street	66 Avenue	62 Avenue	Sidewalk	Medium	$54,000
12	St Joseph, between 28/27A Street		29 Street	Multiuse Path	Medium	$26,400
1	44 Street	76 Avenue	62 Avenue	Sidewalk	Short	$480,600
27	75 Avenue	44 Street	Trail Connection	Multiuse Path	Short	$112,200
8	59 Avenue	North of 29 Street	36 Street	Multiuse Path	Short	$99,000
21	12 Street	50 Avenue	52B Avenue	Multiuse Path	Short	$92,400
15	College Way	59 Avenue	Existing Sidewalk	Sidewalk	Short	$64,800
19	59 Avenue	North of 18 Street	23 Street	Multiuse Path	Short	$55,000
9	33 Street	33 Street	59 Avenue	Trail	Short	$37,400
6	62 Street, Midblock, south of 36 Street			RRFB	Short	$15,000
16	59 Avenue/College Way			RRFB	Short	$15,000
3	70 Avenue	Access	44 Street	Multiuse Path	Short	$12,100

Table 8.5: Capital Costs (Southeast)

	Segment	From	To	Type	Term	Costs
16	40 Avenue to 12 Street Circuit (multiuse path)				Long	$686,400
12	36 Street	47 Avenue	West of 43 Avenue	Sidewalk	Long	$178,200
13	36 Street	43 Avenue	40 Avenue	Sidewalk	Long	$124,200
9	Colonial park			Trail	Long	$74,800
15	40 Avenue	41 Street	44 Street	Sidewalk	Long	$70,200
6	25 Street	50 Avenue	West of 47 Avenue	Sidewalk	Long	$43,200
8	27 Street	50 Avenue	49 Avenue	Sidewalk	Long	$29,700
11	35 Street	50 Avenue	49 Avenue	Sidewalk	Long	$29,700
3	50 Avenue	12 Street		36 Street	Sidewalk	Medium
7	25 Street and around neighbourhood	East of 50 Avenue	27 Street	Trail	Medium	$299,200
14	40 Avenue	31 Street	36 Street	Sidewalk	Medium	$97,200
2	50 Avenue	12 Street	36 Street	Sidewalk	Short	$421,200
1	12 Street	49 Avenue	47a Avenue	Sidewalk	Short	$121,500
5	21 Street	50 Avenue	49 Avenue	Sidewalk	Short	$29,700
10	50 Avenue/33 Street			GM*	Short	$1,000

*Ground mounted crosswalk

A summary of costs is provided in the following table.

Table 8.6: Capital Costs (2020 Dollars) Summary (Trails, Sidewalks, Paths)

	Short	Medium	Long
North	$540,000	$2,214,000	$2,466,550
Central	$652,000	$795,700	$2,085,750
Southwest	$983,500	$2,070,350	$1,089,900
Southeast	$573,400	$817,600	$1,236,400
Total	**$2,748,900**	**$5,897,650**	**$6,878,600**

8.3.2 Costs (Pedestrian Ramps)

Constructing new pedestrian ramps where they are missing are included in the short-term capital plans and rebuilding misoriented ramps are included in the medium term capital plans and summarized in the following table.

Table 8.7: Capital Costs (2020 Dollars) Summary (Pedestrian Ramps)

Ramps	Missing	Short	Misoriented	Medium
North	93	$232,500	42	$105,000
Central	37	$92,500	2	$5,000
Southwest	21	$52,500	21	$52,500
Southeast	11	$27,500	0	$0
Total	162	$405,000	65	162,500

8.4 Areas of Additional Study

The following areas of additional study are provided based on items not included in the scope of this project and areas of focus learned through public and stakeholder engagement.

- **Collector Crosswalks:** Collect traffic volume data and conduct sightline assessments for the missing crosswalks identified on collector roads to confirm the need and determine the appropriate type of crosswalk.
- **Pedestrian Intersection Safety Improvements:** Enhance pedestrian safety assessments at signalized intersections including reviewing pedestrian crossing clearance intervals (based on appropriate demographics), crossing infrastructure (line-markings, push-button, signage, pedestrians' signals), accessibility to pushbuttons, assessment of pedestrian refuge areas and visibility.
- **Detailed Accessibility Assessment:** Curb ramp assessment, including review of transitions between surfaces with different elevations focusing on the need to improve smoothness and minimize grade changes (maximum 8% grade as per design manual)
- **Lighting Assessments:** Trail lighting assessments, including an inventory of existing trail illumination, gaps assessment and prioritization review.
- **Updated Maps:** Updating the existing trail and sidewalk system maps using the updated information provided as a result of this study, showing existing trails, sidewalks, surface types and crossing locations.
- **Wayfinding:** Conduct a wayfinding project to assess opportunities and design/install wayfinding at key locations throughout the City.
- **Expansion:** Collaborate with RM of Britannia for potential expansion of trails and sidewalk network from the City to Neale Lake. As the City expands to the east, collaboration opportunities between the RMs of Wilton and Britannia and the City are especially significant where there is a need.
- **User Experience:** As network connectivity improvements and the trails and sidewalk network is used by more people, the need for additional enhancement improving the experience for users of the network should be considered, including the need for additional amenities including bathrooms, benches, gazeboes, performer spaces, landscaping features and others.
- **Supporting Policies:** The City should consider creating policies through the Municipal Development Plan and/or Transportation Master Plan and/or Land Use Bylaw which direct the need for enhancing connectivity in future development areas and/or expanding the existing network.

8.5 Other Discussion

- **Downtown Area Revitalization Plan (DARP):** Areas within the downtown area may be further studied as the City implements the DARP, which will improve the overall public realm, including the trails and sidewalk network.
- **Future Development Areas:** Some projects may be located within future development areas (ie. Project 7, Southeast) and these can be established as part of the normal development process.

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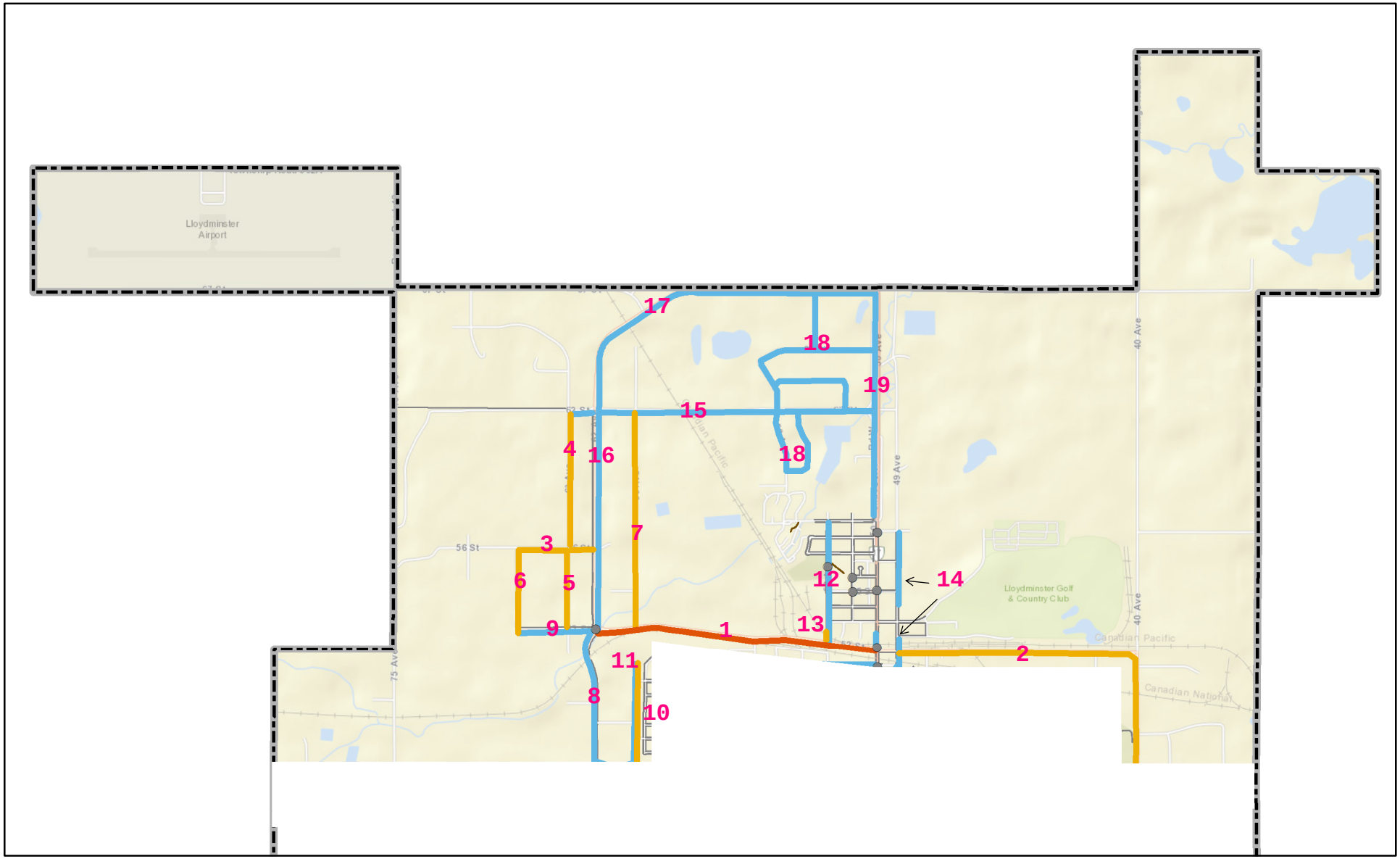

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City Boundary

Sidewalk/Multiuse Path/Trail

Natural Path

Existing Crosswalks

Prioritization

Short Term

Medium Term

Long Term

Short Term (Crosswalks)

0 0.175 0.35 0.7 1.05 1.4 km

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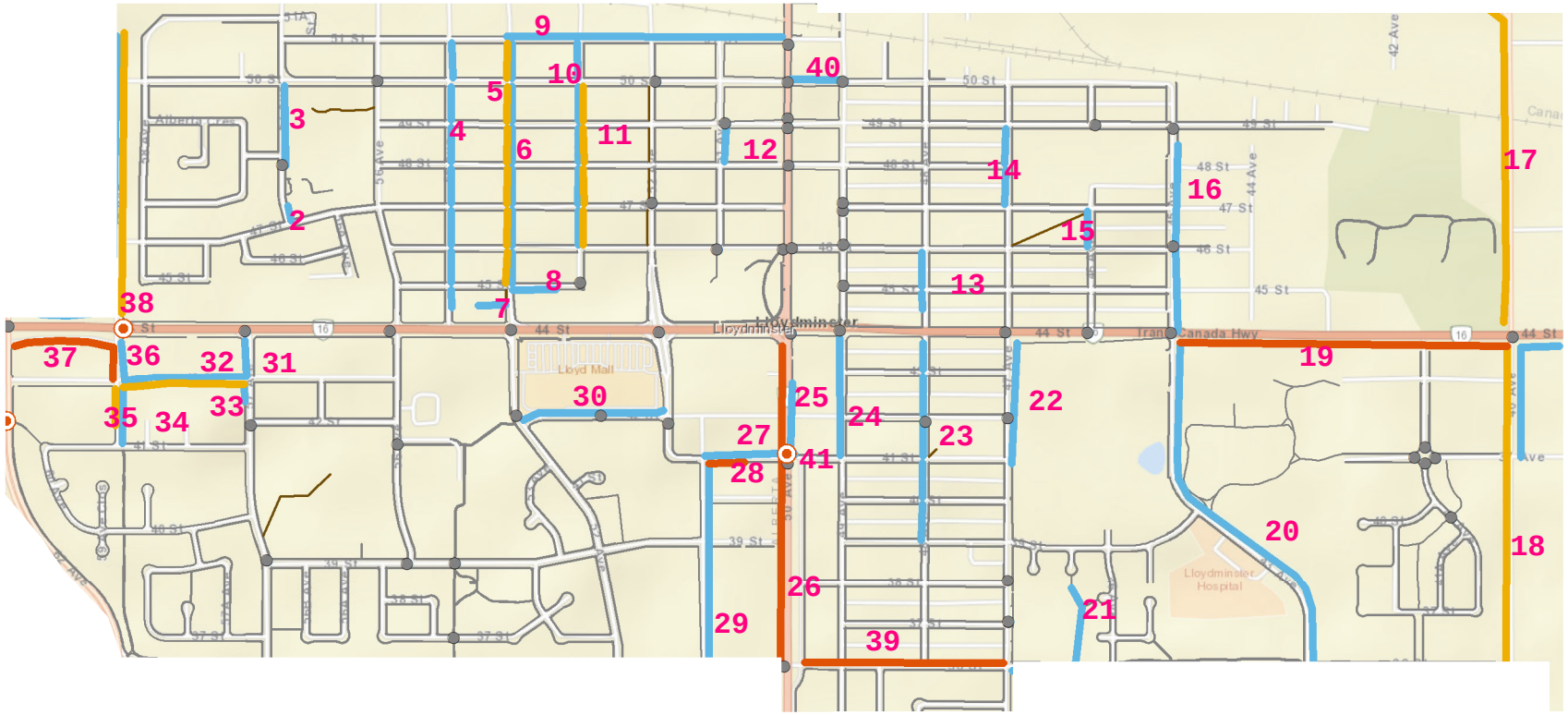
TRAILS AND SIDEWALKS MASTER PLAN

EXHIBIT 8.1: RECOMMENDED PROJECT PRIORITIES NORTH



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City Boundary
Sidewalk/Multiuse Path/Trail
Natural Path
Existing Crosswalks

Prioritization

Short Term
Medium Term
Long Term
Short Term (Crosswalks)

0 0.075 0.15 0.3 0.45 0.6 km

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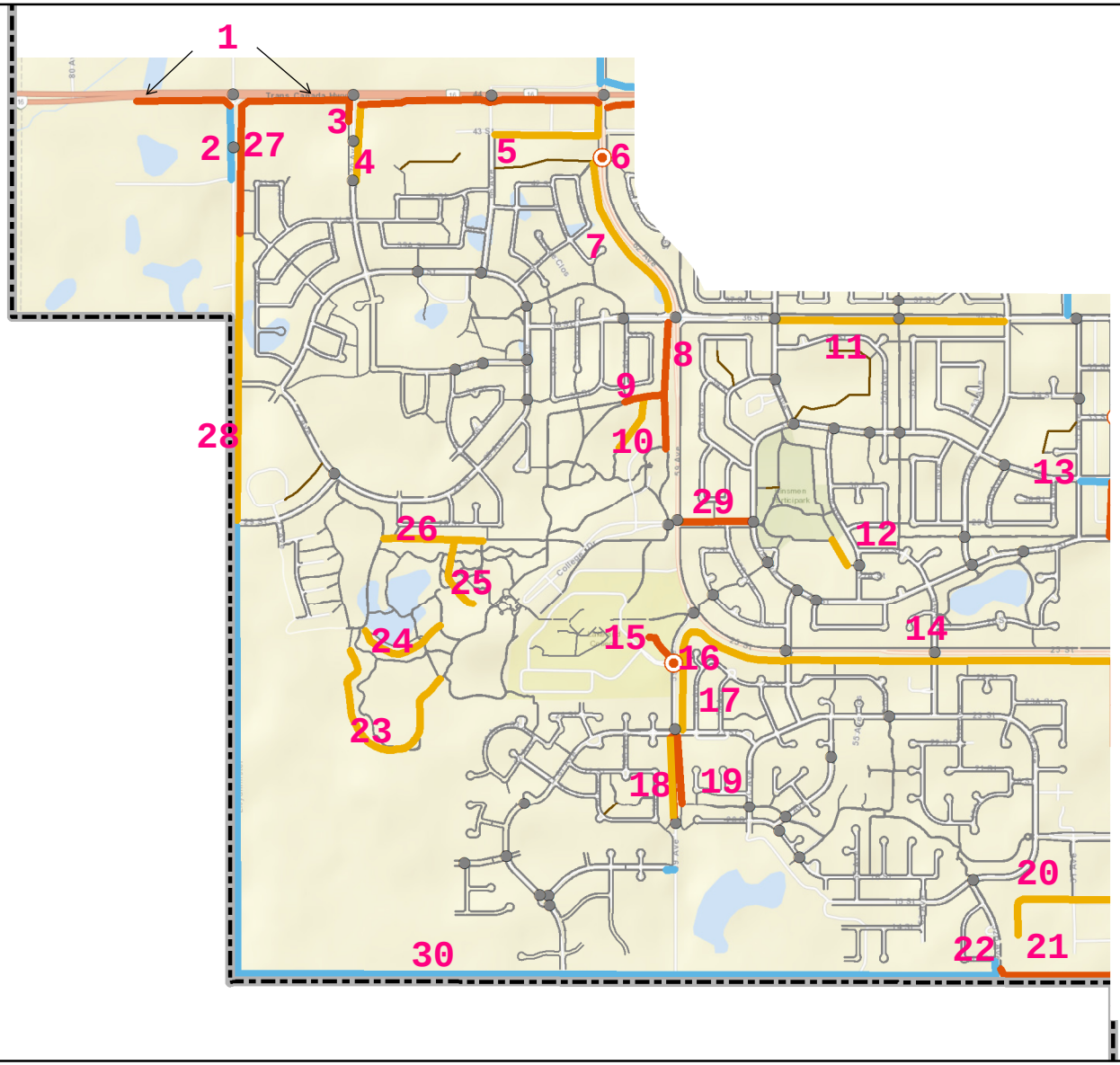
TRAILS AND SIDEWALKS MASTER PLAN

EXHIBIT 8.2: RECOMMENDED PROJECT PRIORITIES CENTRAL



N

1:25,000

City Boundary

Sidewalk/Multiuse Path/Trail

Natural Path

Existing Crosswalks

Prioritization

Short Term

Medium Term

Long Term

Short Term (Crosswalks)

0 0.1 0.2 0.4 0.6 0.8 km

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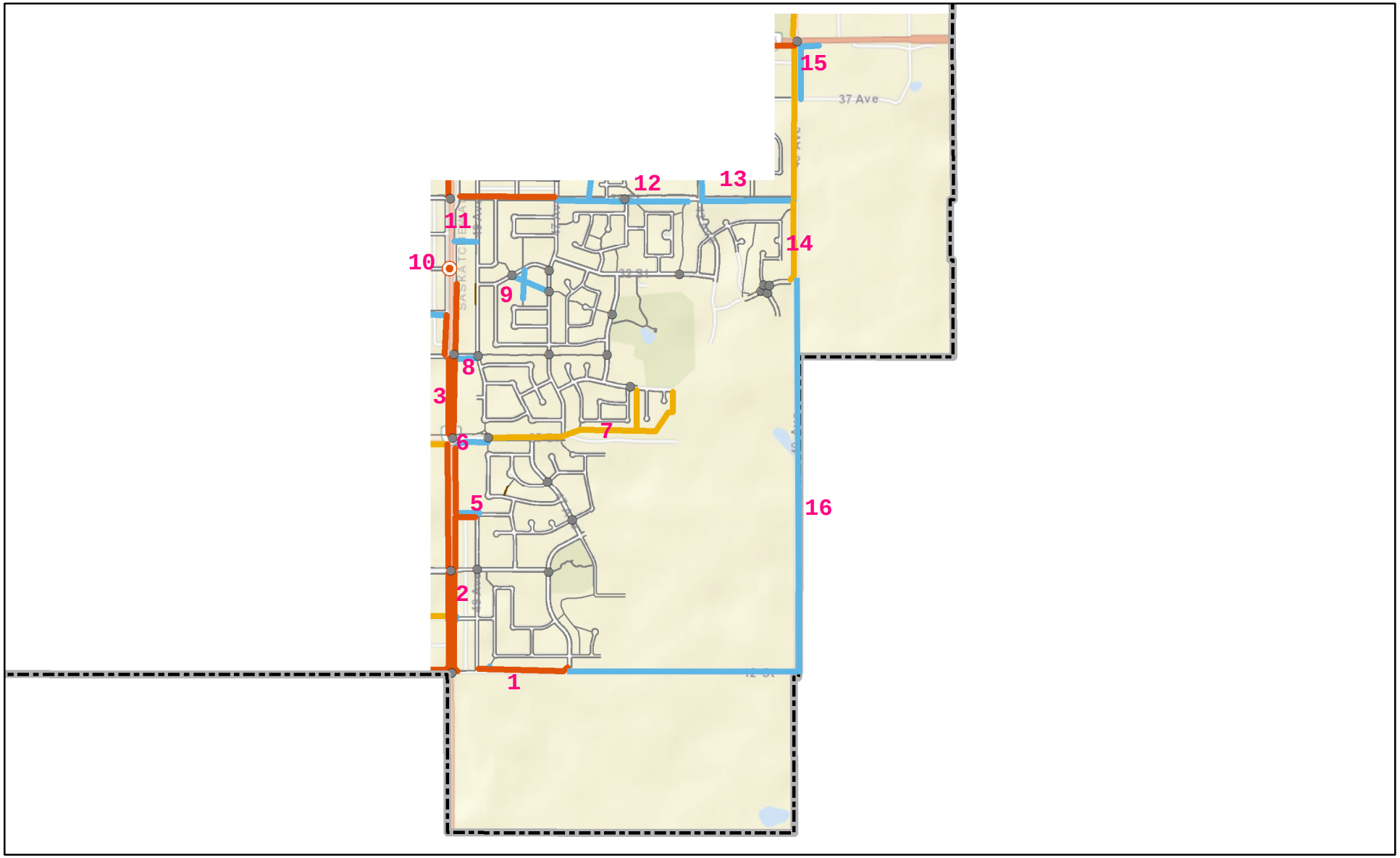
TRAILS AND SIDEWALKS MASTER PLAN

EXHIBIT 8.3: RECOMMENDED PROJECT PRIORITIES SOUTHWEST



1:28,000

City Boundary
Sidewalk/Multiuse Path/Trail
Natural Path
Existing Crosswalks

Prioritization

Short Term
Medium Term
Long Term
Short Term (Crosswalks)

0 0.125 0.25 0.5 0.75 1 km

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TRAILS AND SIDEWALKS MASTER PLAN

EXHIBIT 8.4: RECOMMENDED PROJECT PRIORITIES SOUTHEAST

APPENDIX A
Public Engagement Round 1 Feedback

LLOYDMINSTER

TRAILS AND SIDEWALK MASTER PLAN

Phase 1 What We Heard Report

July 2020

ISL Engineering and Land Services

ABOUT THE PROJECT

In early 2020, the City of Lloydminster launched the Trails and Sidewalk Master Plan project. A Trails and Sidewalk Master Plan will provide the City with a direction for improving the existing trail and sidewalk network; and, guides the growth and potential expansion of future trails and sidewalk routes, infrastructure, amenities and policy direction.

In Phase 1 of the project, the City set out to co-create a Project Vision with the public. A Project Vision is a shared statement between the City, the community and the project team that describes what is important and valued to achieve for a successful plan.

Due to the global COVID-19 pandemic, Phase 1 of the project required that all engagement activities be conducted virtually to ensure safety and recommended social and physical distancing recommendations were followed, while also recognizing that citizens have a voice and say in the project during this difficult time.

PROJECT TIMELINE

We are currently in Phase 1 of the project.

Phase 1: Vision, Issues and Ideas (Spring – Summer 2020)	Phase 2: Inventory Analysis (Summer)	Phase 3: Options Development and Refinement (Fall 2020)
Create a Project Vision that reflects community values	Complete technical work to confirm the project direction and inform the option development	Confirm and refine the options for the Master Plan
Online public engagement May - June 2020	*No public engagement during this phase*	Stakeholder workshops – TBD In-person and online public engagement – TBD

PUBLIC ENGAGEMENT OVERVIEW

In June 2020, online engagement was launched on May 28, 2020 until June 18 to gather feedback from residents and the public to understand the following to inform the development of a Project Vision:

- What does the public value about trails and sidewalks?
- How does the public currently use the trail and sidewalk network and how you would like to use it in the future?
- What elements of trails and sidewalks are most important to the public?
- What current issues exist?
- What ideas and opportunities do people see for the future?

The online engagement was conducted on the City's webpage: https://yourvoicelloyd.ca/trails and included the following opportunities:

- Online survey
- Mapping Tool
- Q & A Tool

A summary of feedback received from the online survey and mapping tool is included in this report.

ONLINE SURVEY – WHAT WE HEARD

There was a total of 316 total participants in the online survey. Overall key themes are summarized below. Key themes are developed with both diversity and frequency of comments heard. Details of key themes we heard in response to each individual question is included in the following pages.

What do you value most about the existing trail and sidewalk network?

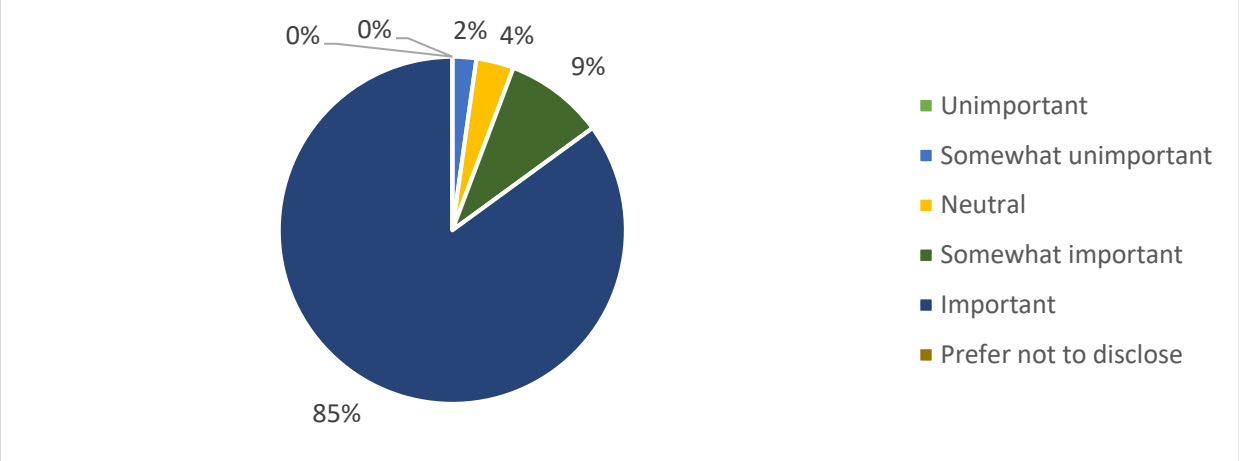
305 respondents

- Ease of use and access to the trail and sidewalk network
- Accessibility for those with mobility issues, mobility aides or parents with strollers
- A connection with nature, wildlife and the outdoors; being in a green and beautiful space
- Access to an outdoors activity and exercise
- Having the option for an alternate mode of transportation, particularly for those without access to a vehicle and when there is no public transit option
- Connection to key destinations and recreation hubs, such as Bud Miller Park
- Minimal need for crossing the street, particularly at busy intersections
- A safe option for pedestrians and cyclists through a physical separation from vehicle traffic, particularly for those traveling with small children
- A family-oriented space
- Having a variety of routes to access different areas of the city
- Having a well-maintained amenity that can be access by all residents throughout all seasons

Please rank how important the following elements are to you

Safety for users of trails, sidewalks and at intersections

314 respondents



Please Explain

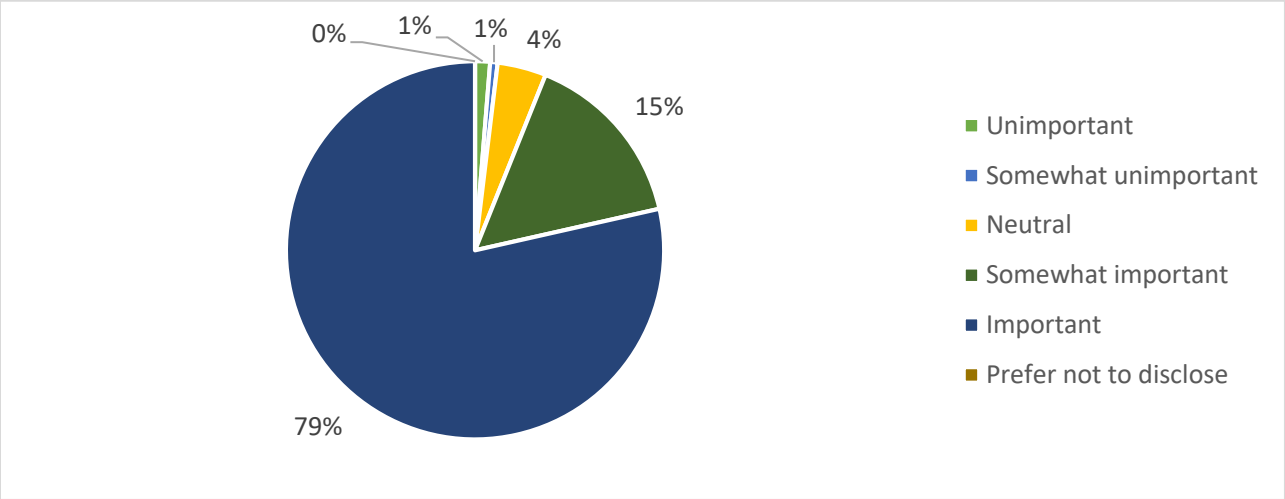
233 respondents

UNIMPORTANT 0% | SOMEWHAT UNIMPORTANT 2% | NEUTRAL 4% | SOMEWHAT IMPORTANT 9% | IMPORTANT 85%

- Accessibility needs to be improved for seniors and people with mobility issues, particularly with path width, crossing timing, and grading of curbs and ramps
- Safety is very important for people with children, particularly at intersection crossings
- Feeling safe is an important factor in people's decision to use the trails or not
- Safety could be improved at intersection crossings with regards to crosswalk markings, visibility, pedestrian timing, maintenance to ensure a clear path, and both drivers, cyclists and pedestrians following the rules of the road
- Lighting needs to be improved on the trails
- Trails and sidewalks need to be maintained in all seasons to ensure there are no hazards for users
- A physical separation from vehicle traffic increases users' sense of safety for both cyclists and pedestrians

Network connectivity of trails and sidewalks as an option for getting to key destinations

312 respondents



Please Explain

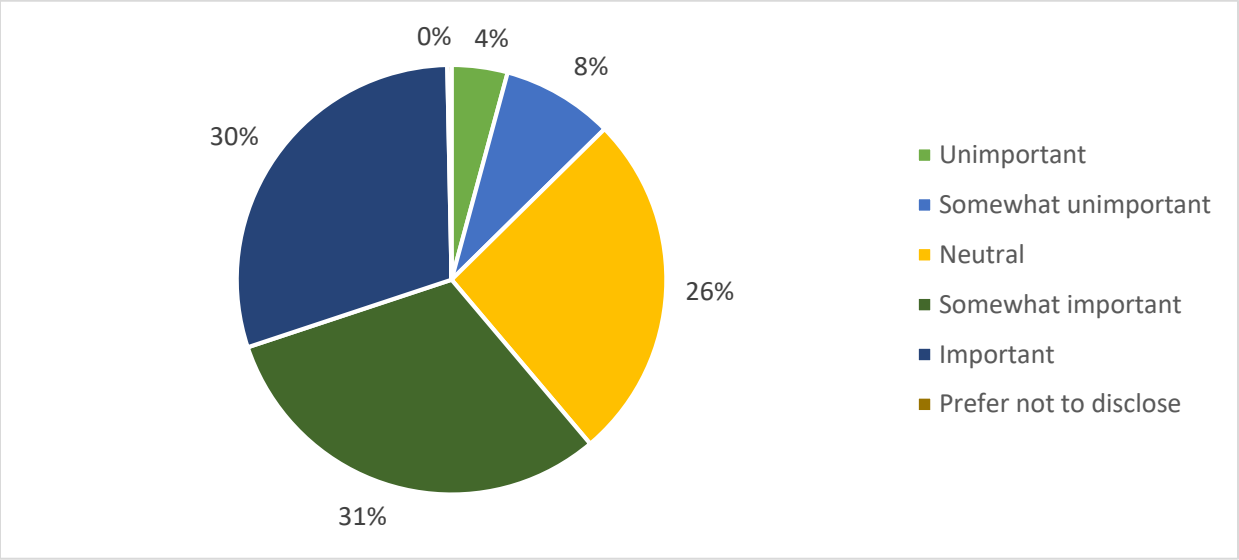
288 respondents

UNIMPORTANT 1% | SOMEWHAT UNIMPORTANT 1% | NEUTRAL 4% | SOMEWHAT IMPORTANT 15% | IMPORTANT 79%

- Ease of use and access are important to providing a realistic alternate mode of transportation for residents
- Increased connectivity would be a motivator for people to use the network as an alternative mode of transportation
- There are a lot of missing links in neighbourhoods and confusion with wayfinding for network connections in residential neighbourhoods and act as a barrier to people using the current network
- Having a safer option that is physically distanced from vehicle traffic is a motivator for people to use the trail network if there was also increased connectivity
- Increased connectivity would result in a more variety of trail options, but also more uninterrupted length for those who wish to travel further

Wayfinding Signage (Examples: network maps, directional signage, trail names or colours, etc.

309 respondents



Please Explain

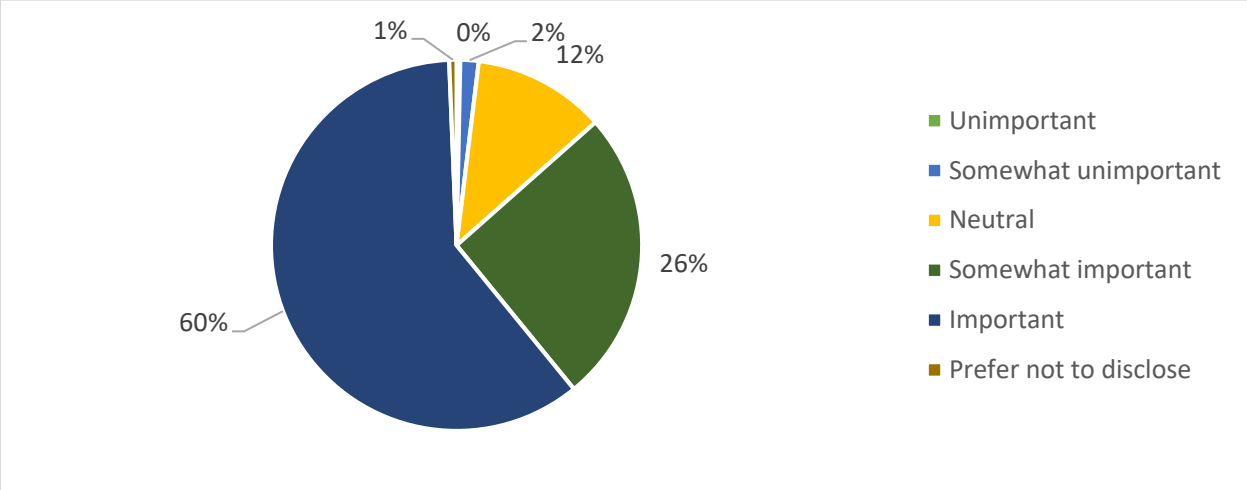
198 respondents

UNIMPORTANT 4% | SOMEWHAT UNIMPORTANT 8% | NEUTRAL 26% | SOMEWHAT IMPORTANT 31% | IMPORTANT 30%

- The current online trail maps are confusing or not updated; some find them adequate resources
- There is an opportunity for the City to develop an online system or maps available for resident use
- Wayfinding signage or online resources would help to avoid confusion and getting lost, particularly for youth, newcomers or tourists, however long-time residents would not all need to use them
- Concern about the costs, maintenance and potential for vandalism
- Maps and markers are helpful to find where you are and to discover new routes therefore increasing enjoyment and user experience
- Wayfinding signage and markers would increase connectivity at trail entrances and breaks, particularly in residential neighbourhoods where connections to other parts of the network is not always clear

Protecting the natural environment and maintaining greenspace

312 respondents



Please Explain

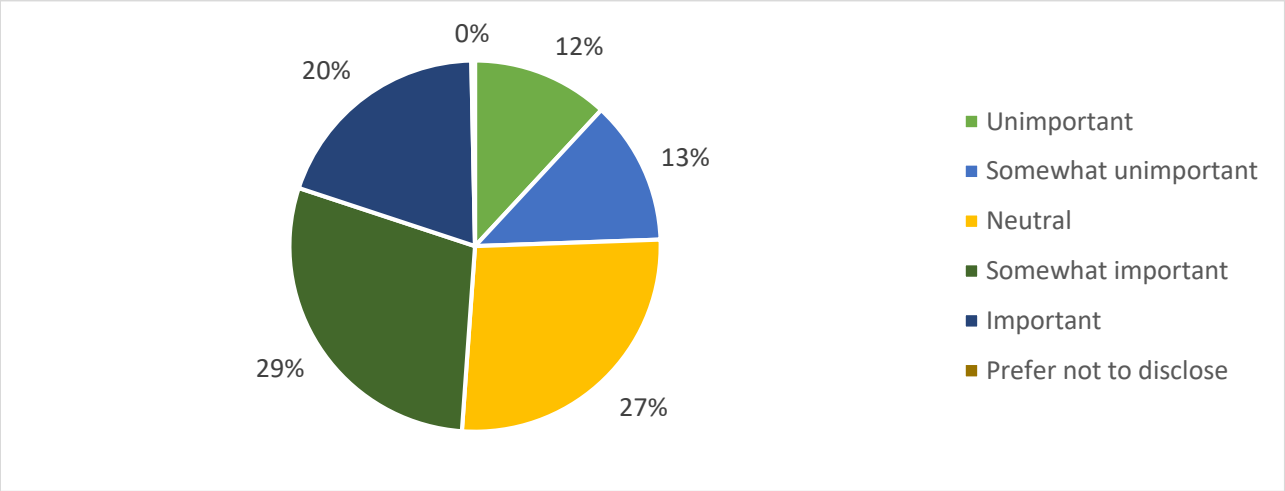
187 respondents

UNIMPORTANT 0% | SOMEWHAT UNIMPORTANT 2% | NEUTRAL 12% | SOMEWHAT IMPORTANT 26% | IMPORTANT 60%

- A trail system ensures safe access to nature, wildlife and the outdoors while preventing damage to the surrounding environment
- Nature and greenspaces add a lot of natural beauty to a space which increases enjoyment and improves the mental and physical health of users
- Greenspace is important for a healthy environment and it is important to protect the environment and maintain greenspaces for people to enjoy
- It is important that greenspaces are maintained free of garbage and paths are cleaned of debris

User experience enhancements through trail amenities (Examples: benches, gazebos, public art, educational plaques, etc.)

311 respondents



Please Explain

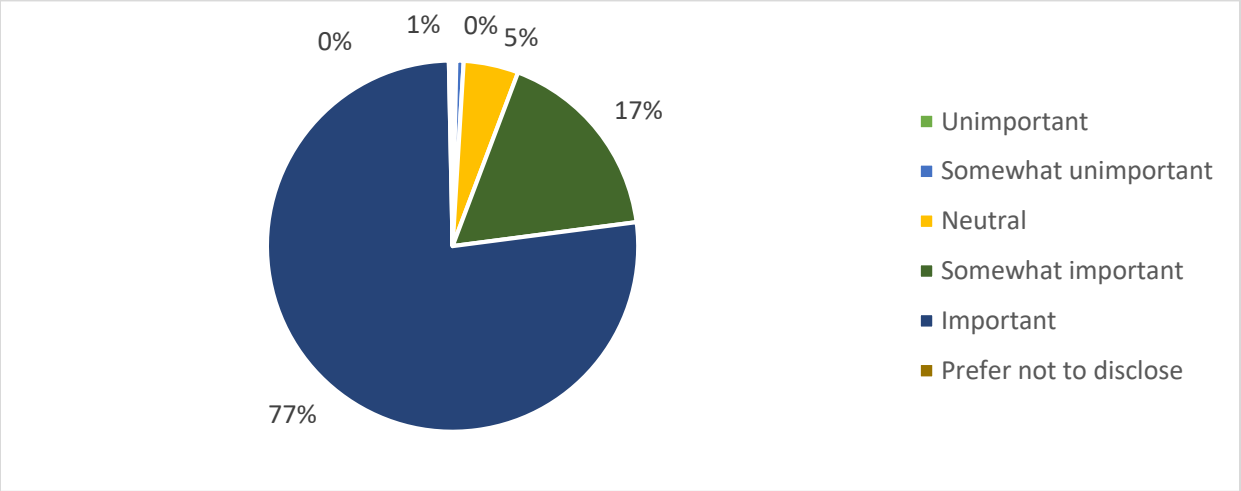
207 respondents

UNIMPORTANT 12% | SOMEWHAT UNIMPORTANT 13% | NEUTRAL 27% | SOMEWHAT IMPORTANT 29% | IMPORTANT 20%

- Increased beautification through local public art would increase enjoyment of the network and encourage people to use the network
- Plaques could be an opportunity for tourists and students to learn about different topics on the history of Lloydminster or different ecological features
- There is concern about the costs, maintenance and potential for vandalism and loitering
- Seating should be provided at strategic locations on the trail to provide for a resting space for those who may need it; however, the current locations of benches with advertisements are not seen as frequently used and could be placed in better locations
- Shelters could be used as protection from the elements if needed
- Enhancements are not a priority for some over increasing connectivity, expanding the trail system, and maintaining and upgrading the current trails
- Garbage cans, washrooms and water fountains were suggestions for additional enhancements

Accessibility for all types of users, ages and abilities (Examples: wheelchair, walker, stroller accessibility, etc.)

314 respondents



Please Explain

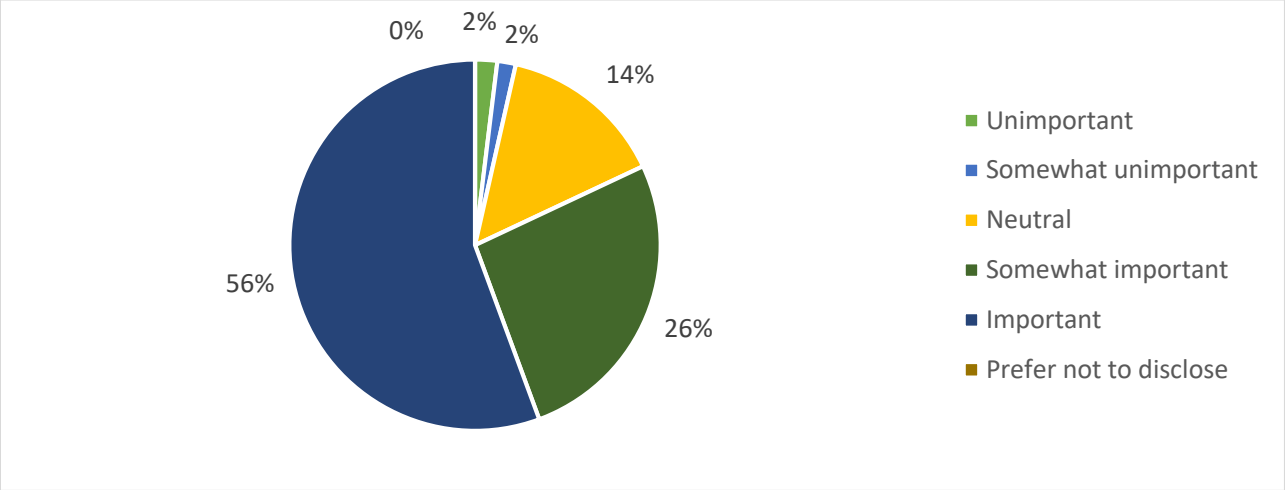
192 respondents

UNIMPORTANT 0% | SOMEWHAT UNIMPORTANT 1% | NEUTRAL 5% | SOMEWHAT IMPORTANT 17% | IMPORTANT 77%

- All trails and sidewalks should be accessible to all residents
- Curbs and ramps in transitioning from sidewalk to road or trail, surface material, lane width, maintenance and debris (such as snow and ice clearing and standing water) and intersection crossing timing are all barriers to accessibility for people with reduced mobility and parents with strollers
- There could be bicycle only paths or hikes with higher degree of difficulty or unpaved, however clear signage would be required to avoid confusion

Expanded trail system providing more areas for recreation purposes

311 respondents



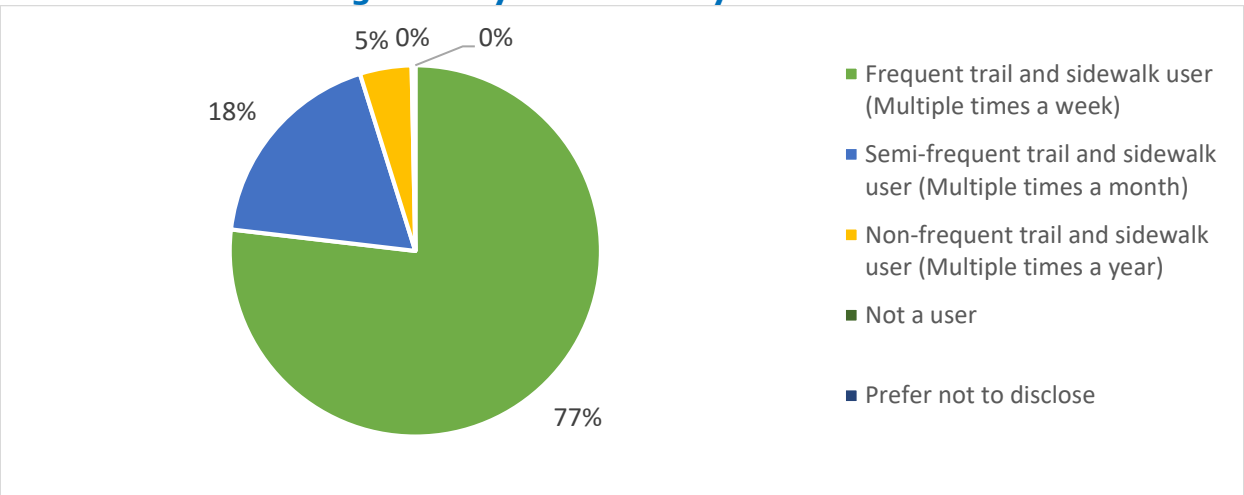
Please Explain

164 respondents

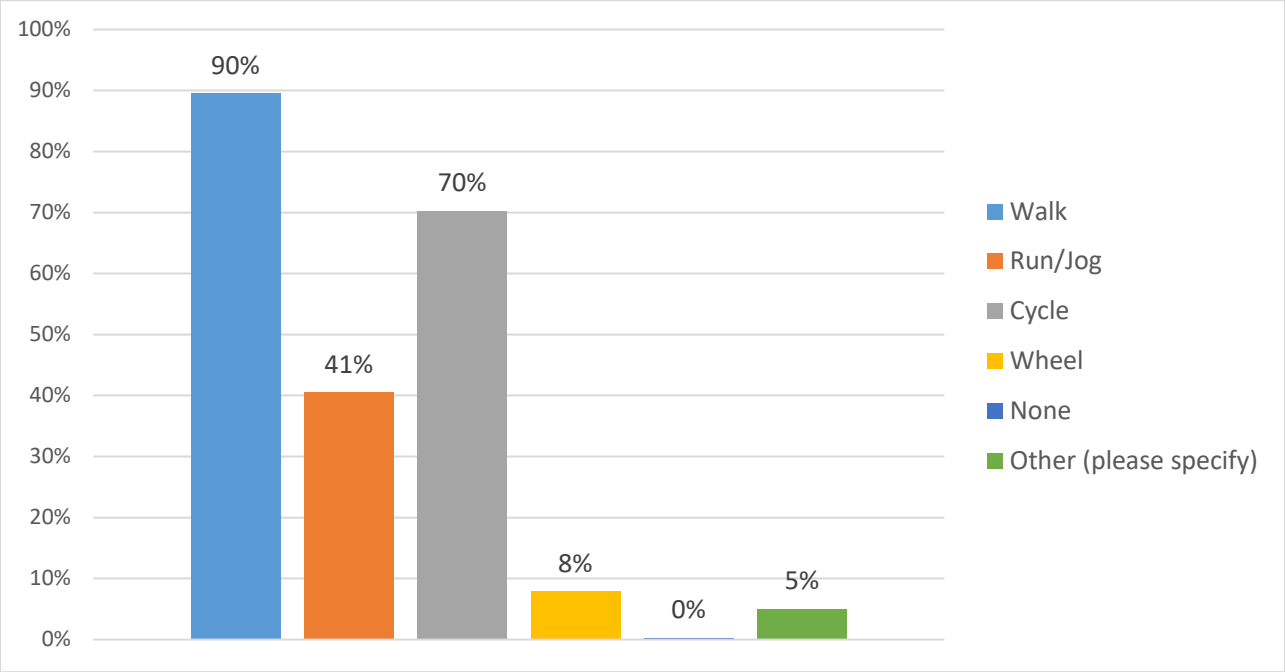
UNIMPORTANT 2% | SOMEWHAT UNIMPORTANT 2% | NEUTRAL 14% | SOMEWHAT IMPORTANT 26% | IMPORTANT 55%

- Expansion would allow for new places to be explored, particularly if there is additional greenspace
- The current trail system is enough but needs to be better connected
- More trails are needed to provide an alternate mode of transportation to get around the city
- Currently there are spots of the city that could have more trails added and missing sidewalk links added to provide increased network connectivity and safer travel that is separated from vehicle traffic
- Increased trails will promote health and recreation

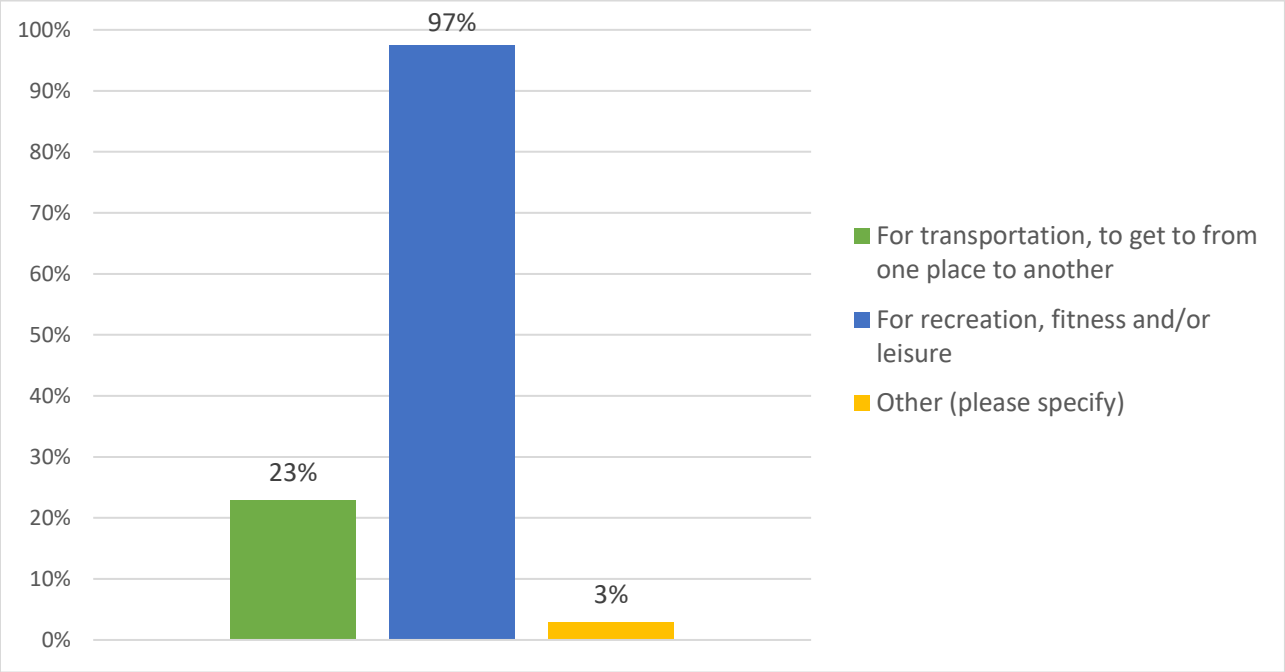
Which of the following would you describe yourself as:



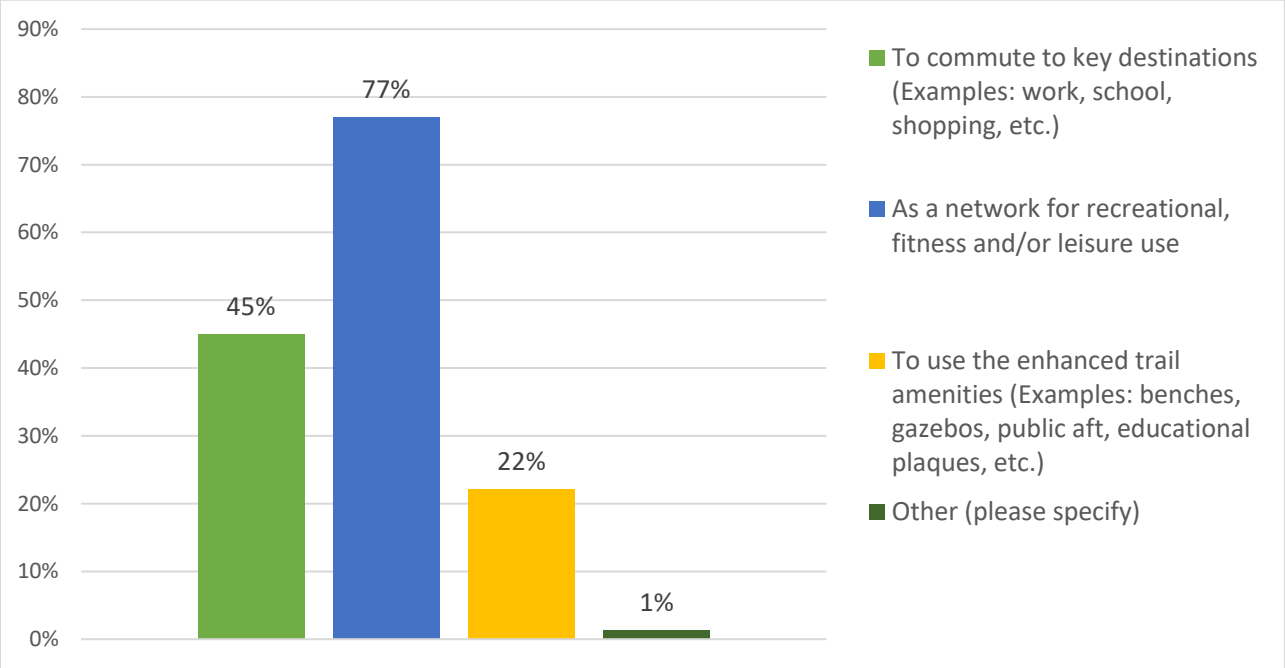
How do you use the current trail and sidewalk network? Please select all that apply:



Why do you primarily use the current trail and sidewalk network?



Which of the following ways would you use the trail and sidewalk network in the future?



What challenges do you currently face using the existing trails and sidewalks?

243 respondents

- Accessibility challenges for people with reduced mobility or parents with strollers
- Unsafe intersection crossings that are not clearly marked or with insufficient controls, are not visible, have not enough time to cross, or there are not enough crossings for major roads
- Crowds and insufficient network capacity for popular areas such as Bud Miller Park, particularly with COVID-19 and physical distancing
- Insufficient lighting on some trails causing reduced sense of safety
- Trail maintenance of existing trails, including deteriorating trails, debris and garbage, and seasonal clearing
- Missing links and lack of overall network connectivity, particularly with north south connections (Highway 17) and on the Saskatchewan side
- There is no easy or limited access in some parts of the city to the trail network
- There is a lack of clear wayfinding signage and resources to find new or nearest trails and connections
- There is a lack of clear connectivity between trail sections
- Garbage cans are needed for responsible dog walkers and to reduce garbage

What is currently missing with the existing trail, sidewalk and crosswalk networks?

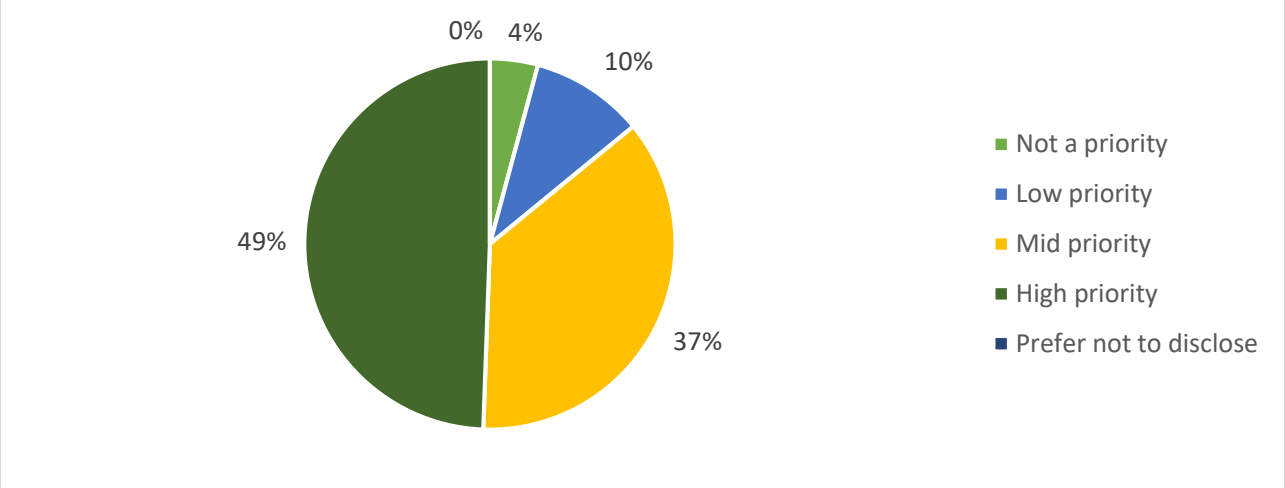
218 respondents

- A continuous and unbroken network that reaches all areas of the city
- Access to key destinations through the trail network
- Trail beautification and art
- Intersection crossing improvements through lights, signage, and timing
- Cyclist infrastructure
- Long distances without having to cross traffic at intersections
- Long trail loops and cycles other than at Bud Miller Park for exercise

How would you prioritize the following ideas?

Adding connections to important destinations (Examples: schools, downtown, shopping areas, etc.)

263 respondents



Please Explain:

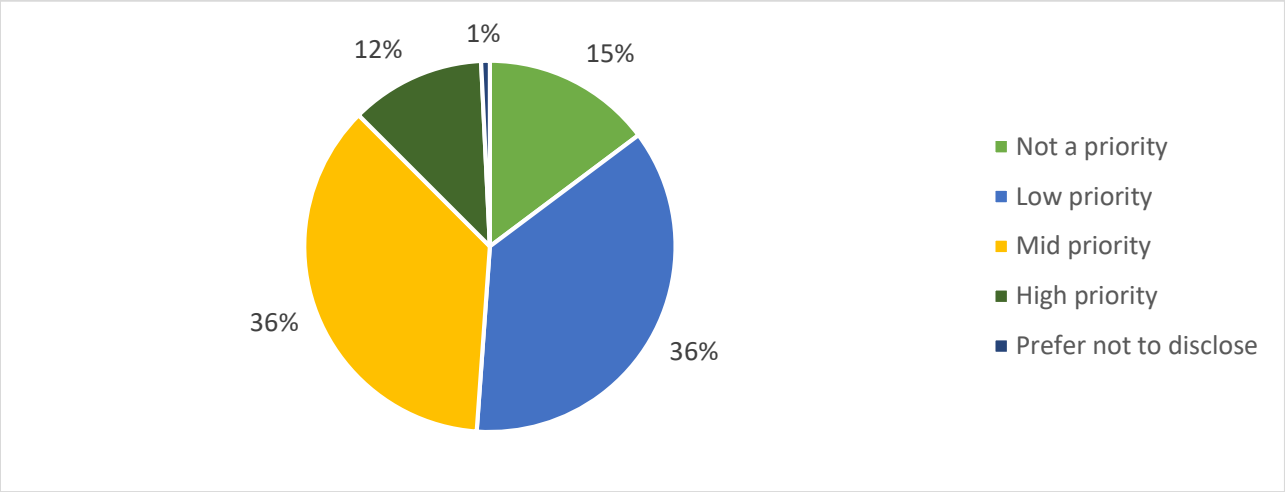
129 respondents

NOT A PRIORITY 4% | LOW PRIORITY 10% | MID PRIORITY 35% | HIGH PRIORITY 49%

- Adding connections to key destinations would improve access to the city for those without access to a vehicle, particularly as there is no transit options
- This is not a high priority for those who have vehicle access
- Would increase trail use as an alternate mode of transportation if more destinations were made available, and would promote a healthier lifestyle
- Would allow for safer travel with a greater degree of separation from vehicle traffic. This is important for student and people traveling with small children
- Connection to destinations are not a priority for some as their use of the trail system is primarily for exercise and leisure
- Easy access, accessibility and feeling safe is important for this to be successful

Adding user experience enhancements (Examples: benches, gazebos, public art, educational plaques, etc.)

264 respondents



Please Explain:

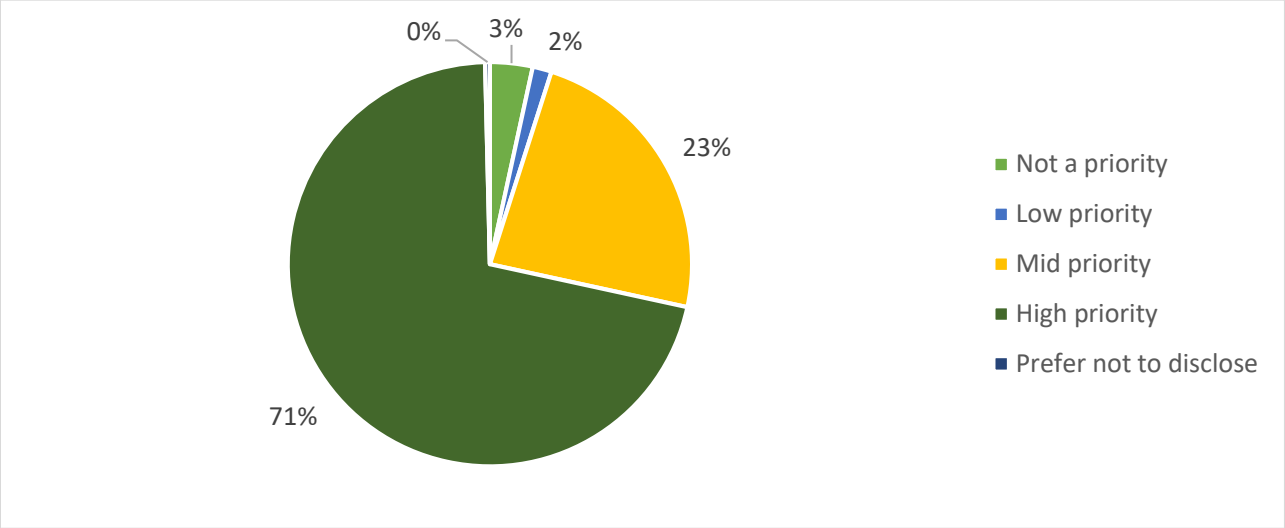
264 respondents

NOT A PRIORITY 15% | LOW PRIORITY 36% | MID PRIORITY 36% | HIGH PRIORITY 12%

- Benches are a valuable spot for enjoyment and resting for those who need it; however, the placement needs to be in areas where people would use them on the trails
- Concern about vandalism and loitering
- Not a priority at this time, not worth the cost or maintenance and concern that they won't be used
- Enhancements and beautification would bring enjoyment and learning opportunities to some users

Expanding the recreational trail network

108 respondents



Please Explain:

99 respondents

NOT A PRIORITY 3% | LOW PRIORITY 23% | MID PRIORITY 23% | HIGH PRIORITY 71%

- Allows for an alternate mode of travel
- Creates a greater sense of community through network connections
- There is a need for a greater amount of circuits in the trail and sidewalk network
- Concern about costs
- It is important to increase ease of access to parts of the City that currently experience difficulties due to lack of safe crossings, missing links, or not many trails/sidewalks in the area such as the Saskatchewan side of the City and crossing highway 17 and highway 16
- More people would be encouraged to use the trail system and increased use would improve the physical and mental health of residents
- Increasing connections to the existing network is a higher priority for some

Do you have any additional comments or questions?

99 respondents

- Connectivity and missing links need to be addressed to ensure better enjoyment and practical use of the existing trail system
- Appreciation of the opportunity to provide feedback and suggestions for user groups for further engagement
- Concern about costs to expand, and questions about expansion timeline
- Need for improved cycling infrastructure
- Need for improved maintenance for many of the existing trails and sidewalks
- Need for wayfinding measures through publicly available and updated maps
- Transportation for those without vehicle access can be expensive especially without public transit
- Safety and lighting need to be improved and maintained for better use and enjoyment of the network
- Support for greenspace, expansion of trails, and increasing connectivity

MAPPING TOOL – WHAT WE HEARD

A virtual mapping tool was used from (DATES OPEN & CLOSED), where the public could place pins to provide their feedback on topics including accessibility issues, ideas, missing connections, safety issues, and trail expansion. A total of 43 submissions, at 41 locations were identified using the virtual mapping tool.

Online virtual map hot spots

The key themes from the virtual mapping tool are as follows:

- Safer crossing at key intersections for people walking and biking
- Widening trails and sidewalks to accommodate both people walking and biking
- Adding trails to connect to destinations such as retail centres, restaurants and the industrial park
- Adding trails or sidewalks to existing roadways, such as 75 Avenue, where there are no safe options for people biking
- Developing trails within new neighbourhoods and ensure they connect to the existing trail system
- Connecting trails between communities and between communities and park destinations

APPENDIX B

Internal Stakeholder Engagement Guide and Meeting Record

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Trail and Sidewalk Master Plan

Visioning Workshop Reference

1.0 Introduction

The City is completing a Trails and Sidewalk Master Plan to direct ongoing and future efforts for maintaining and expanding the network.

What is a trail and sidewalk master plan?

A Trails and Sidewalk Master Plan is a guiding document that helps:

- the improvement of the existing trail and sidewalk network.
- the future growth and expansion of trail and sidewalk routes, infrastructure, amenities and policy direction.

Where are we now?

- This project is in phase one, consisting of reviewing best practices from other municipalities and reviewing the City's current plans and practices locally.
- We have also have an online public engagement portal opening up soon.

What is the project workshop?

- The project workshop involves key internal City stakeholders to discuss our phase one report.
  - The following is a summary of the phase one report as a reference for your contribution on the project at the project visioning workshop.
- Phase two of the project consists of assessing the trail, sidewalks and crosswalk network and reporting the results back to stakeholders based on feedback received at the workshop.
- A larger (more detailed) phase one report is available, if requested.

What do we want to get from the workshop?

- Specific feedback based on the phase one report, including lessons learned from other municipality, implications of existing plans on developing this project and current practices, influencing day-to-day decision making.

2.0 Phase One Summary

The following is a summary of best practices from similar projects in five other municipalities, summary of local plans and studies influencing this project, and a summary of current practices that influence day-to-day decision making related to the delivery and maintenance of the City of Lloydminster's active transportation network.

2.1 Best Practices (from other municipalities)

The following is a summary of best practices from other municipalities. Five municipalities' similar projects were reviewed, including:

- City of Beaumont, Alberta – Population: 17,396: Open Spaces and Trails Master Plan
- City of St. Albert, Alberta– Population: 65,589: Active Transportation Plan Development Strategy and Gaps Assessment
- City of Saskatoon, Saskatchewan – Population: 273,010: Active Transportation Plan
- District of Summerland, BC – Population: 11,615: Sidewalk Master Plan and Trails Master Plan
- Town of Hinton, Alberta – Population, 9,882: Parks and Open Space Master Plan

- **Higher Level Documents:** All of the plans reviewed from other municipalities referenced high level planning documents that directed the need for a trails and sidewalk master plan. Examples of these higher level planning documents include Open Space Framework Plan, Community Services Needs Assessment, and Transportation Master Plan. There are is no specific City of Lloydminster planning document with direction for creating this plan, rather the initiation of the trails and sidewalk master plan has been driven by City Council. The City has several documents having implications for developing the trails and sidewalk master plan, but no specific direction for this plan.
- **Vision Statement:** All plans reviewed have a vision statement, which is recommended in this study. The project vision needs to confirm the level of focus for enhancing trail user experience and the how much priority should be given over expanding the recreation of commuter trail system. Vision statement items are dependent on the needs of the City, but example vision terms include interconnected trails, safety, defined goals to increase active transportation mode share (target mode share percentage), inclusivity and equity, increase attractiveness of active transportation, and supporting recreation and commuting trips.
- **Prioritizing Projects:** Four of five documents use a qualitative prioritization system and this is recommended for the City of Lloydminster. Developing a complex weighted scoring prioritization system is not recommended due to the smaller size of the City of Lloydminster. Alternatively, a qualitative prioritization system reflecting the project vision and defining prioritization elements is recommended. Suggested items for prioritizing projects include: potential to close network gaps, location of the trail/sidewalks to key destinations or corridors, proximity to transit, expanding recreational trails, equity and safety for all users, connectivity to specific land uses (schools/retail)
- **Other:** Other items including gaps assessment, public and stakeholder engagement and capital planning are in line with other studies reviewed and included with this study. Conducting the gaps assessment through desktop level analysis and public input is included in this study and consistent with other plans reviewed. Developing and applying techniques for evaluating pedestrian crossing safety was not found in other documents reviewed, but is included in this study making it unique.

2.2 Current Plans

The following is a summary of current City planning documents related to the trails and sidewalk network.

- **Municipal Development Plan (MDP):** The MDP is a statutory document intended to guide the growth and development of the City of Lloydminster. The document provides a 20-year planning time frame from 2013 to 2032 in which the population is anticipated to grow to approximately 50,000 people. The City's MDP contains policies indicating the need for promoting active transportation in the City.
- **Intermunicipal Development (IDP):** The IDP provides a framework for collaboration between the City and the County of Vermillion River and confirms the need for providing a regional trail system designed to take advantage of open spaces and linear right-of-ways as an option for providing off-road alternatives for cycling, cross-country skiing and walking. Opportunities for regional trails include potential connections between the City and the employment areas located along Highway 16, west of the City boundary and possibly taking ownership of the abandoned rail right-of-way located in the City's northwest.
- **Lloydminster District Planning Commission (LDPC):** The LDPC acts as more of a bylaw for controlling land use development with the assigned LDPC area. Provisions, guidance and requirements for including active transportation plans are missing from the LDPC, although there is incredible offerings for parks and open spaces within the area, including Neale Lake. As the City expands to the east, joint collaboration opportunities among the RMs of Wilton and Britannia and the City are especially significant where there is a need.
- **Land Use Bylaw (LUB):** The Lloydminster LUB (2016) does delineate circulation requirements for development permit approval in the form of sidewalks, trails and necessary connections. Further to this, trail and sidewalks development recommendations for specific conditions and pedestrian safety considerations are provided. Terms like "safe crossing" are used for conditions to be achieved but not defined in a quantitative way. Specific recommendations pertaining to development standards and types of trails to be provisioned are not provided; however, Lloydminster does have guidelines in place for new development to ensure trail and sidewalks are built in appropriate locations.
- **Transportation Master Plan:** The Lloydminster Transportation Master Plan identifies the City's long range and shorter-term transportation requirements and capital plans. The document includes an active transportation gap assessment and priority recommendations, review and development of the pedestrian and cyclist circulation system, traffic signals review, and a trails and sidewalks review that may be reviewed for this Master Plan. Improvements to sidewalk and trial connectivity are listed in the short-, medium-, and long-term capital plans.
- **Growth Strategy and Service Assessment:** Completed in 2013, the Growth Strategy and Service Assessment are two parts of the City of Lloydminster Comprehensive growth Strategy to determine growth directions over the next 30 years. The Servicing Assessment identifies long-term infrastructure requirements for the Growth Study. The findings of the Comprehensive Growth Strategy will inform the possible expansion of the City's boundaries to ensure there are adequate lands for the next 30 years of development.

2.2.1 Current Practices

Understanding the City's current practices is an excellent input for developing the project, carrying forward practices that currently work well, expanding on current practices where relevant, and eliminating and/or replacing practices not meeting the City's goals. To understand the current practices, a series of questions were submitted to the City and discussed at the start of the project.

1. **How do you currently make decisions as follows:**
    a. **Location of trails**
        i. Through review of subdivision design approvals and reviews, the engineering team uses best judgment and sound reasoning to determine if there is opportunity to implement or relocate trails.
        ii. By review of public requests/concerns, the City uses best judgment and sound reasoning to determine need and viability of new trail (e.g. 52 Street between 50 Avenue and 62 Avenue, opted to get design made due to demand and concerns to improve connectivity).
        iii. Via internal request, the City uses best judgment and sound reasoning to determine need and viability of new trail.
        iv. Note factors like link completion, connectivity improvement, demand (frequency of request/concern).
        v. In summary, up to this point, the City has not had a defined decision matrix and/or road map for determining where trails will be put and what connectivity links are completed. A lot of the trail locations are more reactive than they are proactive.
    b. **Types of trails (or are they all standard asphalt)**
        i. Newly built trails are all asphalt.
        ii. Shale – These trails are being upgraded to asphalt on an annual basis. The City has been opting to upgrade all trails to an asphalt concrete pavement and move away from "eco" trails that consist of shale, mulch, etc. as the City has found the maintenance of these trails to be burdensome. In the original Bud Miller All Seasons Park, mulch and shale trails would have fit in well; however, we do not have areas within the City where an "eco" trail would be well accepted by the public.
    c. Crosswalk improvements (any internal guidelines?)
        i. Currently using the Transportation Association of Canada (TAC), Pedestrian Crossing Control Guide. Some examples of this include the implementation of several rectangular rapid flashing beacons (RRFB) at select locations.
    d. Trails for new development
        i. As mentioned above, use best judgment if there's an opportunity to implement; the City's development coordinator is key in the process and works closely with developers to seek more information regarding trail placement and location.
2. **How important is trail experience to the City?**
        i. Standard drawings for construction exist but the City will veer from standards in rehab situations as needed.
        ii. Trail system is a growing priority and the City is looking for:
            – a more objective means of determining the need or warranting for trail construction;
            – a more objective means of determining the location of the trail; and
            – determining if there is opportunity to consider several different types of trails.

iii. A good example is the trail that was added to 62 Avenue, receiving positive feedback from the public, and seeded discussion for new trails.

iv. A more challenging example is a proposed trail on the north property of Bud Miller Park, which received negative feedback from the public. Trail planned behind residential lots, abutting the east/west fence line (shown in the aerial below).

Figure 2: Previously Proposed Trail

3. **Do you have any existing minimum standards for trails/sidewalks within the constructions standards, including width/material and landscape design? (Other than from the road standards).**
   a. Municipal development standards only.

4. **How is trail/sidewalk maintenance performed?**
   a. As needed based on visual inspection and request by parks.
   b. Any trail that is not currently asphalt needs to be upgraded to asphalt as budget allows.
   c. Snow clearing as needed.

2.2.2 Background Information on Pedestrian Crossings Guide (Answer 1.c)

The City is currently using the TAC Pedestrian Crossing Control as a guide, and the following is a summary of the guide.

- Application of the Guide: Crossing warranted based on number of lanes, daily volumes, pedestrian volumes and/or desire lines. Must be a specific distance from another crossing location, 100 – 200 m (varies).
- Results of the Guide
  - Not warranted.
  - If warranted, recommended type, including (from lowest to highest protection):
    - ground mounted signage;
    - rectangular rapid flashing beacon;
    - overhead flashing lights; or
    - half signals.
  - Recommended installation requirements: Line marking type (zebra, parallel), installation requirements prohibited stopping area, passing restrictions, land change prohibition, and advance warning.
  - Desirable installation components: Refuge islands, curb extensions, countdown timers, reduced radius, crossing guards, larger no stopping zones, and larger no passing zones.

2.2.3 Questions for Stakeholders

Question #1: Are there any missing driving and/or influencing documents?

Question #2: How is the future trail and sidewalk network envisioned? Some example areas include:

- providing a high level of connectivity across the City;
- providing more or expanding recreational trail networks; and
- enhancing trail user experience by providing additional park/trail amenities.

Question #3: How should future projects for the trail and sidewalk network be prioritized? What areas are important?

Question #4: What current practices should continue, which should be expanded on, and/or which should be stopped/revised?

Question #5: Are the recommended requirements of the pedestrian crossing guide sufficient?

- Are there any types of crosswalks not desirable?
- Are there any new types aspired to?
- Are there desirable components that should be mandatory and where?

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Project:	**Trails and Sidewalk Master Plan**	Project No.:	**15662**
Client:	**City of Lloydminster**	Meeting Date:	**May 20, 2020**
Location:	**Teleconference (Microsoft Teams)**	Meeting Time:	**3:00 PM**
Purpose:	**Visioning Workshop**	Meeting No.:	**1 of 1**
In Attendance:	**Warren Aguinaldo (City),Blake Nielsen (City), Charles McDonald (City), James Rogers (City), Jessica Latchuk (City), Jim Ambros (City), Natasha Pidkowa (City), Terry Burton (City), Dan Zeggelaar (ISL), Shane Budish (ISL), Alexandra Morrison (ISL), Jackie Prior (ISL)**	Written By:	**Jackie Prior**
Distribution:	**All attended, Randy Heaps (ISL), Jen Esler (ISL), Cam Matwie (ISL)**		

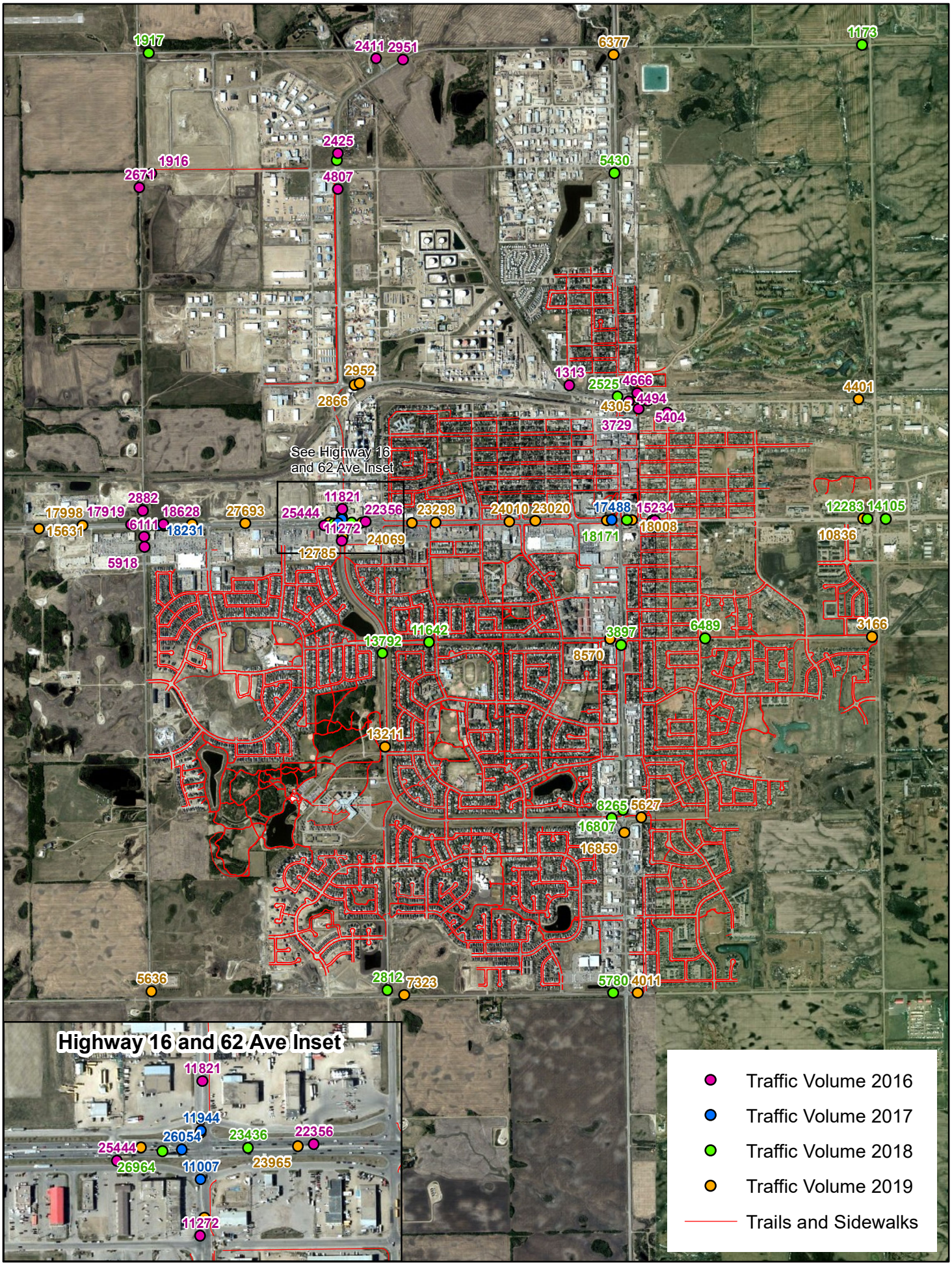
The subjects discussed and decisions reached are summarized in the following record. Please notify the author of any errors or omissions. If no comments are received within 7 days this record is considered correct.

Item No.	Description	Action By
1.0	**1. Introductions** a. Dan – Project Manager, (ISL) b. Warren –Project Manager, Traffic Branch (City) c. Terry – Director of Planning (City) d. Jessica – Community Engagement (City) e. Jim – Supervisor, Roadway (City) f. James – Senior Manager, Capital Infrastructure (City) g. Charles – Supervisor, Roadway (City) h. Natasha – Manager, Planning (City) i. Blake – Manager, Parks and Green Spaces, (City) j. Alex – Engagement Coordinator (ISL) k. Shane – Landscape Architecture (ISL) l. Jackie – Transportation E.I.T (ISL)	INFO
2.0	**2. Open Discussion** a. What everyone would like to see from this Plan? Is there anything people would like to discuss or note? • Create justification for new trails, create a process for prioritizing projects easier • Look at current network for gaps, put some principles into place for what is needed in the future, survey data with conditions and how that ties into this project, generally how to maintain and predict capital programs for sidewalks and trails. • Have heard a lot about trails and sidewalls from the community, particularly from the vocal biking community, who has provided with maps drawn with what they want to see. • Identifying how to link areas new and old. Framework for pedestrian crossings, with a clear process to determine that is warranted to provide explanations to the residents. • Outline maintenance best practices. • Maintenance and snow removal considerations. • Ensuring trails are connected, reduce trails that go to nowhere. • Replacement plan, trail amenities such as benches and signage, continued improvement on trails apart from installation. It was	INFO

Item No.	Description	Action By
	noted that the City currently has minimal trail amenities when compared to other municipalities. • Cover the spectrum of needs. • Provisions of trail amenities and trail facilities that creates a good experience as well as rational implementation and maintenance. Build, maintain, and utilize sidewalks and trails to their maximum potential.	
3.0	**3. Project Overview** a. Phase 1 and the data collection for Phase 2 complete.	INFO
4.0	**4. Meeting Purpose** a. High level discussion on what the team would like to see in the Master Plan to support the development of the vision statement and future options development.	INFO
5.0	**5. Presentation of Phase 1** a. Best practices review • Vision Statement – what terms should be included in the City's Vision Statement? - Interconnected trails, inclusivity, safety, supporting recreation. - Safety, inclusivity, mode share target. Concerns for increasing attractiveness for active transportation in terms of balancing with maintenance. - Ease of maintenance, safety such as warranting for crossings. - Supporting recreation. - Increasing active transportation opportunities. - Interconnected trails and sidewalks, safety, supporting commuter trips, maintenance, usability is a good term. - Ensuring existing and future infrastructure facilitates growth and expansion. • Prioritization system – how should future trails and sidewalk project be prioritized? - Conceder future maintenance. - Attention to closing gaps and usability on existing network. - Close network gaps as a top priority. Improve crossing safety, connecting key destinations, proximity to future transit a touchy subject, expanding recreational trails, equity for all users. - Prioritize existing sidewalk and trails network and closing gaps rather than expanding the network in the short term (next five years). - Close network gaps. - Consideration of public requests. • High level plans - City has consultant that does structural integrity assessments of trails and sidewalks that guide the projects. - This study seen as broader study to get things rolling. - Need to focus on policy synchronization in plans, to make sure policy documents tie together. b. Existing Plans/Documents • Reviewed in the meeting, nothing to note. c. Current Practices	INFO

Item No.	Description	Action By
	• Trails currently installed based on apparent need at the time. • Trail experience a factor, however not the highest priority. • A lot of feedback about lack of benches, trail mapping, and signage. d. Crossings – how the City currently views the pedestrian crossing system, what should the Master Plan's crossing matric include? • Scramble crosswalk type not desirable. • Shared streets not desirable. • Ground mounted and pedestrian actuated crossings most common. • The City receives requests for more crosswalks, however there is no system in place to objectively determine if the crossing is needed. • Developers evaluate what type of pedestrian crossing should be in place as part of their plan. • Desirable components for Crosswalks: - Determine what is best suited for the situation in a case by case basis - Curb extensions an inconvenience for maintenance but manageable. e. Other – Trail surfaces • Question: Safety concerns for trails, asphalt vs shale? - More a concern for maintenance, a lot of trails lacking lighting. - City's MDS requires hard surfaces and asphalts, although developers proposing shale and red clay trails. Growing inquiry if City will accept other trail surfaces. - It was noted by ISL that other surfaces could be used in less formal trails and may not cause a maintenance issue. Surroundings, location, and planning are more key factors than materiality. Ties into experience and maintenance. - Availability and cost of shale becoming prohibitive.	
6.0	**6. Next Steps** a. Finalize phase 1 summary to support options development	ISL and CITY

APPENDIX C
Traffic Volumes


1917
2411
2951
6377
1173
2425
1916
2671
4807
5430
2952
1313
2525
4666
4494
4305
5404
3729
4401
2866
See Highway 16 and 62 Ave Inset
2882
11821
17998
17919
18628
27693
25444
22356
23298
24010
23020
17488
15234
12283
14105
15631
6111
18231
11272
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18008
18171
10836
5918
12785
3166
11642
6489
3897
13792
8570
13211
8265
5627
16807
16859
5636
2812
7323
5780
4011
Highway 16 and 62 Ave Inset
11821
11944
26054
23436
22356
25444
26964
11007
23965
11272
Traffic Volume 2016
Traffic Volume 2017
Traffic Volume 2018
Traffic Volume 2019
Trails and Sidewalks

APPENDIX D
Detailed Pedestrian Crossing Assessments

#	Where is the crossing? (Add)	What are the intersection classifications? (select)	Traffic Signal Warrant assessment needed? (automatic, do not edit)	Traffic Singals Warranted? (select Y/N/NA)	Crossing Roadway Classification? (select)	Distance from existing crosswalk on crossing roadway (select)	Needed for network connectivity? (select Y/N)	On a pedestrian desire line/ access to public land use? (Y/N)	Daily Traffic Volume Needed (automatic, do not edit)	Traffic Volumes (select)	Pedestrian Volumes Needed (automatic, do not edit)	Peak Hour Pedestrian Volumes (input)	Recommendation (automatic, do not edit)	Required Crosswalk Type
1	44 Street and 59 Avenue	Arterial/Collector	Recommended	N	Arterial	>250 m	Y						Consider adding a crosswalk	OF
2	62 Avenue	Midblock	Not Recommended	NA	Arterial	>250 m	Y						Consider adding a crosswalk	RRFB
3	50 Avenue and 33 Street	Arterial/Collector	Recommended	N	Arterial	>250 m	Y						Consider adding a crosswalk	GM
4	50 Avenue and 15 Street	Arterial/Collector	Recommended	N	Arterial	>250 m	Y						Consider adding a crosswalk	RRFB
5	59 Avenue and College Way	Commercial Access	Engineering Judgement	N	Arterial	150 m - 250 m	N	Y	Y	> 1200	Y	> 12	Consider adding a crosswalk	GM
7	44 Street and 48 Avenue	Arterial/Collector	Recommended	N	Arterial	150 m - 250 m	Y	Y	Y	> 1200	Y	< 12	No crosswalk required	N/A

APPENDIX E

Phase 3a External Stakeholder Round 1 Material and Feedback

LLOYDMINSTER

TRAILS AND SIDEWALK MASTER PLAN

Phase 3a Engagement Summary

September 2020

Communications and Engineering Departments

INTRODUCTION

On August 26, 2020 the City of Lloydminster Administration hosted a virtual stakeholder workshop regarding the Trails and Sidewalk Master Plan. During this workshop, the project team shared with participants project information and gathered feedback to confirm and refine the Project Vision and identified connection issues and opportunities in the current network.

The virtual workshop consisted of both group discussion and small break out rooms where participants could discuss ask questions and provide feedback directly to the project team. Seven total participants joined the project team, with five participants attending the 12 to 1:15 p.m. workshop and two participants joined during the 6 to 7:15 p.m. workshop

Feedback gathered from these workshops will help refine and finalize the project vision, to identify gaps and provide further local knowledge in the current network assessment. The feedback received is summarized below.

PROJECT VISION

We asked participants to take a moment to read the draft Project Vision. We then asked participants to let us know what they liked about the draft Project Vision, what they would change, and what they didn't like.

Draft Project Vision

The Trails and Sidewalk Master Plan improves the existing network by:

- improving access and ease of use though increasing connectivity through the existing network
- creating a safe and welcoming space for users of all ages and abilities to enjoy the natural environment
- encouraging active modes of transportation, physical activity and outdoor recreation

What We Heard:

Likes:

- Includes considerations for safety, increasing connectivity, welcoming and inclusive for all ages and abilities
- Safety could include improving lighting to make people feel safer while utilizing the network, particularly in older neighbourhoods with poor lighting, and is a component of user experience
- Includes active transportation
- Connection and wayfinding are very important to improve with the existing network

Changes:

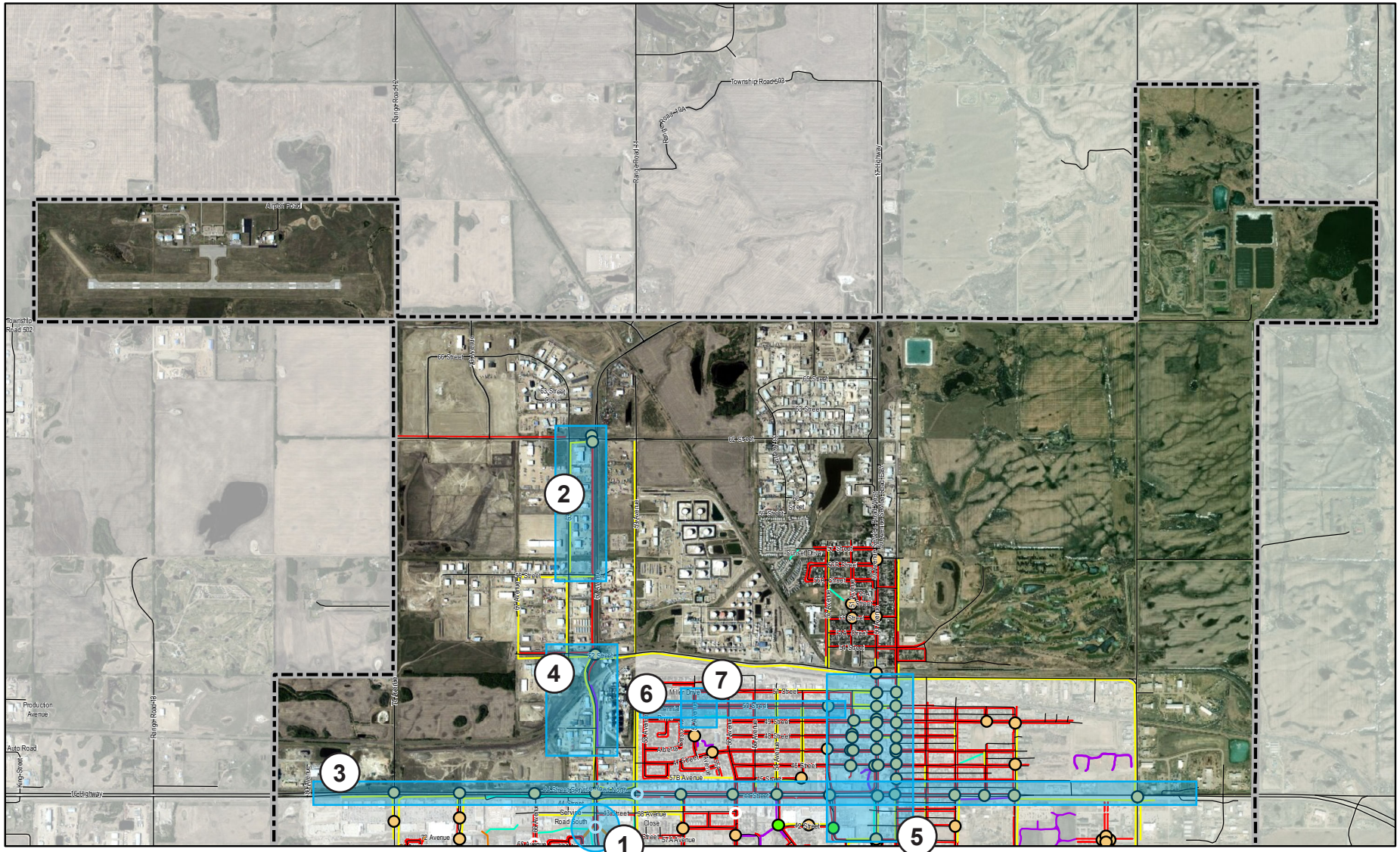
- Consideration for integrating new technologies and existing applications to improve the user experience and wayfinding
- Needs to consider greater connectivity to the surrounding network outside of the City, and all areas of the City need to benefit
- Needs to be forward thinking, not just about improving the existing network, but how to expand in future development
- Maintenance of the path and the surroundings (trees) is important to consider

Dislikes:

- If changes are made, there are no large dislikes

Gaps Assessment

We categorized the city into four distinct quadrants; North, Central, South East, and South West. From there, participants were asked participants to provide input on what gaps, ideas and opportunities we may have missed in our initial assessment of the network.



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TRAILS AND SIDEWALKS MASTER PLAN

MAP X: GAPS ASSESSMENT NORTH

North

Map Comments

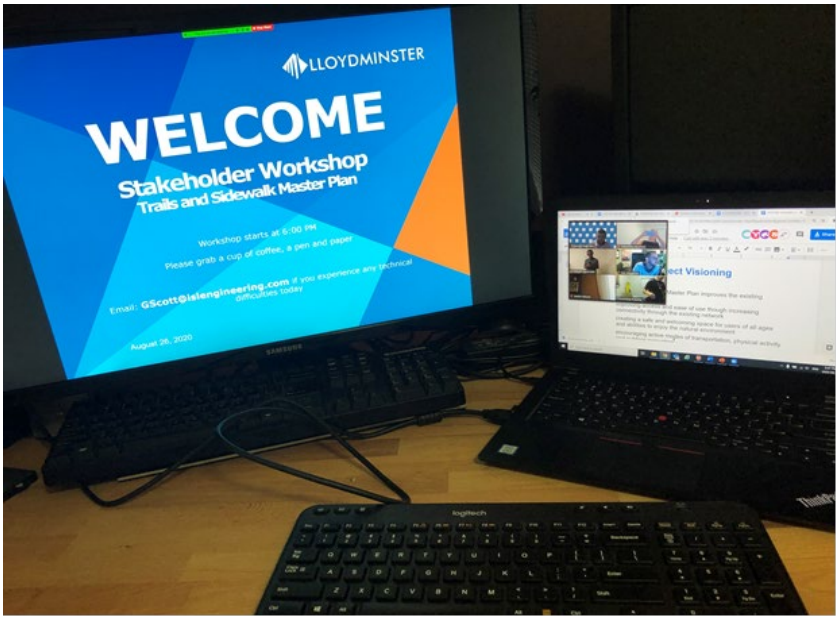
1. Identified missing crosswalk as shown on gaps map
2. The trails here are currently well used by runners as it is cleared of snow regularly, and this provides an opportunity for a potential continuing exercise loop
3. Cyclists do not like to cross Highway 16 as there are few safe crossing areas
4. Some cyclists off-road in this area around the railroad track through the long grass
5. Missing curb ramps and 52 Avenue needs more access for pedestrians, with parking on both sides it can hinder visibility and ease of use
6. Traffic on 50 Street is very fast as the Street is quite wide, there is an opportunity for a flasher light to increase safety. Suggestion for a flashing pedestrian light by the pioneer lodge or outdoor pool as they are well used and will continue to grow in use
7. Long curb radius at 57 Avenue and 50 Street

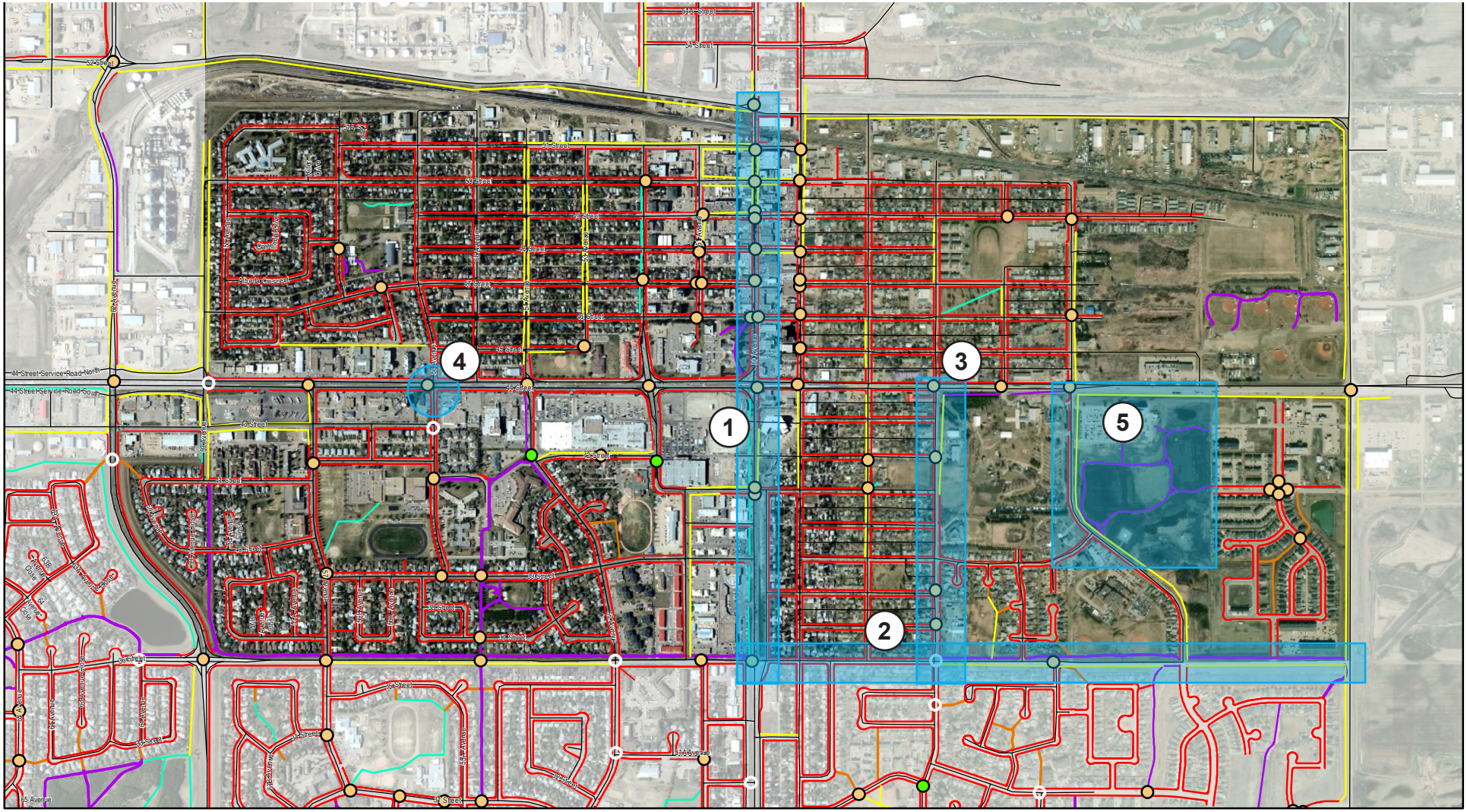
General Comments:

- Trails and sidewalk routes to the schools need to be a safe and well maintained
- Condition and future design of the sidewalks needs to be at the highest possible standard
- There needs to be better access and awareness of access to the northern industrial park for non-vehicle traffic, particularly as residents try to get to 59 Avenue from Highway 16, there is an increase of commuter traffic along this route
- Creating shorter crossing distances for pedestrians throughout is important

Additional Comments:

- Need to consider trails within the North East ASP
- Need to connect to Neale Lake on the north east





1:17,000

City Boundary
Sidewalk
Multiuse Path
Natural Path
Trail
Gaps Assessment
Roads
RRFB Crosswalks
Other Crosswalks
Missing Crosswalks

0 0.075 0.15 0.3 0.45 0.6 km

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TRAILS AND SIDEWALKS MASTER PLAN

MAP X: GAPS ASSESSMENT CENTRAL

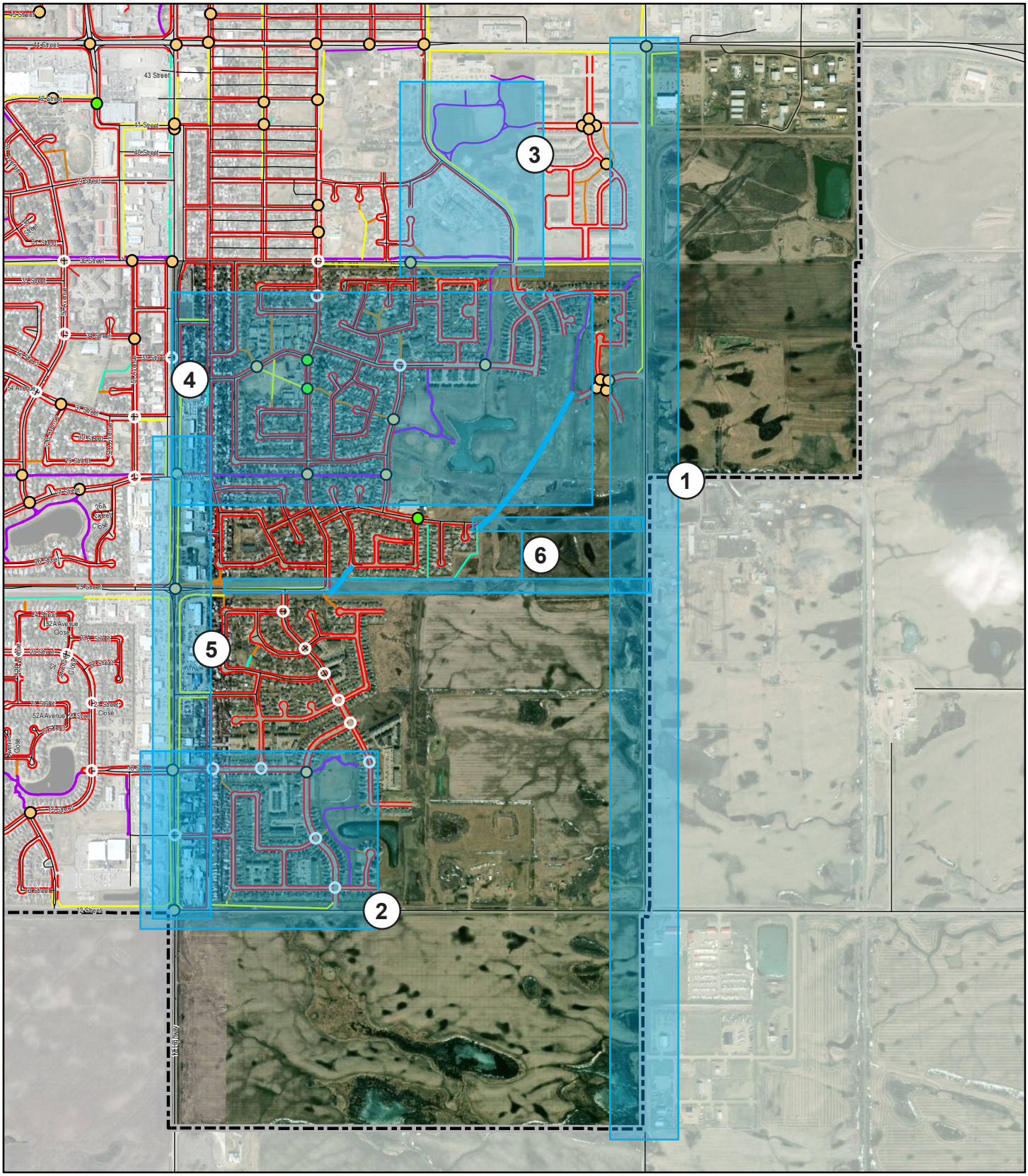
Central

Map Comments

1. High amount of foot traffic, particularly around 36 Street. The Crosswalk at 41 Street is lacking lighting and is one of the only spots to cross Highway 17. More pedestrian consideration to cross Highway 17 is desired
2. This road is currently very narrow for cyclists and runners with poor visibility, there is an opportunity for a trail (3m). Intersection at Highway 17 and 36 Street is used frequently by people going to the co-op and the crossing time is too fast. Desire for more traffic calming and pedestrian friendly changes, like curb extensions
3. Potential for a trail connection on the east side of 47 Avenue to the Dog Park and Cultural and Science Centre, not just sidewalk. There is a lot to see along 47 Avenue
4. Traffic light at 56 Avenue (Weirs Veterinarian Clinic) pedestrian light/signal is appreciated and is perceived as the safest crossing on the highway
5. Opportunity to connect Jaycee park to south Highway 16 trail

General Comments:

- The current connections from central to south are good, but maintenance is important for future use. Upkeep and maintenance of trees need to be a priority to keep the trails and sidewalks clear for users and maintain safe visibility. Maintenance and quality of the sidewalks on the Saskatchewan side is poor
- The quality of sidewalk is poor or too narrow, so runners and cyclists are forced to use the road
- Highway 16 is not overly used by runners due to the high traffic volumes, quantity of traffic lights, and requirement to cross
- There is a lack of a connected trail system in the central area as compared to the south
- Downtown is not very pedestrian/multiuse friendly; downtown is heavily under utilized due to lack of infrastructure; new developments on the major corridors should consider pedestrians and multi-use access and ease of use
- Safety means wider trails and sidewalks for runners, cyclists and pedestrians, crossings that prioritize pedestrians, and uninterrupted loops for training purposes. Preference for more shared-use or multi-use paths
- Opportunity for innovative designed crossing to increase safety called a *cyclops junction*



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City Boundary
Sidewalk
Multiuse Path
Natural Path
Trail
Gaps Assessment
Roads
RRFB Crosswalks
Other Crosswalks
Missing Crosswalks

0 0.075 0.15 0.3 0.45 0.6 km

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TRAILS AND SIDEWALKS MASTER PLAN

MAP X: GAPS ASSESSMENT SOUTHEAST

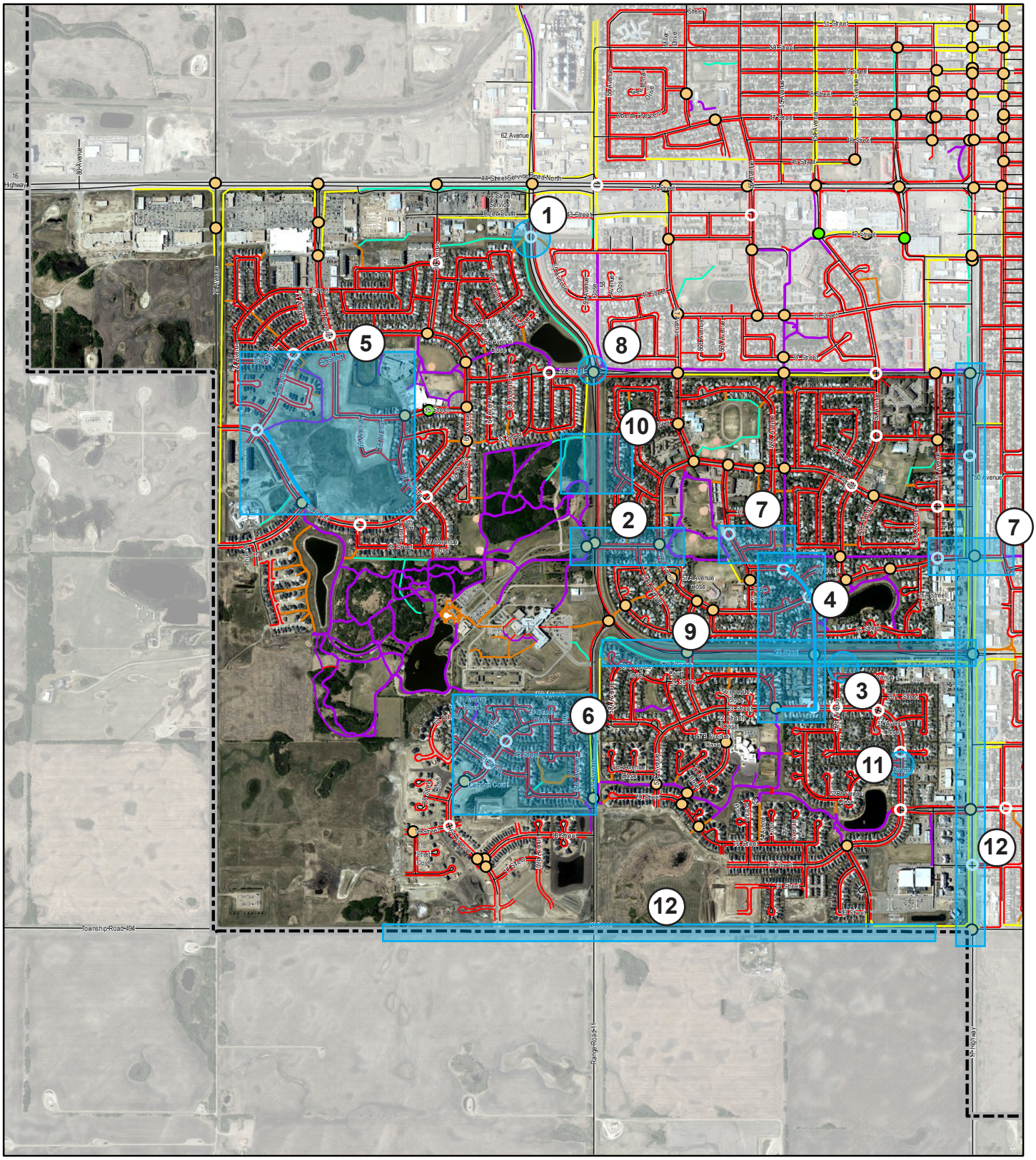
South East

Map Comments

1. Opportunity on 40 Avenue as the east side of the city is developed to expand the trail system to be more connected and integrated with the residential area, as well with Jaycee park, down to the trails north of 12 Street
2. There needs to be more ways for non-car users to access the Servus Sports Centre
3. Opportunity to connect the trail systems in JC park to the existing east west trail on 25 Street
4. Running group crosses at 25 Street, and there needs to be a connection to 25 Street to the rest of the system in the neighbourhood, with connections needed throughout. Suggestion for one as indicated
5. It is very car focused around the car dealership and fast food area. There are many students who are employed who may not have access to a vehicle and rely on active mode infrastructure in the absence of a transit system
6. Opportunity to connect east / west

General Comments:

- Desire to expand and connect trail systems to create a longer uninterrupted network of connected systems
- There is a potential and interest for the City to host events such as a marathon, as there is a strong community of active people, but the infrastructure needs to support it and be better connected to allow for uninterrupted routes
- Idea for decorative stamps to aid in wayfinding, as signage often gets vandalized so decorative stamps would be a solution that can combat vandalism
- Desire to see the future active transportation plans for the entire network



1:23,000

- City Boundary
- Sidewalk
- Multiuse Path
- Natural Path
- Trail
- Gaps Assessment
- Roads
- RRFB Crosswalks
- Other Crosswalks
- Missing Crosswalks

0 0.1 0.2 0.4 0.6 0.8 km

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TRAILS AND SIDEWALKS MASTER PLAN

MAP X: GAPS ASSESSMENT SOUTHWEST

South West

Map Comments

1. Intersection has high traffic and high traffic speeds
2. Need to expand or widen the sidewalk on 29 Avenue between Bud Miller All Seasons Park and Kinsman Participark. Entrance to Kinsman Participark does not align with the curb ramp
3. Dead end sidewalk
4. Opportunity for connection
5. Opportunity for added connections
6. Signage or wayfinding is needed to connect Bud Miller All Seasons Park with Lakeside and College Park
7. Missing multi-use trail
8. Long cycle length and intersection on 36 Street and 59 Avenue
9. 25 Street berm: do not see many walkers, though there is a natural trail in the grass
10. Missing trail on north east of bud miller, natural trail goes from north to north east which accesses east side
11. South crosswalk very heavily used as opposed to the crosswalk north of that at 52 Avenue close
12. 50 Avenue has hardly any crosswalks/sidewalks for the heavy use of the area. North of 25 Avenue is a heavily used bike shop within the area with the recreation programs
13. 12 Street road is too narrow with no trail/sidewalk

General Comments:

- Bud Miller All Seasons Park -usage is going up, with paths congested and overused at all times of a day and safety/ accidents increasing around corners and narrow paths due to poor sight lines. Expanding the network to give people a different area may address the congestion issues
- With only one access point, it can be difficult to find or access Bud Miller All Seasons Park, suggestions for a northern access point such as 75 avenue and the gated Parkview community. The only access on the north side is a hole in the fence
- Sidewalk along College Drive could be upgraded to wider trail; also allows for another venue to travel and for pass-ability of different modes
- Some trails at Bud Miller All Seasons Park can be under water during the thaw season
- Opportunity for a mountain bike trail added to Bud Miller All Seasons Park
- 36 Street crossing is a good connection with an automatic signal
- Confirmation that a sidewalk is needed on south side of 36 street
- A trail should be added behind the berm on College Drive to provide separation from traffic and increase ease of use of the area, as well as the benefit of a reduction of noise, increased safety, and being a visually nicer route

Next Steps

In Fall 2020, the project team will be completing a final phase of engagement to further refine and finalize the options. Engagement will consist of stakeholder meetings and public-facing questionnaires. Visit: yourvoicelloyd.ca/trails to learn more.

APPENDIX F

Phase 3b External Stakeholder Round 2 Public Feedback and Round 2 Material and Feedback

LLOYDMINSTER

TRAILS AND SIDEWALK MASTER PLAN

Phase 3 What We Heard Report

December 2020

Communications and Engineering Departments

ABOUT THE PROJECT

In 2020, the City of Lloydminster launched the Trails and Sidewalk Master Plan project. A Trails and Sidewalk Master Plan will provide the City with a direction for improving the existing trail and sidewalk network; and guides the growth and potential expansion of future trails and sidewalk routes, infrastructure, amenities and policy direction.

In Phase 3 of the project, the City set out to finalize the project vision and gaps assessment with the public and gather input on prioritization areas. A project vision is a shared statement between the community, the City and the project team describing what is important and valued to achieve success. The gaps assessment identified connection issues and opportunities within the current network. The areas of prioritization were determined using public feedback and technical analysis.

The project team used technical analysis and public and stakeholder feedback to create three prioritized categories/areas:

- Short-term priorities (1 to 5 years)
- Medium-term priorities (5 to 20 years)
- Long-term priorities (20+ years)

Due to the COVID-19 pandemic, Phase 3 of the project required all engagement activities be conducted virtually to ensure safety and follow the recommended social and physical distancing recommendations, while also recognizing citizens have a voice and say in the project during this difficult time.

PROJECT TIMELINE

We are currently in Phase 3 of the project.

Phase 1: Vision, Issues and Ideas (Spring – Summer 2020)	Phase 2: Inventory Analysis (Summer 2020)	Phase 3: Options Development and Refinement (Fall – Winter 2020)
Create a Project Vision that reflects community values	Complete technical work to confirm the project direction and inform the option development	Confirm and refine the options for the Master Plan
Online public engagement May-June 2020	*No public engagement*	Stakeholder virtual workshops October-November 2020 Online public engagement October-November 2020

PUBLIC ENGAGEMENT OVERVIEW

In October and November 2020, a digital engagement campaign was hosted between October 26 until November 16, 2020, to gather feedback from stakeholders and the public to inform the Trails and Sidewalk Master Plan development. The following was asked:

- Level of support for the project vision
- Missing gaps
- Level of support for the areas of prioritization

The online engagement was conducted on the City's webpage: yourvoicelloyd.ca/trails and included the following opportunities:

- Online survey
- Stakeholder workshop

This report includes a summary of feedback received from the online survey and stakeholder mapping.

COMMUNICATION AND ADVERTISING

To market the engagement opportunities and gain awareness of the Trails and Sidewalk Master Plan, the following marketing and communication tactics were implemented:

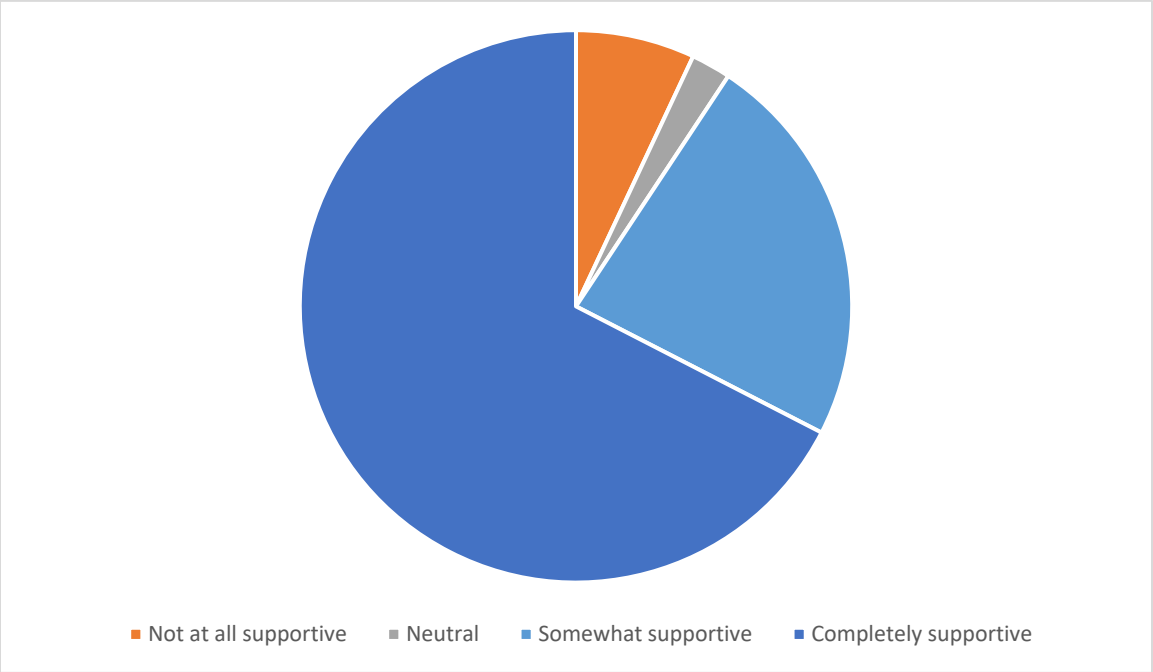
- Social Media
  - LinkedIn
  - Twitter
  - Facebook
  - Instagram
- Media Release
  - The Goat
  - Stingray (Prime Time, 101 Boom, 95.9 Real Country)
  - Meridian Source
  - Kurt Price
  - Lloyd Connect
- Website
  - Yourvoicelloyd.ca/trails
  - Lloydminster.ca
- Radio
  - Real Country
- Newspaper
  - Meridian Source
  - The Bean
  - Morning News
- Newsletter
  - FCSS Lloydminster Newsletter
  - City of Lloydminster Community Engagement Newsletter

ONLINE SURVEY – WHAT WE HEARD

There was a total of 42 total participants in the online survey. The overall key themes were developed with respect to both the diversity and frequency of comments heard. Details of recurring themes in response to each question are included in the following pages.

What is your level of support for the project vision?

43 respondents



91% supportive (67% completely supportive - 23% somewhat supportive)
7% not at all supportive
2% Neutral

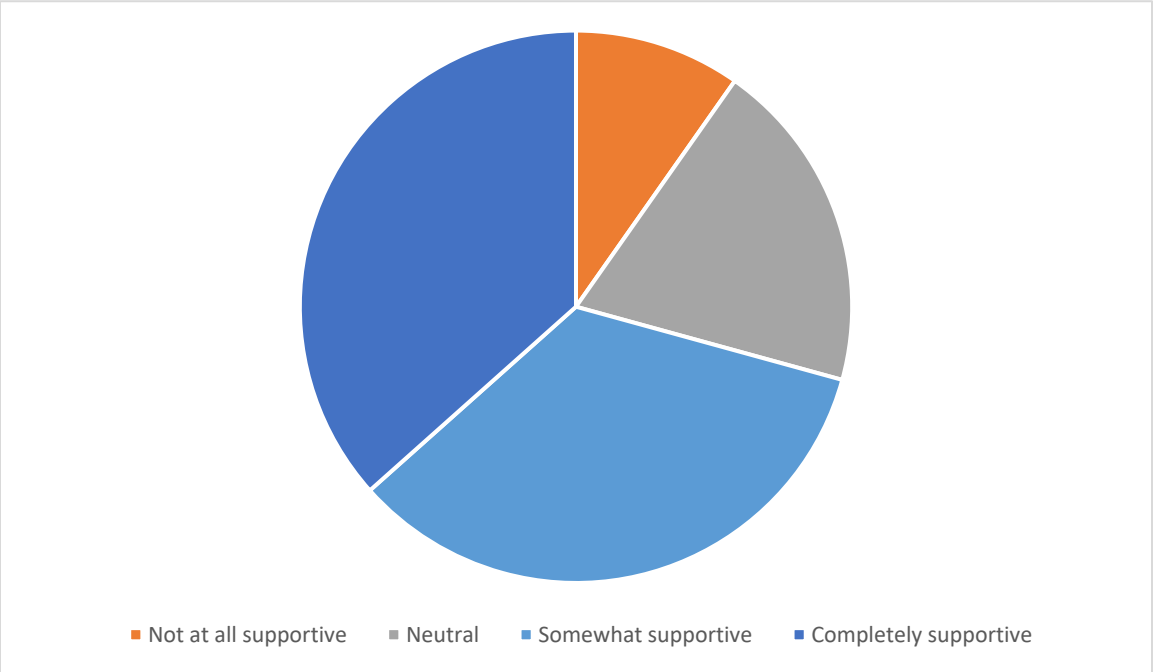
What aspects do you agree, or not agree, within the vision statement?

29 responses

- General support for the vision statement
- Support for increased connectivity, safety, welcoming space, inclusivity for all ages and abilities and encouraging active modes
- Project team needs to consider winter weather conditions, maintenance (snow plowing and landscaping maintenance), placemaking and directly impacted and adjacent landowners

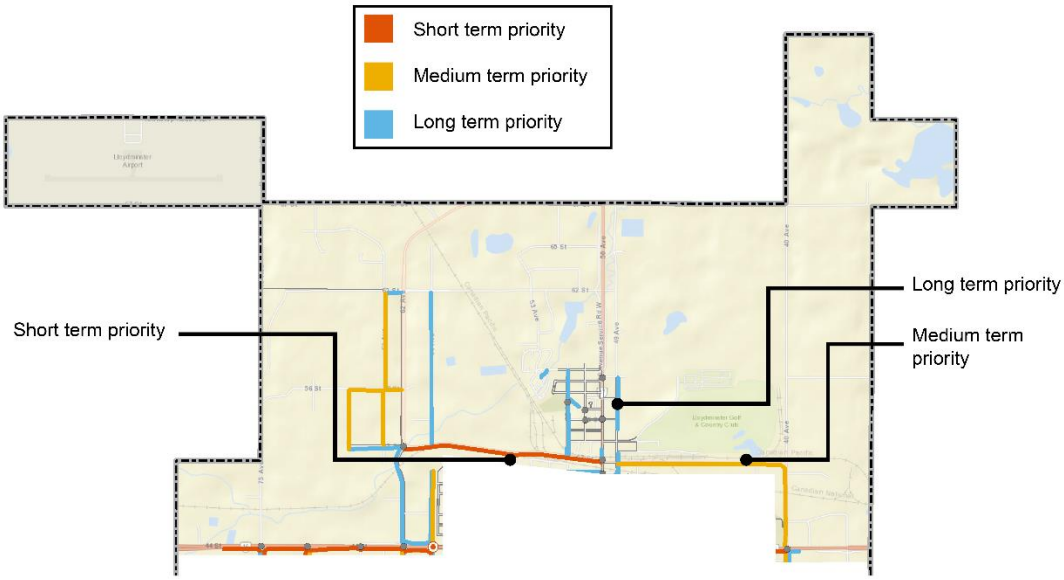
To what extent do you support the identified priorities for the north quadrant of Lloydminster?

41 responses



71% supportive (37% completely supportive - 34% somewhat supportive)
10% not at all supportive
19% neutral

Map of North Quadrant



Are there any missing gaps in the north quadrant map that should be considered by the project team? If yes, please explain.

5 responses

- Consider connections for the future north east area redevelopment
- Add trail along 54 Street near the cemetery
- Add connections in the industrial area
- Add crossings across the rail tracks and on 59 Street at 52 Avenue
- Add a multi-use trail from 62 Street and 62 Avenue to 67 Street and Highway 17

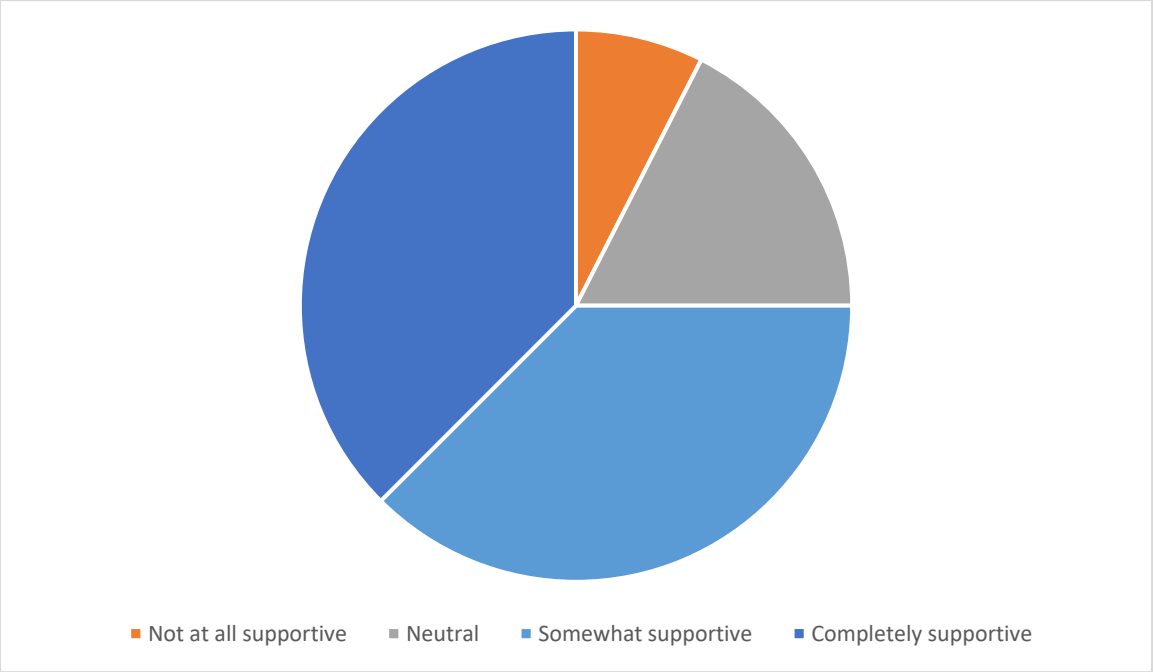
Are there any identified area(s) in the north quadrant where the priority level should be changed and why?

6 responses

- General support for the proposed levels of priority
- Suggestions:
  - Add crossing at Highway 16 and 59 Ave
  - Add crossing at Highway 16 and 44 Street
  - Add trail at 52 Street between 52 Ave to 62 Ave
  - Lower priority at 52 Street

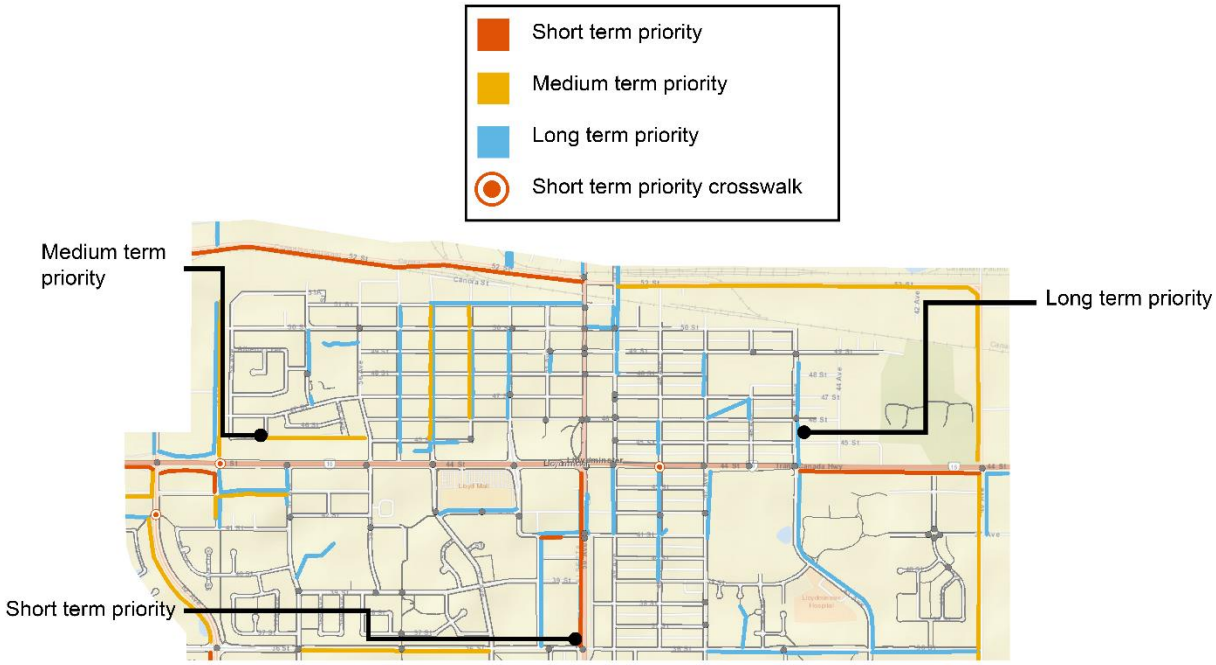
To what extent do you support the identified priorities for the central quadrant of Lloydminster?

40 responses



76% supportive (38% completely supportive - 38% somewhat supportive)
8% not at all supportive
18% neutral

Map of Central Quadrant



Are there any missing gaps in the central quadrant map that should be considered by the project team? If yes, please explain.

7 responses

- Add connections throughout residential neighbourhoods to create a continuous multi-use system for walking and cycling
- Add a multi-use path from 36 Street and 50 Avenue to 36 Street and 47 Avenue
- Ensure maintenance of sidewalks and trails
- Keep natural paths as natural, not paved

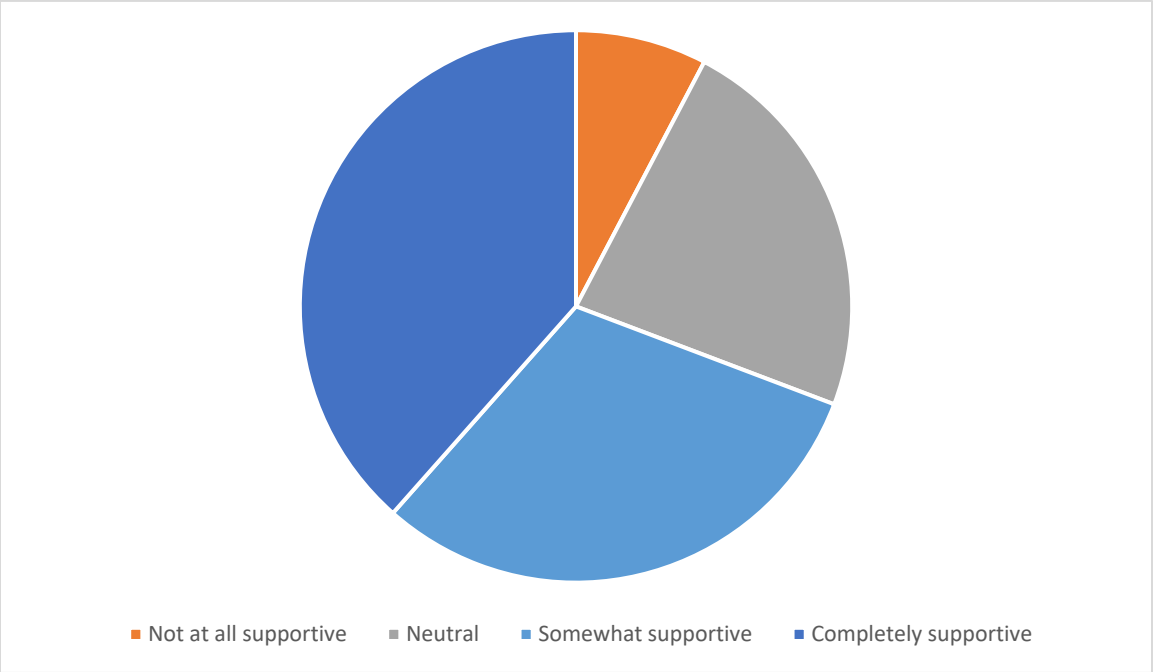
Are there any identified area(s) in the central quadrant where the priority level should be changed and why?

8 responses

- General support for the proposed levels of priority
- Suggestions:
  - Add crossing across Highway 17 at 44 Street
  - Add crossing at 43 Street and 62 Avenue, and suggestion of an overpass
  - Add trail on the east side of Highway 17 between Highway 16 and 36 Street

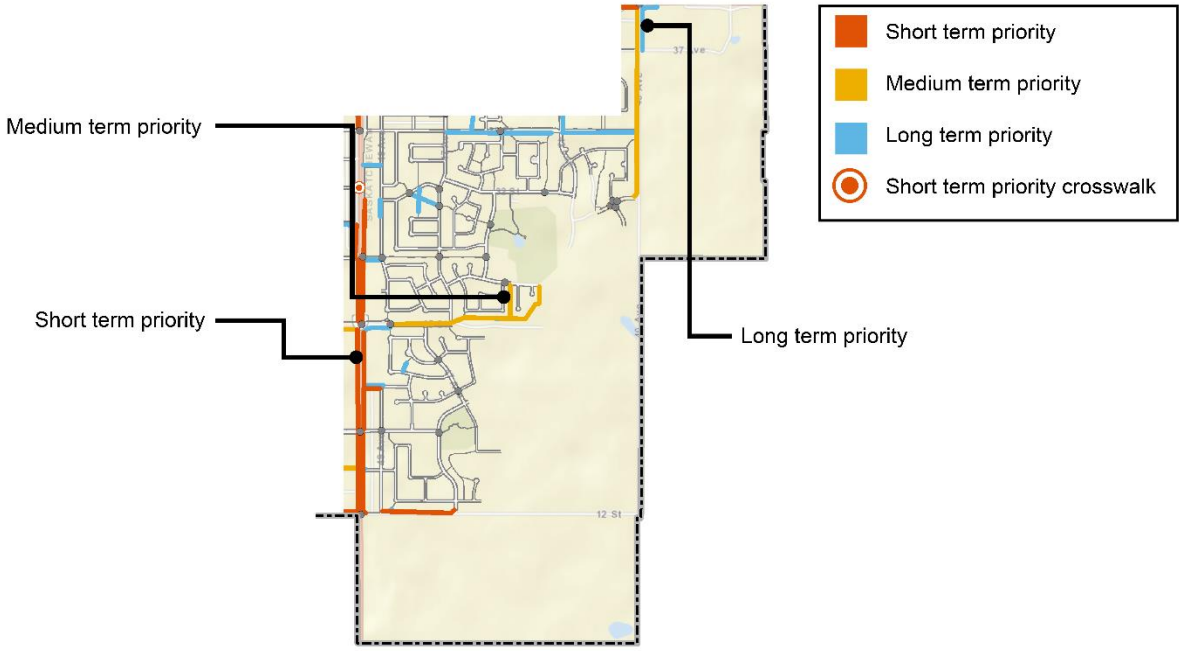
To what extent do you support the identified priorities for the southeast quadrant of Lloydminster?

41 responses



70% supportive (39% completely supportive - 31% somewhat supportive)
8% not at all supportive
23% neutral

Map of Southeast Quadrant



Are there any missing gaps in the southeast quadrant map that should be considered by the project team? If yes, please explain.

7 responses

- Add connections throughout residential neighbourhoods to create a continuous multi-use system for both people who walk and cycle
- Add path from 45 Avenue and 29 Street East to 40 Avenue
- Add connections between the baseball diamond and Winston Churchill School and link to the bike path in Jaycee Park
- Add connection between Highway 17 and Servus Sports Centre
- Lower priority of sidewalks and trails along 75 Avenue, Highway 17 and 12 Street

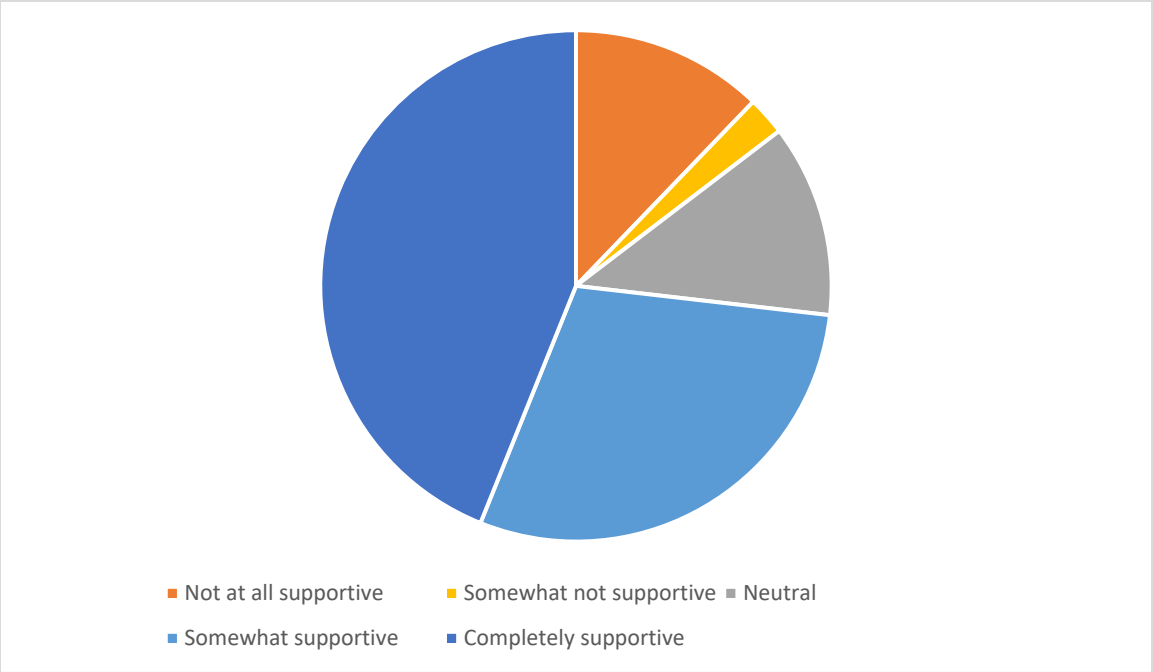
Are there any identified area(s) in the southeast quadrant where the priority level should be changed and why?

6 responses

- Suggestions:
  - Add connections to the southwest corner of Lakeside
  - Add path further south along the east side of 59 Avenue between 25 Street and 23 Street to join College Park School
  - Add a widened sidewalk east-west along 29 Street to better connect Bud Miller All Seasons Park with Kinsman Park
  - Add connections between Servus Sports Centre and College Park along 18 Street
- Lower priority
  - Trails connecting Bud Miller All Seasons Park around 67 Avenue
  - Keep natural trail south of 28 Street as is
  - Trails and sidewalks near the highways or busy roadways

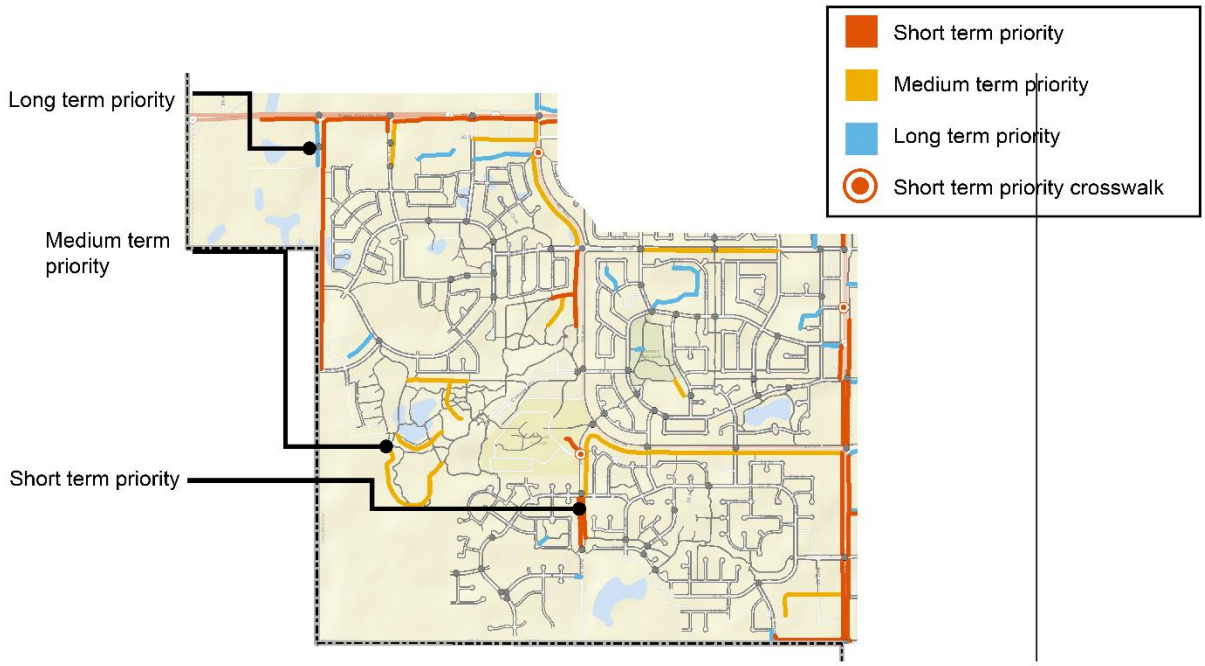
To what extent do you support the identified priorities for the southwest quadrant of Lloydminster?

39 responses



73% supportive (44% completely supportive - 29% somewhat supportive)
14% not supportive (12% not at all supportive - 2% somewhat not supportive)
12% neutral

Map of Southwest Quadrant



Are there any missing gaps in the southwest quadrant map that should be considered by the project team? If yes, please explain.

10 responses

- General support for the proposed levels of priority
- Add connections between Lakeside and College Park and Bud Miller All Seasons Park
    - Connect along 59 Avenue
- Add a multi-use trail between 12 Street and 75 Street
- Add connection between existing trails at 18 Street to 59 Avenue
- Add connection between trail at 65 Avenue and 35 Street to 75 Avenue
- Add path on 12 Street following the ring road to connect to 75 Avenue
- Add crossing on Highway 16 and 66 Avenue

Are there any identified area(s) in the southwest quadrant where the priority level should be changed and why?

9 responses

- Suggestion
    - Consider future development, such as along Highway 17
    - Add connectivity to Jaycee Park, such as from 18 Street
    - Add path from Highway 16 to 12 Street
- Lower priority
    - Trails along highways and major roads
    - Crossings at Highway 17 and 29 Street and 36 Street

Do you have any additional comments about the Trails and Sidewalk Master Plan you would like to share with the project team?

22 responses

- General support of the plan
- Increase maintenance of existing trails and sidewalks and consider winter weather maintenance requirements, such as clearing overgrown foliage and show
- Include considerations for placemaking
- A desire for site-specific engagement on individual paths, particularly regarding additional access into Bud Miller All Seasons Park
- Add connections from the southwest corner of Lakeside to College Park
- Improve crossing at 47 Avenue and across the railway tracks at 52 Avenue
- Questions about construction timelines

STAKEHOLDER WORKSHOP – WHAT WE HEARD

There were six participants in the virtual workshops. Two virtual workshops were scheduled for November 3 from 12 p.m. to 1:30 p.m. and November 4 from 6 p.m. to 7:30 p.m. Details of feedback received in response to the stakeholder workshop are included in the following pages. One email was received by a participant after the workshop.

North Priorities

What do you like?

- 52 Street is a busy arterial, and it will connect busy areas (residential and industrial) but, it should be prioritised closer later in the short-term category
- 52 Street and Highway 16 trails are needed
- Future for sidewalk/crosswalks within the Queen Elisabeth school area

Should there be any changes?

- Lloydminster Village access points on 57 Street for buses and sidewalks for patrons

What do you not like?

- *No comments*

Additional Comment

- Concern about the use and benefit of prioritizing paths from residential areas to industrial areas
- Cyclists and runners would like to see a ring-trail around the city in the future

Central Priorities

What do you like?

- Adding a crossing at 44 Street and 48 Avenue

Should there be any changes?

- Routes/connections surrounding the schoolyards should be given higher priority
- Add enhanced crossing (flasher) along Highway 17, specifically at 42 Street (connection to Superstore), as a priority

What do you not like?

- *No comments*

Southwest Priorities

What do you like?

- The sidewalk along 50 Avenue is a high priority in the area, as it connects communities to service areas and business/places of work
- Adding a path from Lakeland College south along 59 Avenue

Should there be any changes?

- Lower the priority of 75 Avenue
- The connection along 59 Avenue (between Bud Miller All Seasons Park and 36 Street) should be an “early” medium-term priority
- Add wayfinding signage for the trails system within Kinsmen Park and the transition out of the park and add signage to short-term priority

What do you not like?

- *No comments*

Additional Comment

- Concerned about the area connecting 59 Avenue to Bud Miller All Seasons Park, but desire to improve the entrance and traffic flow to Bud Miller All Seasons Park

Southeast Priorities

What do you like?

- *No comments*

Should there be any changes?

- Add paths around the pond in Jaycee Park to create additional park options in the City
- Make sure there is an opportunity for trail users to move north and south in this section to service existing and future communities
- Add connections between 44 Street and 32 Street
- Look for other opportunities in the future to add trails where natural paths are starting

What do you not like?

- *No comments*

Additional comments

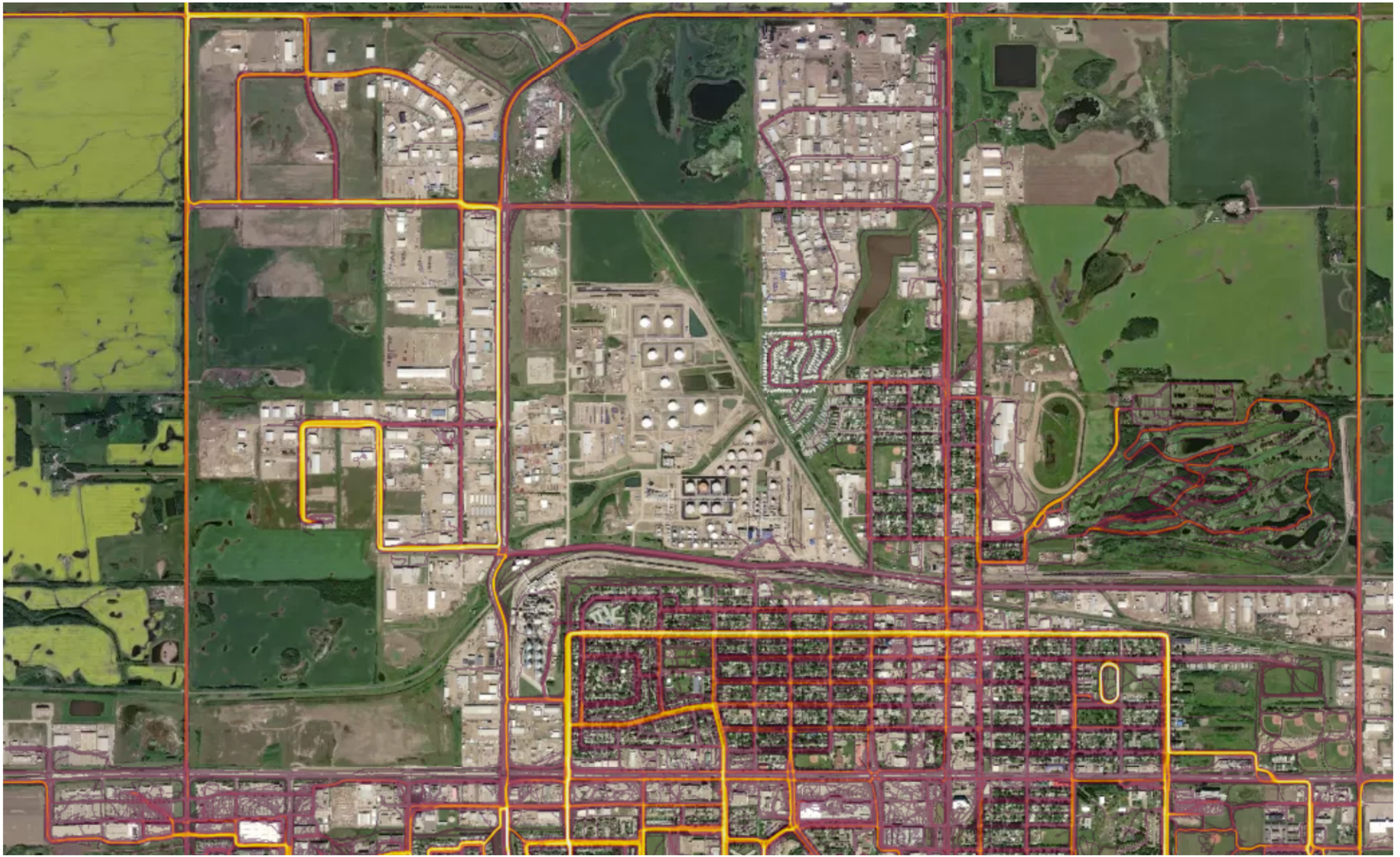
- Concerned about the pace of development of the areas south of Jaycee Park and making sure the sidewalks and trails are developed along with the communities
- Concern about the Saskatchewan side being overlooked in the development of communities and amenities
- Consider collaborative opportunities to create safe bike lockups with the communities (City, residents, businesses, non-profits)

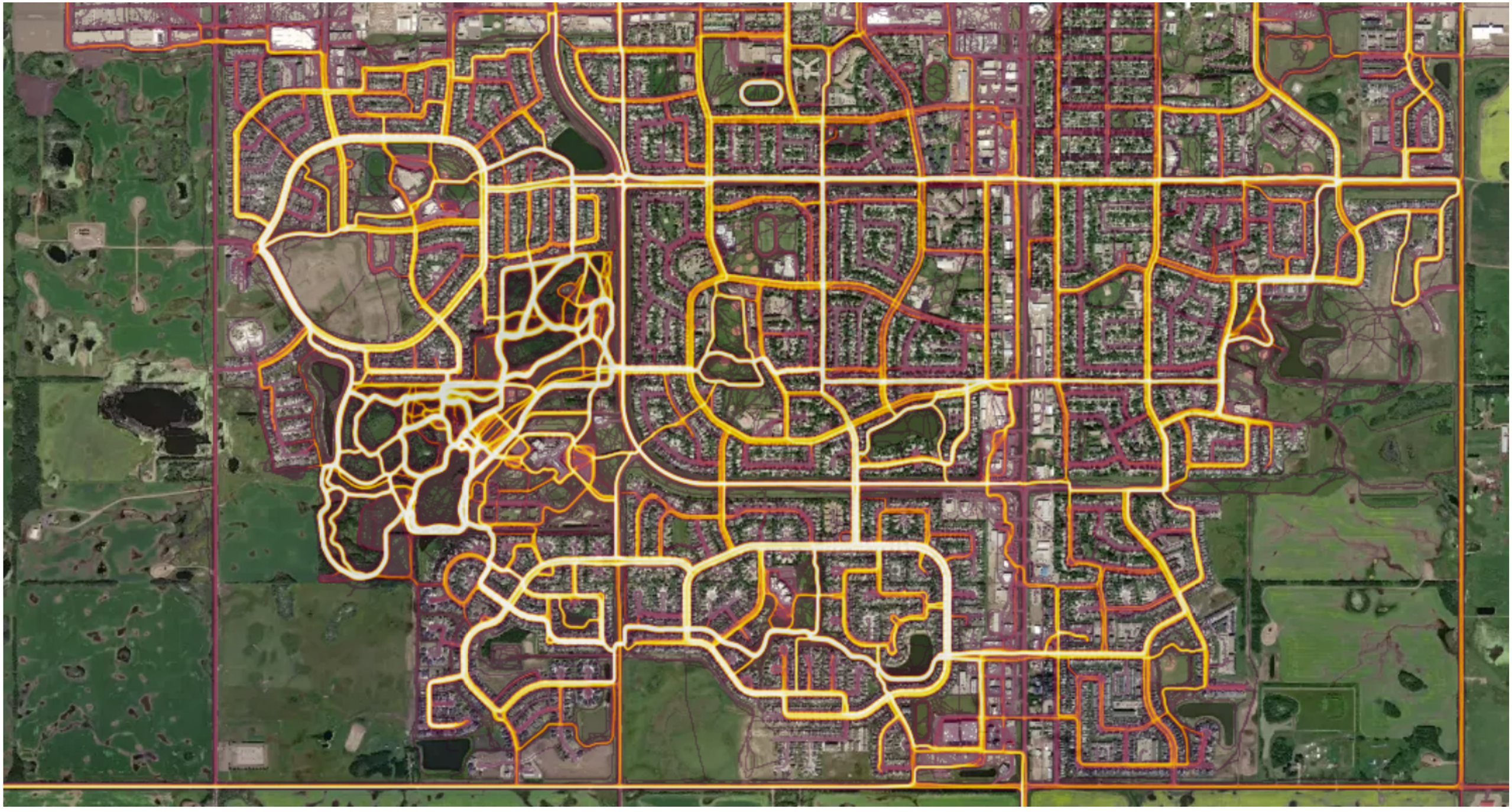
NEXT STEPS

This phase of engagement will help inform the develop the Trails and Sidewalk Master Plan. Visit: yourvoicelloyd.ca/trails to find out more about the project and view project updates.

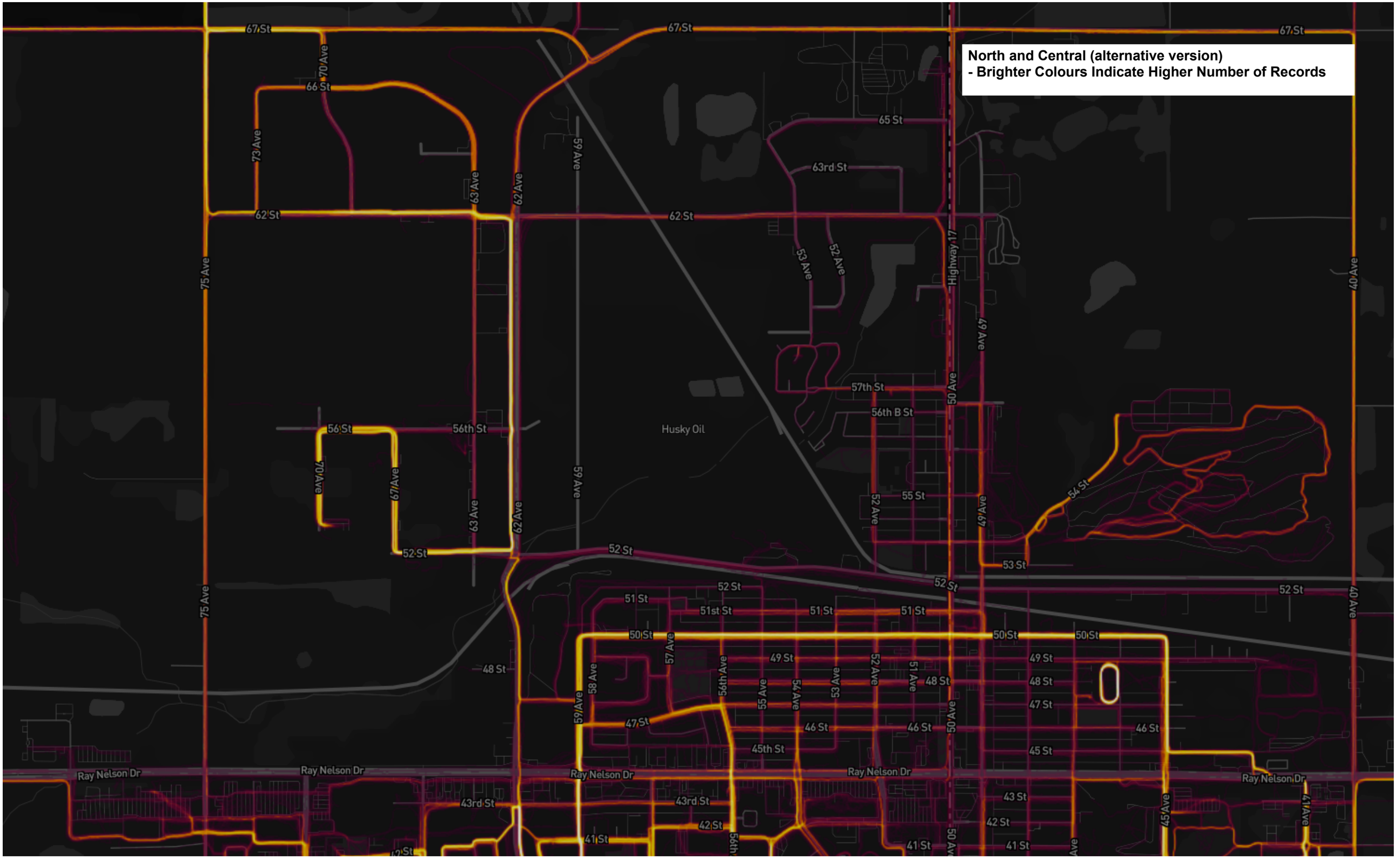
APPENDIX G
Fitness Tracker Heat Maps

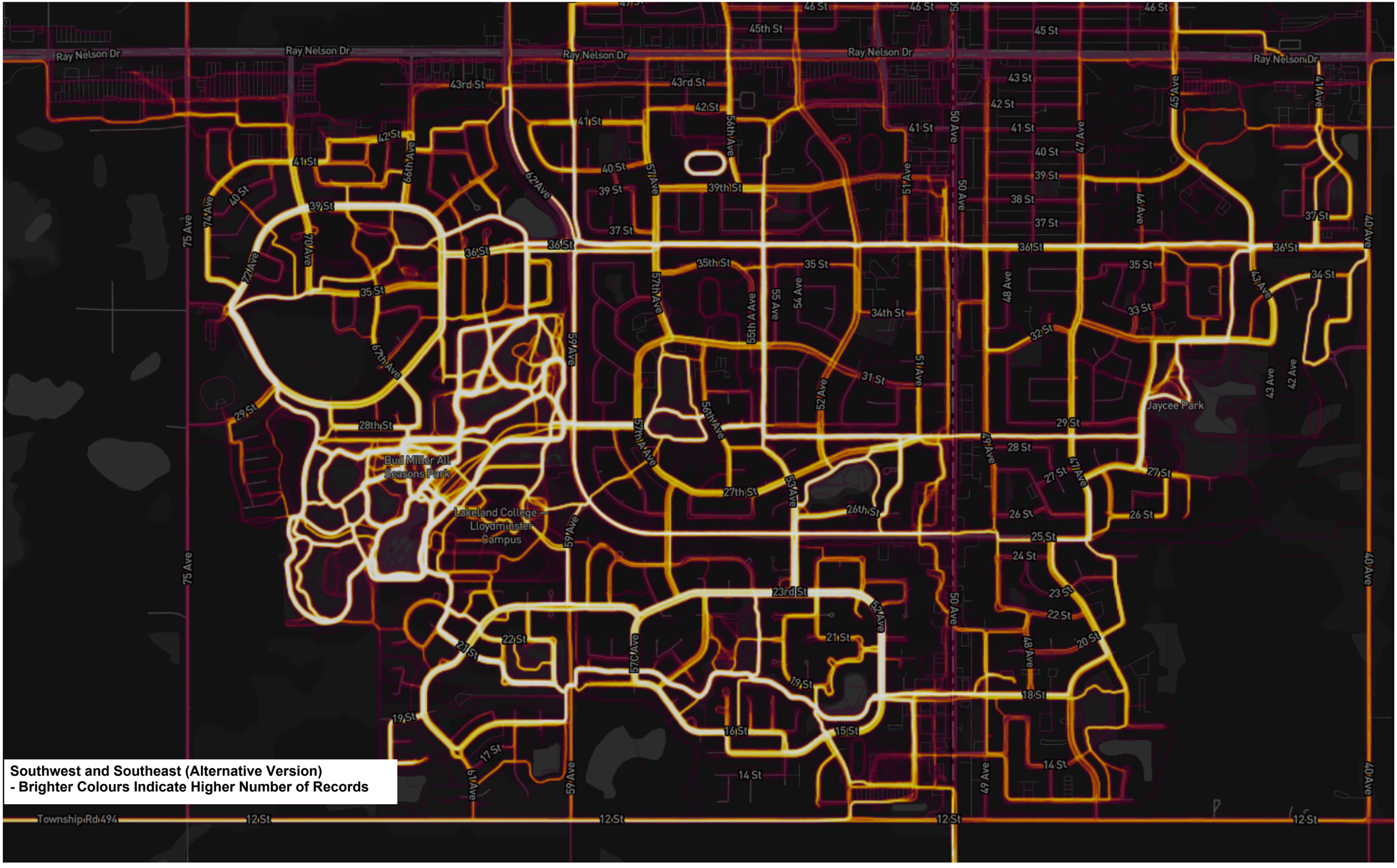
North and Central
- Brighter Colours Indicate Higher Number of Records





Southwest and Southeast
- Brighter Colours Indicate Higher Number of Records


North and Central (alternative version)
- Brighter Colours Indicate Higher Number of Records
67 St
70 Ave
66 St
73 Ave
63 Ave
62 Ave
59 Ave
65 St
63rd St
62 St
53 Ave
52 Ave
Highway 17
49 Ave
40 Ave
75 Ave
57th St
50 Ave
56th B St
56 St
56th St
70 Ave
67 Ave
63 Ave
62 Ave
59 Ave
Husky Oil
52 Ave
55 St
49 Ave
54 St
52 St
53 St
51 St
51st St
50 St
57 Ave
58 Ave
59 Ave
56th Ave
55 Ave
54 Ave
53 Ave
52 Ave
51 Ave
50 Ave
49 St
48 St
47 St
46 St
45th St
45 St
48 St
Ray Nelson Dr
43rd St
42 St
41 St
45 Ave
41 Ave
43 St



Southwest and Southeast (Alternative Version)
- Brighter Colours Indicate Higher Number of Records

APPENDIX H
Cost Estimates

30-Nov-20

Trail and Sidewalk Master Plan

Concept Level Costs

City of Lloydminster

Cost assumptions and description for developing capital plan costs, which include total costs for construction, engineering and contingency.			
Item	**Cost**	**Description**	
Pedestrian Ramp	$2,500	each	Lloydminster provided costs of 2,700 per location. Assumed 2,500 as a average costs per location.
New Sidewalk or Trail	$270	per meter	Cost for sidewalks range from $190 to $340 per meter, with the highest costs for monowalk. Separate sidewalks are expected for most areas as this does not require and work on the curb. $270 per meter is assumed, but will vary depending on site specific constraints and width.
New Multiuse Path	$220	per meter	
New Multiuse Path (with removal of existing sidewalk)	$270	per meter	
Ground Mounted Crosswalk (P or Z)	$1,000	per location (installed by the City)	City provided costs for $550 per location, but increase this to $1000 for contingency purposes.
RRFB (P or Z)	$15,000	per location (installed by the City)	City provided costs of $9,000 per location (for RRFB hardware), increased to $15,000 for contingency.
Pedestrian Half Signal	$150,000	per location	Assumed costs based on 50% of $300,000 (for a full traffic signal), which is assumed to also cover engineering and contingency.

North

Reference Number	Segment	From	To	Location	Type	Length	Term	Costs	Other
1	52 Street	62 Avenue	50 Avenue	TBD	Sidewalk	1900	Short	$513,000	Rail crossings (x2)
2	52 Street	49 Avenue	40 Avenue	TBD	Sidewalk	1600	Medium	$432,000	Extend to 52 Street sidewalk, with rail crossing.
3	56 Street	67 Avenue	62 Avenue	TBD	Sidewalk	525	Medium	$141,750	
4	63 Avenue	62 Street	56 Street	TBD	Sidewalk	925	Medium	$249,750	
5	63 Avenue	56 Street	52 Street	TBD	Sidewalk	525	Medium	$141,750	
6	67 Avenue	56 Street	52 Street	TBD	Sidewalk	525	Medium	$141,750	
7	59 Avenue	52 Street	62 Street	TBD	Sidewalk	1450	Medium	$391,500	
8	62 Avenue	44 Street	52 Street	West Side	Sidewalk	960	Long	$259,200	
9	52 Street	67 Avenue	62 Avenue	South side	Sidewalk	475	Long	$128,250	
10	59 Avenue	44 Street	50 Street	TBD	Sidewalk	550	Medium	$148,500	
11	59 Avenue	44 Street	50 Street	TBD	Sidewalk	550	Long	$148,500	
12	52 Avenue	52 Street	57 Street	East Side	Sidewalk	800	Long	$216,000	
13	52 Avenue	54 Street	52 Street	West Side	Sidewalk	100	Short	$27,000	
14	49 Avenue	52 Street	57 Street	East Side	Sidewalk	60	Long	$16,200	
15	62 Street	63 Avenue	50 Avenue	South	Sidewalk	2100	Medium	$567,000	
16	62 Avenue	44 Street	62 Street	East Side	Multiuse Path	1400	Long	$308,000	
17	62 Avenue	62 Street	67 Street/50 Avenue	TBD	Sidewalk	2470	Long	$543,400	
18	North Industrial			TBD	Sidewalk	2290	Long	$503,800	
19	50 Avenue	57 Street	67 Street	TBD	Sidewalk	1560	Long	$343,200	

Central

	Segment	From	To	Location	Type	Length	Term	Costs	Other
deleted								$0	
2	57 Avenue	47 Street	Alley	East Side	Sidewalk	35	Long	$9,450	
3	57 Avenue	48 Street	50 Street	East Side	Sidewalk	175	Long	$47,250	
4	55 Avenue	Alley north of 44 Street	51 Street	East Side	Sidewalk	640	Long	$172,800	
5	54 Avenue	45 Street	52 Street	TBD	Sidewalk	590	Medium	$159,300	
6	54 Avenue	45 Street	52 Street	TBD	Sidewalk	590	Long	$159,300	
7	Alley north of 44 Stree	55 Avenue	Centre of block	TBD	Sidewalk	65	Long	$17,550	
8	45 Street	54 Avenue	Exisitng sidewalk	South Side	Sidewalk	100	Long	$27,000	
9	51 Street	54 Avenue	50 Avenue	North Side	Sidewalk	650	Long	$175,500	
10	53 Avenue	45 Street	51 Street	West Sdie	Sidewalk	580	Long	$156,600	
11	53 Avenue	46 Street	50 Street	East Side	Sidewalk	380	Medium	$102,600	
12	51 Avenue	48 Street	49 Street	East Side	Sidewalk	80	Long	$21,600	
13	48 Avenue	Alley north of 44 Street	46 Street	West Side	Sidewalk	140	Long	$37,800	
14	47 Avenue	47 Street	49 Street	West Side	Sidewalk	180	Long	$48,600	
15	46 Avenue	46 Street	47 Street	West Side	Sidewalk	80	Long	$21,600	
16	45 Avenue	44 Street	Alley south of 49 Stree	East Side	Sidewalk	440	Long	$118,800	
17	40 Avenue	44 Street	52 Street	West Side	Multiuse Path	680	Medium	$149,600	
18	40 Avenue	44 Street	36 Street	West Side	Multiuse Path	760	Medium	$167,200	
19	44 Street	43 Avenue	40 Avenue	West Side	Multiuse Path	790	Short	$173,800	
20	43 Avenue	36 Street	44 Street	East Side	Sidewalk	920	Long	$248,400	
21	Jack Kemp School	36 Street	North School Boundary	-	Trail	180	Long	$48,600	
22	47 Street	41 Street	44 Street	East Side	Sidewalk	300	Long	$81,000	
23	48 Avenue	39 Street	44 Street	West Side	Sidewalk	470	Long	$126,900	
24	49 Avenue	41 Street	44 Street	West Side	Sidewalk	290	Long	$78,300	
25	50 Avenue	41 Street	43 Street	East Side	Sidewalk	150	Long	$40,500	
26	50 Avenue	36 Street	44 Street	West Side	Sidewalk	760	Short	$205,200	
27	41 Street	51 Avenue	50 Avenue	North Side	Sidewalk	200	Long	$54,000	
28	41 Street	51 Avenue	West of 50 Avenue	South Side	Sidewalk	90	Short	$24,300	
29	51 AVenue	36 Street	41 Street	East Side	Sidewalk	470	Long	$126,900	
30	42 Street	54 Avenue	52 Avenue	North Side	Sidewalk	340	Long	$91,800	
31	57 Avenue	North of 42 Street	44 Street	West Side	Sidewalk	140	Long	$37,800	
32	43 Street	59 Avenue	57 Avenue	TBD	Sidewalk	290	Long	$78,300	
33	43 Street	59 Avenue	57 Avenue	TBD	Sidewalk	290	Medium	$78,300	
34	59 Avenue	41 Street	44 Street	East Side	Sidewalk	220	Long	$59,400	
35	59 Avenue	North of 41 Street	43 Street	West Side	Sidewalk	90	Medium	$24,300	
36	59 Avenue	43 Street	44 Street	West Side	Sidewalk	80	Short	$21,600	
37	44 Street	62 Avenue	59 Street	TBD	Sidewalk	230	Short	$62,100	
38	44 Street	59 Avenue		N/S	Ped Signal	-	Short	$150,000	
39	36 Street	50 Avenue	47 Avenue	TBD	Multiuse Path	520	Medium	$114,400	
40	50 Street	50 Avenue	49 Avenue	South Side	Sidewalk	130		$35,100	
41	50 Avenue	41 Street		E/W	RRFB	-	Short	$15,000	

Southwest

	Segment	From	To	Location	Type	Length	Term	Costs	Other
1	44 Street	76 Avenue	62 Avenue	South Side	Sidewalk	1780	Short	$480,600	
2	75 Avenue	43 Street	44 Street	West Side	Sidewalk	220	Long	$59,400	
3	70 Avenue	North Canadian Tire Access	44 Street	West Side	Multiuse Path	55	Short	$12,100	
4	70 Avenue	South Walmart Access	44 Street	East Side	Sidewalk	280	Medium	$75,600	
5	43 Street	66 Avenue	62 Avenue	South Side	Sidewalk	200	Medium	$54,000	
6	62 Street	Midblock, south of 36 Street		E/W	RRFB	-	Short	$15,000	
7	62 Avenue	36 Street	44 Street	West Side	Multiuse Path	810	Medium	$218,700	
8	59 Avenue	North of 29 Street	36 Street	West Side	Multiuse Path	450	Short	$99,000	
9	South of 33 Street	33 Street Cutthrough	59 Avenue	-	Trail	170	Short	$37,400	
10	Bud Miller Park	2nd most northern parking lot	SW Project #8	-	Trail	360	Medium	$97,200	
11	36 Street	57 Avenue	52 Avenue	South Side	Sidewalk	830	Medium	$224,100	
12	St Joseph Elementary F	Between 28 abd 27a Street	29 Street	-	Multiuse Path	120	Medium	$26,400	
13	31 Street	51 Avenue	50 Avenue	South Side	Sidewalk	100	Long	$27,000	
14	25 Street	59 Avenue	50 Avenue	South Side	Multiuse Path	1560	Medium	$343,200	
15	College Way	59 Avenue	Existing Sidewalk	North Side	Sidewalk	240	Short	$64,800	
16	59 Avenue	College Way		E/W	RRFB	-	Short	$15,000	
17	59 Avenue	23 Street	25 Avenue	East Side	Multiuse Path	420	Medium	$92,400	
18	59 Avenue	North of 18 Street	23 Street	West Side	Sidewalk	320	Medium	$86,400	
19	59 Avenue	North of 18 Street	23 Street	East Side	Multiuse Path	250	Short	$55,000	
20	15 Street/ Field	50 Avenue	Field	TBD	Sidewalk	480	Medium	$129,600	
21	12 Street	50 AVenue	52B Savenue	North Side	Multiuse Path	420	Short	$92,400	
22	52B Avenue	12 Street	13 Street	West Side	Sidewalk	50	Long	$13,500	
23	Bud Miller Park	-	-	-	Multiuse Path	820	Medium	$180,400	
24	Bud Miller Park	-	-	-	Multiuse Path	360	Medium	$79,200	
25	Bud Miller Park	-	-	-	Multiuse Path	290	Medium	$63,800	
26	Bud Miller Park	-	-	-	Multiuse Path	390	Medium	$85,800	
27	75 Avenue	44 Street	Trail Connection		Multiuse Path	510	Short	$112,200	
28	Avenue to 12 Street cir	Trail	29 Street		Multiuse Path	1100	Medium	$242,000	
29	29 Street	59 Avenue	57a Avenue	TBD	Multiuse Path	265	Medium	$71,550	
30	75 Avenue to 12 Street circuit					4500	Long	$990,000	

Southeast

	Segment	From	To	Location	Type	Length	Term	Costs	Other
1	12 Street	49 Avenue	47a Avenue	North Side	Sidewalk	450	Short	$121,500	
2	50 Avenue	12 Street	36 Street	East Siide	Sidewalk	1560	Short	$421,200	
3	50 Avenue	12 Street	36 Street	West Side	Sidewalk	1560	Medium	$421,200	
5	21 Street	50 Avenue	49 Avenue	North Side	Sidewalk	110	Short	$29,700	
6	25 Street	50 Avenue	West of 47 Avenue	South Side	Sidewalk	160	Long	$43,200	
7	25 Street and around r	East of 50 Avenue	27 Street	North Side	Trail	1360	Medium	$299,200	
8	27 Street	50 Avenue	49 Avenue	South Side	Sidewalk	110	Long	$29,700	
9	Colonial park				Trail	340	Long	$74,800	
10	50 Avenue	33 Street		E/W	GM	-	Short	$1,000	
11	35 Street	50 Avenue	49 Avenue	TBD	Sidewalk	110	Long	$29,700	
12	36 Street	47 Avenue	West of 43 Avenue	South Side	Sidewalk	660	Long	$178,200	
13	36 Street	43 Avenue	40 Avenue	South Side	Sidewalk	460	Long	$124,200	
14	40 Avenue	31 Street	36 Street	West Side	Sidewalk	360	Medium	$97,200	
15	40 Avenue	41 Street	44 Street	East Side	Sidewalk	260	Long	$70,200	
16	40 Avenue to 12 Street Circuit					3120	Long	$686,400	

Ramps	Missing	Short	Misoriented	Medium
North	93	232500	42	105000
Central	37	92500	2	5000
Southwest	21	52500	21	52500
Southeast	11	27500	0	0
Total	162	405000	65	162500

Initial Cost Estimates (for each item, refer to applied costs used in the first page of costs)

Cost Summary

Item	Unit	Construction Unit Cost	Engineering (15%)	Contingency (30%)	Total Unit Cost
Install New Pedestrian Ramp	each	$ 1,533.89	$ 230.08	$ 460.17	$ 2,230.00
Remove and Replace Pedestrian Ramp	each	$ 1,641.60	$ 246.24	$ 492.48	$ 2,390.00
New Sidewalk - 1.25m width	m	$ 128.20	$ 19.23	$ 38.46	$ 190.00
New Sidewalk - 1.50m width	m	$ 153.84	$ 23.08	$ 46.15	$ 230.00
New Sidewalk - 1.80m width	m	$ 184.61	$ 27.69	$ 55.38	$ 270.00
New Sidewalk - 2.00m width	m	$ 205.12	$ 30.77	$ 61.54	$ 300.00
Remove Curb and Install New Monowalk - 1.50m width	m	$ 228.34	$ 34.25	$ 68.50	$ 340.00
New Shared Use Path - 3.0m width	m	$ 147.90	$ 22.19	$ 44.37	$ 220.00
Remove Gravel Trail and Replace with New Shared Use Path - 3.0m w	m	$ 147.90	$ 22.19	$ 44.37	$ 220.00
Remove Concrete Walk and Replace with New Shared Use Path - 3.0m	m	$ 183.90	$ 27.59	$ 55.17	$ 270.00

Detailed Cost Breakdown

	Item	Quantity	Unit	Estimate Unit Cost	Subtotal	
New Pedestrian Ramp	Remove Curb and Gutter	4.9	m	$ 24.00	$ 117.60	
	Waste Excavation	1.296	m3	$ 28.00	$ 36.29	
	Install Curb and Gutter	4.9	m	$ 120.00	$ 588.00	
	Curb Ramp	4.8	m2	$ 165.00	$ 792.00	
					$ 1,533.89	**each**
Replace Pedestrian Ramp	Remove Curb and Gutter	4.9	m	$ 24.00	$ 117.60	
	Remove Concrete Walk	4.8	m	$ 30.00	$ 144.00	
	Install Curb and Gutter	4.9	m	$ 120.00	$ 588.00	
	Curb Ramp	4.8	m2	$ 165.00	$ 792.00	
					$ 1,641.60	**each**
Sidewalk - greenfield	Waste Excavation - 270mm depth	1	m2	$ 7.56	$ 7.56	
	Concrete Walk	1	m2	$ 95.00	$ 95.00	
					$ 102.56	$/m2
				1.25m - Sidewalk	**$ 128.20**	**$/m**
				1.50m - Sidewalk	**$ 153.84**	**$/m**
				1.80m - Sidewalk	**$ 184.61**	**$/m**
				2.00m - Sidewalk	**$ 205.12**	**$/m**
MonoWalk	Remove Curb and Gutter	1	m	$ 22.00	$ 22.00	
	Waste Excavation - 270mm depth	1	m	$ 11.34	$ 11.34	
	Install 1.5m Monowalk	1	m	$ 195.00	$ 195.00	
					$ 228.34	**$/m**
SUP - 3.0m width - green field	Waste Excavation - 225mm depth	1	m2	$ 6.30	$ 6.30	
	75mm ACO	1	m2	$ 20.00	$ 20.00	
	150mm GBC	1	m2	$ 15.00	$ 15.00	
	150mm Subgrade Prep	1	m2	$ 8.00	$ 8.00	
					$ 49.30	$/m2
					$ 147.90	**$/m**
SUP - 3.0m width - replace gravel trail	Waste Excavation - 225mm depth	1	m2	$ 6.30	$ 6.30	
	75mm ACO	1	m2	$ 20.00	$ 20.00	
	150mm GBC	1	m2	$ 15.00	$ 15.00	
	150mm Subgrade Prep	1	m2	$ 8.00	$ 8.00	
					$ 49.30	$/m2
					$ 147.90	**$/m**
SUP - 3.0m width - remove concrete walk	Waste Excavation - 225mm depth	1	m2	$ 6.30	$ 6.30	
	75mm ACO	1	m2	$ 20.00	$ 20.00	
	150mm GBC	1	m2	$ 15.00	$ 15.00	
	150mm Subgrade Prep	1	m2	$ 8.00	$ 8.00	
					$ 49.30	$/m2
					$ 147.90	$/m
	Remove 1.5m Concrete Walk	1	m2	$ 36.00	$ 36.00	m
					$ 183.90	**$/m**