

Strathcona Centre Neighbourhood Renewal Interim Report



CONTENTS

1 / Executive Summary	03
2 / Background Research	05
3 / Neighbourhood Survey	15
4 / Public Consultation	24
5 / Case Studies	29
6 / Case Supporting Redevelopment	36
7 / Preliminary Concept Plans	44
9 / Next Steps	46
10 / Definitions	47
11 / Appendices	49
12/ Citations	51

1 / Introduction

The Neighbourhood Renewal program is a long-term approach by the City of Edmonton to renew Edmonton's roads, sidewalks, curbs, gutters, and streetlights through "like for like" replacement of existing infrastructure in neighbourhoods throughout the city. Strathcona Centre is slated to undergo this renewal process beginning in the Fall of 2017 and community league members are interested in improving neighbourhood walkability and active transit opportunities, in line with existing City of Edmonton policy documents. The Strathcona Centre Community League enlisted us, students from the University of Alberta's Planning Program, to help develop concept plans that realize their vision of a more active Strathcona. To inform the creation of these concepts, we have consulted with the community to better understand their perceptions of active transportation and have future engagement events planned. In this report, we explain our community consultation events, investigate context specific benefits of active transportation, the barriers to its implementation, and the reasons why the City of Edmonton should consider a full neighbourhood redesign in the community of Strathcona.

2 / Background Research

2.1 NEIGHBOURHOOD CONTEXT

Bounded by Saskatchewan Drive to the North, 82nd Avenue to the South, 107th Street to the West, and Millcreek Ravine to the East, the neighbourhood of Strathcona is located in the heart of Edmonton. Strathcona has its roots in the city of the same name, which was once considered Edmonton's "sister city." The town site where Strathcona is located was established in 1891 as "South Edmonton" at the terminus of the Calgary and Edmonton Railway (Aubrey, 2004).



Figure 1: 103rd Street and 82nd Ave, 1903

Much of the neighbourhood's current walkable and commercial character can be traced back to 1898, when Strathcona became a city in its own right. With the initial hope of becoming a commercial competitor to its northern sister, Edmonton, the city of Strathcona constructed its own city hall, hospital, library, and theatres in addition to brick factories and grain mills. Development in accordance with strict, regular grid patterns, characteristic of the pre-war streetcar neighborhoods of the era, was concentrated along Whyte Avenue and rail lines, with wealthier households constructing homes along Saskatchewan Drive (Monto, 1989, p.1). The construction of the High Level Bridge in 1912 physically united Strathcona to south with Edmonton to the north, and visions to see the two amalgamated into one city were realized through a vote the same year.

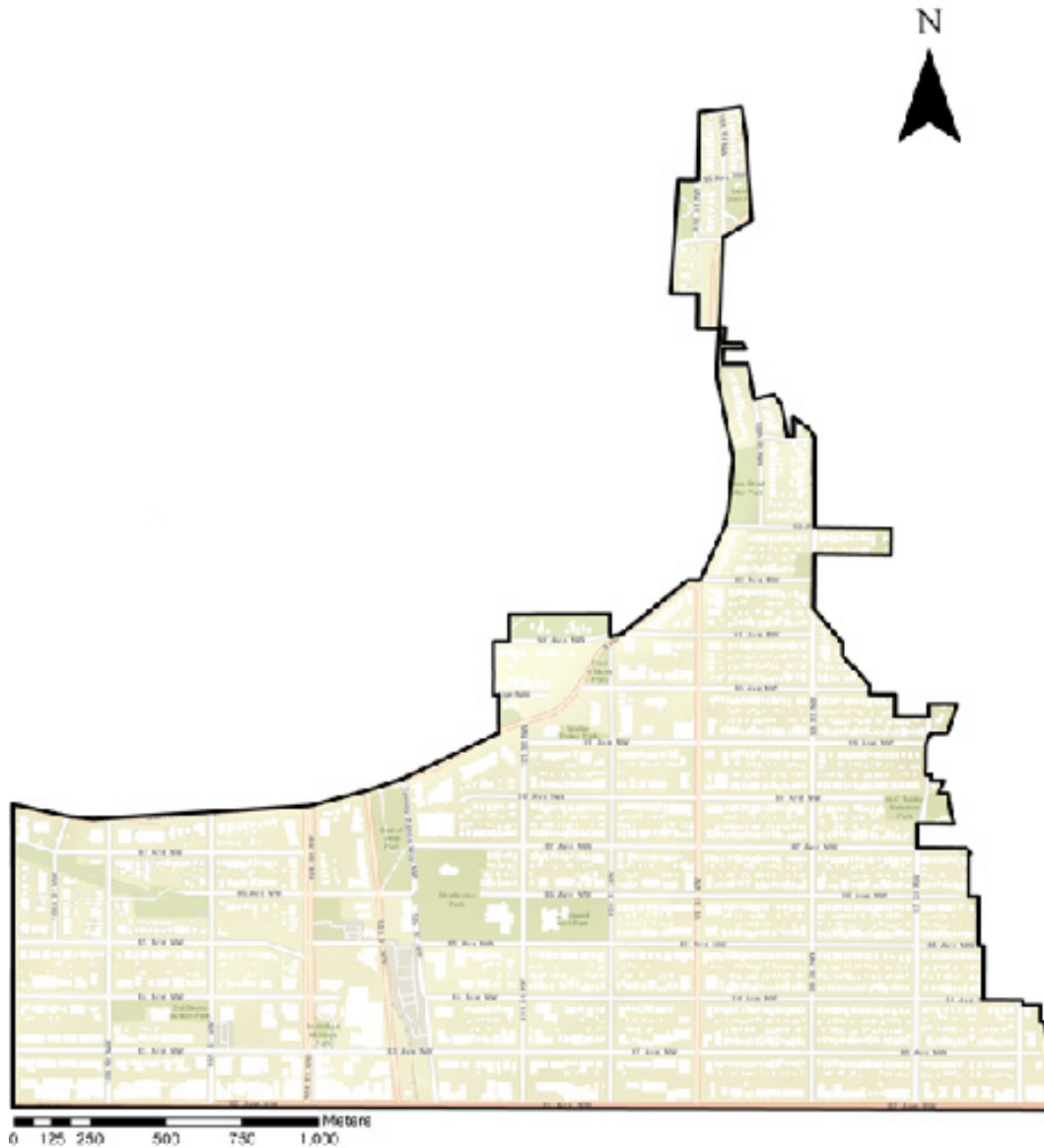


Figure 2: Neighbourhood Map of Strathcona

Despite over a hundred years since the merging of Strathcona with Edmonton, much of the neighbourhood's historical charm and character remains. Landmark structures like the Strathcona Hotel (built in 1891), the Orange Hall (1903), Old Strathcona School (1908), King Edward School (1914), and many heritage homes still stand, and the community is lush with a plethora of greenery. The community is well-known as Edmonton's central cultural and entertainment hub and is host to many of the city's most popular festivals, including the world-renowned Fringe Festival, Ice on Whyte and the Whyte Avenue Art Walk. It boasts a remarkable mix of community parks, schools, fine dining, and local shopping, all which make it a great place to work, walk, and live.

2.2 NEIGHBORHOOD DEMOGRAPHICS

According to researchers from the University of Montreal, car ownership has been on the decline in recent years (Grimsrud & El-Geneidy, 2014). Between 1998 and 2008, a substantial decrease was found in the reliance on automobiles for transportation among multiple age groups, with this trend being most pronounced in people between the ages of 20 and 29 (Grimsrud & El-Geneidy, 2014). However, in a report published this year, while researchers did find that young adults were less likely to own automobiles than the generations preceding them, they recommended exercising caution as low car ownership rates could be a symptom of uncertain economic times (Klein & Smart, 2017). Nevertheless, these low rates of automobile ownership present favorable conditions for planners to prioritize and promote active transportation. In turn, municipalities can work with communities to improve non-vehicular infrastructure to ensure residents of every socioeconomic background can safely be accommodated.

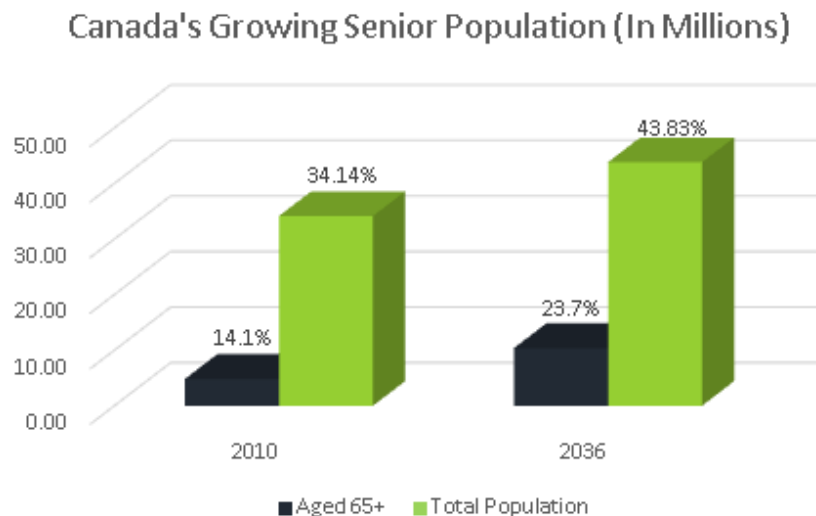


Figure 3: Canada's growing senior population

Census data from the neighbourhood of Strathcona Centre does support the notion that younger people are driving less. According to the 2011 Federal Census, Strathcona Centre's population of young adults was nearly twice as large as the city average, with 33% of residents aged between 20 and 29 compared with the city average of 18%. This is largely due to Strathcona's close proximity to the University of Alberta. Furthermore, according to reports compiled by the Alberta Transportation Office of Traffic Safety (2016), younger drivers are making up an increasingly smaller proportion of Alberta's driver population. Vehicular operators between the ages of 21 and 24 in Alberta shrunk by 16.3% as proportion of the driving population between 2005 and 2016, with the trend again being more magnified in younger groups, with those aged 18-20 seeing a reduction of 24.7% (Alberta Transportation Office of Traffic Safety, 2016).

In line with Alberta traffic data and given that Strathcona Centre has a comparatively large population of young adults, Strathcona boasts high rates of active transport and public transit usage compared with other communities in Edmonton. For example, 20.7% of Strathcona’s residents report walking or cycling to work, while other neighbourhoods in the city average only 4.8% (City of Edmonton, 2011). Additionally, 18.3% use public transit, compared with the 13.4% city-wide average (City of Edmonton, 2011). Given that the residents of this neighbourhood already demonstrate a greater diversity of mode-use choice when commuting to work or school, this data creates a compelling argument for further improving active transport infrastructure in Strathcona Centre. In addition to enhancing the experience of current users, implementation of better infrastructure may act to compel those who still heavily rely upon their automobile in Strathcona to adopt different, more active modes when making daily trips.

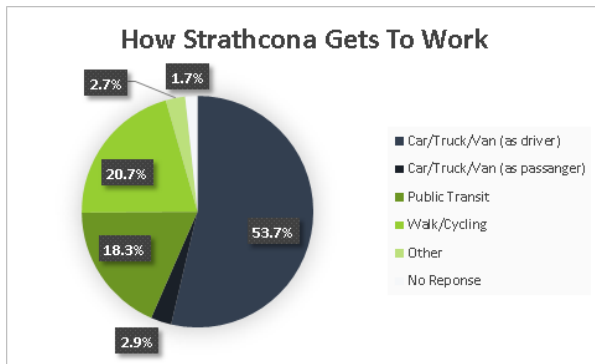


Figure 4: How Strathconians get to work

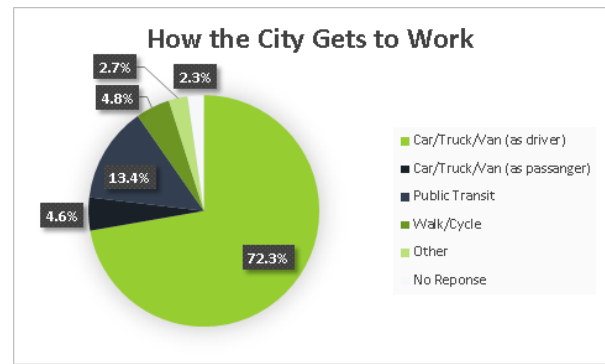


Figure 5: How Edmontonians get to work

Additionally, it is not just Strathcona Centre’s young adult population who would benefit from more pedestrian friendly streets. According to Municipal Census data, residents in Strathcona aged 65 and older increased by 26% between 2008 and 2016 - a trend that is likely to continue as the baby boomer generation continues to age (City of Edmonton, 2016). Indeed, a projection published in 2010 by Statistics Canada predicted a nation-wide increase in the population of seniors aged 65 and older from 16.3% of the total population to 23.7% by 2036 (Statistics Canada, 2010).

However, researchers have found that one of the major factors of physical inactivity is age, with one of the major barriers being fear of injury from falling (Bauman, Reis, Sallis, Wells, Loos, & Martin, 2012). The Public Health Agency of Canada (2014) cite falls as being the leading cause of injury for seniors, with 20-30% of seniors experiencing a fall each year. While younger people may be able to walk without fear of falling, particularly during the winter, falls can be far more dangerous for the elderly. Serious falls may cause injury, disability, or even death, with the number of fatal falls in elderly populations having increased by a staggering 65% from 2003 to 2008 (Public Health Agency of Canada, 2014). Furthermore, even minor falls put the elderly at risk of decreased mobility, lost confidence, and a sense of fear or uncertainty (Gallagher & Scott, 1996). Researchers from the Canadian Journal of Public Health found that a majority of reported falls occur on sidewalks or crosswalks, due to improper maintenance, decaying infrastructure, or a sense of being rushed by vehicular traffic (Gallagher & Scott, 1996). As such, it is imperative that appropriate measures are taken to support aging populations when designing communities that encourage active transportation. Improving Strathcona Centre's walkability will not only serve to create a greater sense of connectivity and ease of use for alternative modes of transportation, particularly for younger generations less likely to use automobiles, but will also ensure the safety of an increasingly vulnerable elderly population.



Figure 6: King Edward Academy in Strathcona

2.3 WHAT IS ACTIVE TRANSPORTATION?

Active transportation refers to all modes of human-powered forms of travel including, but not limited to, walking, cycling, skateboarding, and rollerblading (Grant, Burgess, Barton & Thompson, 2015). It may be used in conjunction with other public transportation options, such as riding the bus. Tangible health benefits are associated with increased daily physical activity through active transport. These benefits include, but are not limited to, improved cardiovascular health, reduction in the risk of type two diabetes and certain cancers, and the maintenance of good mental health and well-being (Grant, et al., 2015).

2.3.1 Current Trends

Post World War II, the development of Canadian cities have largely been divorced from public health initiatives intrinsic to the planning discipline in its inception (Harris, 2004). As evidenced in the City of Edmonton, transportation activity has been largely modeled to support motorized modes of transit through the specific development of auto-centric community design and infrastructure. Habitual car use has led to the uncontrolled expansion of urban areas and the geographic separation of essential places (e.g. home and work), allowing for motorized transport, and its attendant impacts, to triumph over otherwise active modes (e.g. walking and cycling). In addition to compromising the environmental, social, and economic health of Canadian cities, automobile dependence has been implicated in the rise of chronic, non-communicable diseases and obesity (Raad, 1998).

However, there has been a movement in recent years related to the need for improved public health in the face of car-centric planning and policy that seeks to re-integrate walkable elements back into communities. The benefits of designing walkable communities that encourage active transport not only improve individual health, but have also been shown to have positive impacts for both the community and the economy (Litman, 2003).

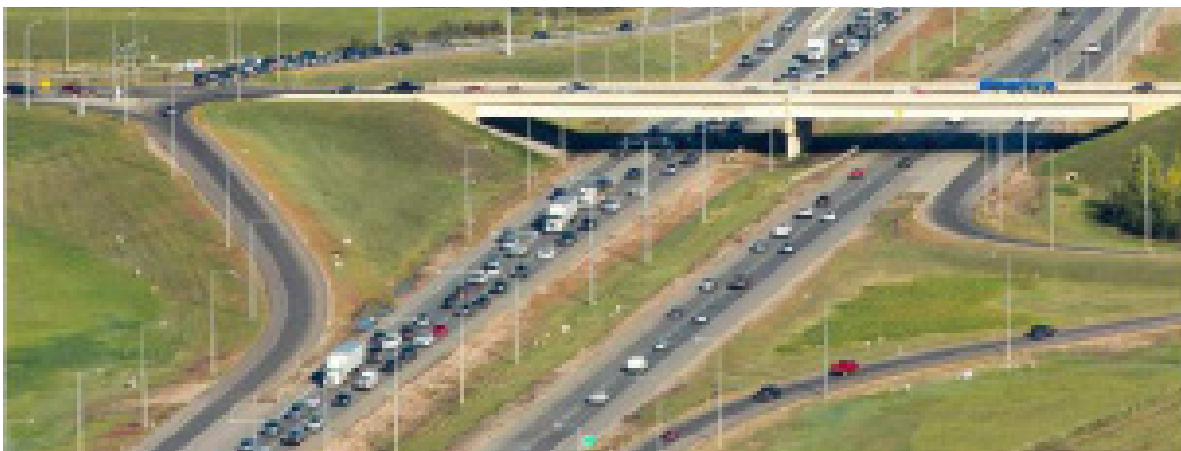


Figure 7: Large scale infrastructure project supporting car oriented transportation

2.3.2 Elements of Walkable Communities

Walkability and bikeability refer to those features of a neighbourhood that encourage and empower residents to walk and/or cycle as a means of transport from one location to another. Canada Walks (2015) and the Prevention Institute (2013) outline seven key features that make communities walkable and bikeable:

Experience: walking routes are pleasant and inviting, bicycle infrastructure is well-developed, sidewalks are well-maintained, there is accessible greenspace, and development is mixed-use.

Safety: there is a separation between walking and/or bicycle routes from vehicular traffic, vehicle speeds are controlled through traffic calming measures, there is adequate lighting, there are crime reduction strategies including “eyes on the street,” and an on-foot police presence.

Accessibility: Walking routes and connections are designed for all users including those with challenges to their mobility.

Connections: There is a complete network of sidewalks and trails that enable users to get where they are going without the use of a motor vehicle, street and pathway connectivity ensure housing is proximal to schools, transportation hubs, employment, and community resources.

Walkable destinations: Desirable destinations are within walking or cycling distance

Comfort: Those using active modes of transport have shade, shelter, and places to sit

Encouragement: Municipalities work with community organizations to create a “culture of walking”



Figure 8: An elevated cross-walk supporting pedestrian oriented transportation

2.4 BENEFITS OF ACTIVE TRANSPORTATION

2.4.1 Health Benefits

Health experts believe that more balanced transportation systems can contribute to improved public health by accommodating and encouraging active transport (Bassett, Pucher, Buehler, Thompson, & Crouter, 2008). Evidence from Health Canada suggests that at least 30 minutes of moderate exercise a day, at least five days a week, in intervals of ten minutes or more, is necessary in order to achieve health benefits associated with exercise (Gilmour, 2007). Adults that are physically active have lower rates of obesity and lower rates of chronic diseases (Gilmour, 2007). Participation in active transportation readily combines the need to make essential daily journeys with the need to engage in exercise for the maintenance of good health. Research has shown that people with the best access to a variety of built and natural facilities are 43% more likely to be active 30 minutes on most days than those with poor access (Reynolds, Winters, Ries, & Gouge, 2010).

Diseases that are associated with physical inactivity are (Killingsworth and Lamming, 2001):

• Health Disease	• Hypertension
• Stroke	• Diabetes
• Obesity	• Osteoporosis
• Depression and dementia	• Some types of cancer

If daily habits of walking within a community are continued over the long term, the likelihood of accruing health benefits are greatly improved (Bassett et al., 2008). People are more likely walk to if street connectivity and non-vehicular infrastructure is robust as it offers a more pleasurable experience in addition to shorter travel times (Reynolds et al., 2010). According to Gilmour (2007), the benefits of active transportation are seen across all age groups:

Children: Number of safer routes of school increases the number of children walking and cycling to school. The learned active transportation skills and habits will be retained throughout their lifetime.

Ageing Adults: Active transportation is critical for independent living and promotes physical health. Walkable communities allow aging adults to be socially connected and mentally healthy.

People without licence or vehicle (low-income, people with disabilities, and ageing adults): With availability of active transportation networks people who face accessibility challenges increase their mobility and access within their community.

2.4.2 Economic Benefits

Transportation Canada defines the key economic benefits of supporting active transportation within Canadian cities as:

Reducing Transportation Costs: The development and maintenance costs of active transportation infrastructure is lower than other transportation infrastructure (per capita and overall).

User Savings: Active transportation is a cost-effective transportation mode for individuals living in urban areas. The high cost of car ownership makes transportation the second biggest area of expenditure in a typical household after housing costs.

Local Business Benefits: Active transportation infrastructure supports local businesses because cyclists and pedestrians are more likely to spend their money at local destinations, thereby increasing economic viability within their community and increasing revenue for local business.

Indirect Benefits: Active transportation has many economic benefits that are not obvious because the costs and benefits are borne and accrued by society rather than the individual user. External costs include time lost to traffic congestion, health expenses from air pollution-caused illnesses, road construction, and collisions.

2.4.3 Community Benefits

Community livability is defined as being the perceived environmental and social quality of a neighbourhood by residents and visitors alike (Litman, 2003). Active transportation has the potential to improve a community's livability by improving community cohesion through the development of quality relationships among community members, as indicated by the frequency of positive interactions, which serves to further develop and deepen the sense of community connection (Forkencrock, Benshoff, & Weisbrod, 2001).

Given that streets comprise a large portion of the public space in a community, they tend to be the most common place that people interact with one another and communities with walkable, attractive, and safe streets have been shown to increase community livability in a given neighbourhood (Litman, 2003). Alternatively, people who reside on streets with that allow high speeds and have high traffic volumes, are less likely to know their neighbours and show less concern for their local environment than residents who live on streets with less vehicular traffic (Appleyard, 1980).

2.5 BARRIERS TO ACTIVE TRANSPORTATION

According to the Transportation Association of Canada (2012), there are barriers to motivating people to choose active transportation over their automobiles. The following are challenges associated with the promotion of active transportation:

Habit: People tend to follow typical routines on a day-to-day basis. If car travel has been normalized, people are more likely to drive than to walk or cycle.

Quality of networks and infrastructure: Environments that are not compatible with active modes of transport tend to be avoided and if they are, users create “desire paths” which may be viewed as unsightly and/or dangerous to others.

Safety and security: walking and cycling may be perceived as unsafe due to unsafe pedestrian road crossings, missing and unmaintained sidewalks, and unmaintained roads and bike lanes.

Cold climate and difficult terrain: The physical geography of Edmonton can be a barrier to active transportation due to wind, steep hills, and winter weather. Walking and cycling can be uncomfortable and inconvenient during winter months.

Negative attitudes and imagery: Cycling may be portrayed as being extreme (e.g. long distance cycle events for charity) and cyclists are characterized as being a nuisance to road users which may act to demonize the activity in the eyes of others and diminish the likelihood of undertaking this activity.



Figure 9: Winter conditions can impede active forms of transportation

However, individual motivational factors are further compounded by elements including lack of support and coordination or improper execution at the policy level (Hess, Smith, & Bidordina, 2014). If we want to get people walking, municipalities must work to create an impetus for individuals to choose active transportation through actionable guidelines that are acted upon by decision makers. In a report generated for the Clean Air Partnership in Ontario (2014), researchers found that the major barriers affecting implementation of walk-friendly design elements in communities by municipalities were as follows:

Policy framework: The language in policy supporting active transport is passive and does not promote specific directives using the concept of complete streets. Policy often opts for general suggestions and guidelines instead of direct language which allows for senior decision makers to leave active transportation out of projects even if the policy framework generally supports that end.

Funding and capital planning: Active transportation design elements may be removed from a project's scope if budget considerations do not allow for it. Performance measures - many of the performance measures (e.g. software such as Synchro/SimTraffic) used by transportation planners and engineers continue to prioritize motor vehicles in roadway design decisions despite attendant policy attempting to shift mode use to more active forms.

Standards and design guidelines: Conceptualizations of streets and roadways continue to favor motor vehicles and do not fully support the safety of pedestrians. Additionally, there continues to be a lack of guidelines that fully incorporate active transportation components into street design from a reputable Canadian organization. However, the Transportation Association of Canada is aware of the shortcomings related to context specific standards and design guidelines for active transport and is addressing this deficiency by currently updating its Geometric Design Guide for Canadian Roads.

3 / Neighborhood Survey

3.1 NEIGHBOURHOOD SURVEY METHODOLOGY SELECTION

There are numerous tools for assessing the way the built environment impacts active transit users and these tools can largely be grouped into three categories; self reported perceptions by local residents, objective measures based on audit tools used by trained raters, and data derived from GIS. Certain assessments focus on the subjective experience of a user based on neighbourhood features that may impact a given person's perception of safety, difficulty of movement, and/or aesthetic quality. Other tools are slightly more objective in their approach and act to create an inventory of neighbourhood amenities. These tools are designed to be administered by practitioners and academics, while others are more suited to a residents perception of an area. Some tools focus solely on walkability, forgetting other forms of active transportation, and only consider amenities such as sidewalks and crosswalks. Due to the scope of this project, our work group decided to conduct an assessment which was more objective in focus and sought to create an inventory of neighbourhood features and their impact on all forms of active transportation. Working as practitioners, we each believed we had enough expertise to administer such an assessment that focused on creating an inventory. While GIS and other mapping technologies facilitated our work, we also undertook a site analysis that required separate site visits to gather first hand knowledge of Strathcona Centre.

To inform our selection of a survey methodology, a brief literature review of street features associated with active transportation was conducted to find the following criterion:

- Success should not simply be measured by the number or duration of walking trips, but also by the quality of those trips in terms of user experience (Giles-Corti & Donovan, 2003).
- Walkability can be defined as comprising three elements: origin/destination, area, and route (Atkins, Dill, Luhr & Neal, 2012)
- Connectivity, linkages to other modes, fine-grained and varied land use patterns, safety, quality of path, and path context (e.g. visual interest, landscaping, spatial definition, etc) were identified as being the attributes of walkability (Southworth, 2005).
- Microscale built environment features such as path texture, coherence, complexity, enclosure, human scale, imageability, linkage legibility, tidiness, and transparency are important features to consider when determining the inherent walkability of a given area (Ewing & Handy, 2009).

Based on the above, our group determined the Systematic Pedestrian and Cycling Environmental Scan (SPACES) instrument, developed in Australia, was best suited for auditing Strathcona Centre and its conduciveness to active transport and walkability (University of Western Australia, 2010). SPACES is a general street assessment tool and includes the following elements:

• Number of lanes on the road	• Kerb type
• Traffic control devices	• Crossing facilities
• Presence of streetlights	• Presence of destinations
• Types of buildings and features	• Car and bike parking facilities
• Opportunities for natural surveillance	• Yard maintenance
• Cleanliness and views	• Perceived attractiveness
• Barriers to walking or cycling	

SPACES is an observational audit that uses “street segments” for the basis of conducting the observation and can be used in concert with GIS technologies (See Appendix X). It provides a general assessment of paths that have potential to be used for walking and/or cycling (e.g. type, location, material, slope, condition). The survey was developed for a metropolitan communities geographic scale to measure which physical environmental factors have the greatest impact on physical activity (i.e. walking and cycling). It also considers aspects such as disability and accessibility. The study was developed by several authors who conducted an extensive literature review, in-depth interviews, and three phase Delphi process with a panel of experts who rated aspects of the environment in terms of importance. The SPACES audit is composed of 71 items, some of which we altered to apply to winter elements such as snow removal and snow buildup. Our team utilized GIS to create a mapping tool which was used to delineate street segments.

3.2 NEIGHBOURHOOD SURVEY AND ANALYSIS

Two neighbourhood audits were conducted in Strathcona Centre on January 16th, 2017 and February 3rd, 2017. The first audit was a simple walk-through intended to familiarize ourselves with the neighbourhood, while the second allowed us to conduct a more extensive audit using the SPACES survey. The following is a review of our key findings using the survey, with the neighbourhood delineated into sections A-F, G-I, and J-L, roughly according to the barriers presented by Arterial Roadways as outlined below:

3.2.1 Section A-F

Sections A through F are defined by Saskatchewan Drive to the north, 82nd Avenue to the South, 107th Street to the East, and 103 Street to the West. The majority of this neighbourhood is residential in nature with a good mixture of low and medium density housing throughout, including several apartment towers along Saskatchewan Drive. The portion also contains some of the most active areas of Whyte Avenue, with the majority of its restaurant, night-life and shopping destinations being located along this stretch as well as along the streets between 82nd and 83rd Avenue.

This portion also contains the cultural heart of the neighbourhood with its numerous theatres that play host such events including the Edmonton International Fringe Festival, Taste of Edmonton, and the Edmonton International Street Performers Festival. Other popular destinations include the Strathcona Farmer’s Market, Old Scona High School and the Old Strathcona Library.

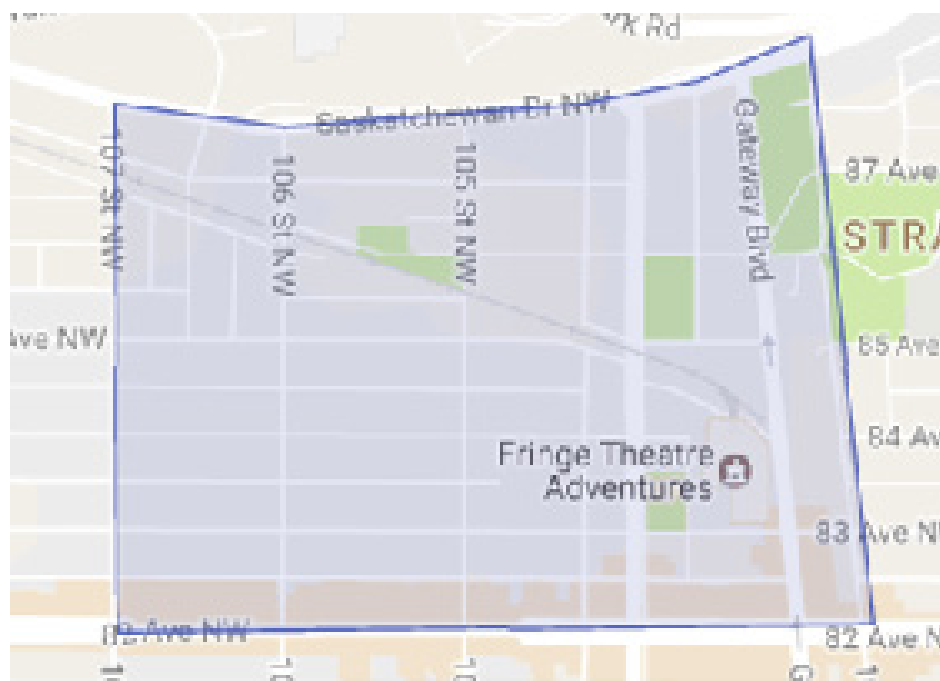


Figure 10: Survey Sections A-F

This portion also contains the cultural heart of the neighbourhood with its numerous theatres that play host such events including the Edmonton International Fringe Festival, Taste of Edmonton, and the Edmonton International Street Performers Festival. Other popular destinations include the Strathcona Farmer's Market, Old Scona High School and the Old Strathcona Library.

In general, this sections A through F are fairly attractive to walk, with most sidewalks being buffered from traffic by tree lined boulevards. However, as one approaches commercial 82nd avenue, barriers are removed and paths run without buffers alongside the roads. While most streets had a sidewalk on on both sides of the road, there were a few including significant portions of 87th avenue that only possessed one. Indeed, 87th avenue is one of the least attractive portions to walk as the sidewalk is often non-continuous, and the buildings on the north side consist primarily of the parking garages for the houses and apartment that front onto Saskatchewan Drive.



Figure 11: Street lighting on 84th Avenue and 107th Street

The area is also fairly attractive to cyclists, as there are no slopes or hills present and the signed cycle paths along 84th Ave, 85th ave, and 107th street as well as the marked path along 106th Street provide cyclists with some degree of protected space. Aside from the dedicated parking stall on 105th street between 82nd and 83rd Avenue, there was a surprising lack of bike parking facilities throughout the neighbourhood.

Marked crosswalks and traffic calming measures are mostly absent within the more residential areas of this portion and were found primarily at the intersections with arterials such as 104th and 103rd street with a signalled intersection and median assisting crossing at the intersection of 104th and 83rd avenue. While the sidewalks were in moderate condition, pedestrian lighting was poor and almost exclusively benefitted automobiles with their focus on the streets, never the sidewalks. However, there are some exceptions as parts of 83rd avenue near Wilber MacIntyre park had some pedestrian scale lighting next to the sidewalks as well as ornamental paving, but these features were largely absent from the rest of this section. (Image 84th and 107th).

3.2.2 Sections G – I

Portions G, H and I are defined as being contained within Saskatchewan Drive/91st Avenue to the North, 82nd Avenue to the South, 103rd Street to the East, and 99th Street to the West. This area is mostly residential with commercial development situated along 82nd Avenue and 99th Street. Aside from several towers lining Saskatchewan drive, housing is a mixture of single-detached homes and low-rise apartment buildings.

In terms of destinations, Academy at King Edward and King Edward School are two of the largest, attracting a significant amount of traffic as students arrive and leave by car, bus, and other means. Surprisingly, there are no pedestrian enhancements nor traffic calming near either school buildings, the lack of which is significant considering the potential for conflict between often unpredictable younger students and automobile traffic. Additional destinations include the Strathcona Community League, the Church of God, and the commercial areas lining the arterials.



Figure 12: Sections G-I



Figure 13: Designated bike lane on 83rd Avenue and 97th Street



Figure 14: Traffic calming infrastructure on 83rd Avenue and 97th Street

While the paths are generally friendly to pedestrians, there are very few traffic calming measures or crosswalk enhancements to ease crossing intersections. This is particularly problematic along 99th street and Saskatchewan Drive, where there is a significant amount of traffic. In terms of cycling infrastructure there is a signed bike path along 85th Avenue, that connects to a shared pathway along 86th Avenue and crosses End-of-Steel Park. There is a bike boulevard along 83rd planned for future development. The neighbourhood is fairly attractive for the same reasons it is attractive to pedestrians, however additional facilities, especially bike racks, would make it more accessible.

There is a small stretch of homes along 91st and 90th Avenue that are primarily accessible by Saskatchewan Drive and a staircase runs continuously with 90th avenue. While this area benefits from multiple connections to the River Valley trail system, the sidewalks themselves do not share the neighbourhood’s more walkable character with its inconsistent, poorly lit, and isolated pathing.

3.2.3 Sections J-L

This area’s boundaries are defined by Scona Road/99a Street to the north, Mill Creek to the East, and 99th Street to the west, and 82nd Avenue to the south. In general areas can be described as primarily residential, mostly consisting of single-detached homes with apartment buildings situated along the arterial roadways of 99th Street and 82 Avenue. There is a small amount of commercial activity near 95th and 96th street, including the popular Mill Creek Café, and a motorcycle dealership. Other destinations in the area include the Moravian Church on 83th Avenue and 96th Street, the office buildings on 99th and 89th Avenue, as well as the various access points to the Mill Creek and River Valley Trail System.

For the most part, the streets in this area are fairly uniform in design, with two lane roads allowing for traffic in both directions. Curb side parking is permitted on one side of the street and occasionally both as on 90th Avenue. Additional parking is restricted to alleyways with very few homes having a front driveway. These areas are fairly attractive for walking, given the large tree lined boulevards on either side of the street that provide a good buffer between pedestrians and traffic. These trees also serve to provide shade in the summer and some shelter from wind in the winter.



Figure 15: Sections J-L

One aspect that is severely lacking is pedestrian oriented lighting. For the most part, street lighting is focused on roadways with sidewalk coverage incidental at best. More pedestrian scale lighting could improve the attractiveness of these areas and improve the sense of safety at night. The sidewalks were for the most part in okay condition, however inconsistent snow clearance was a frequent problem and could make walking challenging in some instances.

The closer one got to Mill Creek, the more inconsistent non-vehicular pathing tended to be. While the majority of the neighbourhood is fairly flat, these areas possess some irregular slopes, that, when combined with sometimes icy walkways, made walking along these trails difficult. Moreover, there are sidewalks that are often only present on one side of the street, or missing entirely, as was the case along the significant stretches of 97th Street. Furthermore, roads and pathways often end abruptly at the edge of Mill Creek, breaking an otherwise continuous path.



Figure 16: Steep street lacking sidewalks on 92th street and 98



Figure 17: Street missing sidewalk on 96th Street 84 Avenue

There are also few pedestrian enhancements or traffic calming measures such as curb bulbouts or medians throughout the entire section. There are also opportunities for additional enhanced crossings across arterials; on the ten block stretch between 82nd and 92nd Avenue there are a total of six assisted crossings, five being signalled intersections and one a marked crosswalk across 99th Street. With regards to cycling infrastructure, there is a bike boulevard completed between 99th and 96th Street on 83rd Avenue with a roundabout providing some means of traffic calming, however this roundabout could create potential issues for visually impaired users. There is also a signed shared path along 85th Avenue that merges with the shared use path on 86th Avenue. Aside from these, cycle infrastructure is lacking, particularly with regards to cycle racks or other places to lock up.

Some of the more unique areas that deserve particular attention are the pockets of homes north of 92nd Avenue adjacent to Scona Road. For example, the homes on either side of 96th Avenue and 99a Street are fairly isolated from the rest of Strathcona and generally difficult to access. Aside from access to the river valley trail system, there is no cycling infrastructure, and sidewalks are inconsistent and often only present on one side of the street.



Figure 18: Partially unshoveled sidewalk on 96th Street and 83rd Avenue

4 / Public Consultation

Public engagement and community consultation has become a key component of the planning process. By gathering meaningful input from community residents, it helps to ensure that development outcomes reflect the visions of a community's residents and contributes to enhanced urban sustainability. The main objective for our project is to create three visual concept plans that demonstrate increasing levels of walkability and active transport opportunities within Strathcona Centre. Our goal is to ensure that these conceptualizations are informed not only by our planning expertise, but also by resident and stakeholder knowledge of the area. Our community engagement will be rolled out in three phases, with items one and two already completed:

Focus group - February 6th, 2017
Board meeting - February 13th, 2017
Open House - March 6th, 2017

Below is a summary of the focus group and board meeting and our goals for the upcoming open house.

4.1 FOCUS GROUP

The focus group took place on February 6th 2017 at 7:00pm and included six diverse members from the community, each bringing their own unique perspective to the discussion. Participants were presented with individual maps of Strathcona Centre and asked to complete two exercises.

For the first exercise, they were asked directed questions and encouraged to write and draw their answers on their maps in order to better understand what aspects of their community they viewed as important and are in need of preservation, what aspects they believed impaired their ability to participate in active transportation, and what aspects they were keen to change.

In the second exercise, we presented participants with an "Active Transportation Design Kit" that visually displayed various walk and bike friendly features and infrastructure enhancements and an attendant glossary explaining what the tools were and the benefits of implementing them. We asked the participants to review the tools and place them on their maps in areas they believed required improvement.

When asked what features they liked best about Strathcona and what they wished to preserve, the general consensus was that they enjoyed the sense of community that they feel is unique to the neighbourhood.

There was also a deep appreciation of the neighbourhood's mature quality, with its lush greenery and mature trees, and the proximity to the Millcreek Ravine and trail systems. Residents were also keen to acknowledge how convenient living in the neighbourhood is, with grocery stores, local shops, and restaurants all within walking distance of their homes. While participants stated they generally enjoyed walking in their neighbourhood, they believe there is room for improvement - especially for senior populations who are a greater risk of harm should they fall on imperfect walking paths. When asked what they would change or add to their neighbourhood, responses generally fell within four main categories: Traffic Calming/Management, Pedestrian Infrastructure, Cycling Infrastructure, and Public Spaces.

4.1.1 Traffic Calming/Management

With numerous arterial roadways passing through or bordering the neighbourhood, there was significant concern regarding drivers shortcutting through Strathcona, often at high speeds and without regard for traffic signs. Several participants noted that 100th Street and 98th Street see significant shortcutting in order to avoid traffic on 99th Street, and they suggested that the installation of street calming measures could help to mitigate this issue. 84th avenue was also noted as being particularly problematic between 105th and 106th Street, a street designated as a one-way, which results in many drivers ignoring, or being unaware of, signage indicating that they can not travel west down this avenue. There was also concern that the redevelopment of 83rd avenue into a bike boulevard may see traffic redirected to 84th avenue.



Figure 19: Active discussion occurring amongst participants during the focus group on February 6th, 2017

4.1.2 Pedestrian Infrastructure

There were particular concerns with the quality of sidewalks in the area, both in terms of degrading materials and snow clearance in the winter. This is especially true for residents of the Scona Seniors Centre who have clear difficulties walking with walkers or wheelchairs in snow and/or uneven concrete surfaces and for those residents pushing small children in strollers.

Participants were also in general agreement that lighting in the area is inadequate for pedestrians as it exclusively illuminates roadways and not sidewalks. They also expressed that they often felt a sense of unease walking at night, especially in the summer months, because what little light provided for by the streetlights is blocked out by mature tree greenery.



Figure 20: Partial and inadequate snow clearance on a residential street in Strathcona

The need for improved crosswalks was also echoed by all participants, especially those intended to provide pedestrians secure crossing across arterial roadways. Where Tommy Banks Way, 100th street, 101st street, and 91st street intersect with Saskatchewan Drive were of particular concern to all participants in the focus group, as they believed them to be very unsafe for foot traffic. However, the crosswalk at 104th street and 86th avenue was described as being a good example of a pedestrian crossing within the neighbourhood.

4.1.3 Cycling Infrastructure

Participants remarked on the need for another east-west connector for cyclists, in addition to the planned 83rd avenue bike boulevard, with 87th avenue being designated as a potential location for this. Desire for a multi-use trail or cycle track on the vacant land beside the street car tracks was also expressed.

4.1.4 Public Space

While both Tubby Park and Dr. Wilbert MacIntyre park were described as being excellent meeting places within the neighbourhood for all age groups, participants noted a lack of adequate seating on the way to the parks and within the parks themselves. Certain facilities such as bicycle parking, extra seating, and waste receptacles were indicated as being potential additions. Participants also discussed the possibility of creating additional public spaces known as ‘woonerfs’ through the utilization of strict traffic calming measures at dead-end streets or cul-de-sacs.

How residents define Strathcona ...

“It’s still a place where people say hello on the street.”

“Design for lower speeds rather than lowering speed limits”

Every intersection should have neck downs, enhanced crosswalks, and curb extensions/bulbouts

“Curb extensions would be better used by people than giving room for the car”

Figure 21: Fringe Festival performance

4.2 BOARD MEETING

On February 13th, 2017 at 7:00pm, our work group met with the Strathcona Centre Community League's board members to introduce ourselves. We provided them with a brief overview of our work thus far, including our literature review, neighbourhood audit data, and key findings from our focus group. We explained the upcoming open house, and how we will create our concept plans for a more walkable Strathcona using the input gathered from our community consultation events, and how they might use our project deliverables to further their goal of petitioning the City of Edmonton to perform a more extensive neighbourhood. Additionally, we fielded questions from board members about the scope, timeline, and goals of our project. No feedback was generated from the board meeting, but it served as a platform with which to familiarize the board members with our project and ourselves.

4.3 OPEN HOUSE

The open house is scheduled for March 6, 2017 at 5:00 pm at the Strathcona Centre Community League Hall. Residents and stakeholders will be invited to share their local knowledge and make suggestions to improve neighbourhood walkability and opportunities for active transportation. We intend to facilitate discussion through the following activities:

Station 1: Broad question activity - three posters with the following questions will be displayed and participants will be asked to write their answers on sticky notes and affix them directly on the posters:

1. *What does active transportation mean to you?*
2. *What features of your neighbourhood do you like best? What features do you want to preserve?*
3. *What features do you like least? What features do you want to change?*

Station 2: Mapping activity - attendees will be invited to draw on a large map of Strathcona Centre and will be encouraged to share their concerns and visions in pictorial format.

Station 3: Concept plan activity - based on input gathered from the focus group, draft concept plans will be presented and attendees will be welcome to provide their feedback on our draft vision for improving walkability by again being asked to affix sticky notes outlining their concerns and/or recommendations.

The information gathered from the open house event will be analyzed and then integrated into our final concept plans for the area.

5 / Case Studies

5.1 How can we retrofit existing communities to become more walk and bike friendly?

By creating and redesigning urban environments through a variety of walk and bike friendly design principles and tools, we can create and retrofit communities to prioritise walking, cycling, and public transport - thus building physical activity back into our daily lives. The following is a review of three communities across Canada that have implemented a variety of policies and program initiatives to encourage active transportation within their municipalities:

5.2 Strathmore, Alberta - Community advocacy planning at work

The Town of Strathmore is located just outside of Calgary, with a population of approximately 12,000 (Statistics Canada, 2011). Similar to other municipalities located in Alberta, it is prone to harsh winter conditions which have acted to impair opportunities for active transport activities during the cold winter months and the majority of its residents commute by vehicle to work or school. In May of 2007, a concerned group of community members came together with the shared goal of promoting active living in Strathmore by advocating for infrastructure improvements that support active transportation (Alberta Health Services, 2011).



Figure 22: Shared use path at the corner of Rt. 355 and Strathmore Ave in Town of Strathmore

Following the momentum generated by community members, in 2011 Alberta Health Services hosted a “Walkability Roadshow” that asked participants to brainstorm key areas of focus. Through a number of walking tours in the town, it was determined that Strathmore particularly needed improved pedestrian access to public buildings through footpaths and trails to facilities (Alberta Health Services, 2011).

Additionally, the Walkability Roadshow helped residences voice their concern over lack of spaces for people, unsafe school travel, and lack of appropriate signage (Alberta Health Services, 2011). As a result of the Walkability Roadshow and the community's active participation in the consultation process, in 2014 the Town of Strathmore updated their Municipal Development Plan (MDP) to include aspects of active transportation. Included in this update were key policy decisions that prioritized high quality, safe, and comfortable walking facilities within areas with high potential, such as residential neighbourhoods, areas near schools and local services, and areas with a high density of senior citizens (Town of Strathmore, 2014). Since this update, walking infrastructure has been considered heavily during the development process and upgrades have included improving the connectivity of walking trails, an increase in street furniture such as benches, a reduction in speed limits in certain zones, and the shortening of walking distances between marked crossings.



Figure 23: *Mid-Block Crosswalk on Lakeside Blvd in front of Kinsmen Park Strathmore Crossing*

The updated MDP now includes walkability as a key consideration and dictates that area structure plans must promote healthy, active lifestyles (Town of Strathmore, 2014). All parks, open spaces, and pathways must achieve one common goal; to create a community that supports and champions active transportation (Town of Strathmore, 2014). As evidenced by the MDP and subsequent development, such as the 'beautification' of the downtown core that seeks to improve the pedestrian experience on the central streets of the town, Strathmore recognizes the value of active and engaged citizens and believes citizens should be included in planning for sustainability and quality of life (Town of Strathmore, 2015).

5.2.1 Applicability to Strathcona, Edmonton

Climate - Both Strathmore and Strathcona share the same climate and thus, the same physical barriers impeding residents from participation in active transport; icy sidewalks, windchill, snowstorms, and freezing temperatures all create unfavourable walking or cycling conditions in the winter months, especially in areas where pedestrian infrastructure is lacking. Strathmore has made strides in improving its paths and networks and has seen a surge in active transport amongst its residents, even when the temperature drops.

Community involvement - As was the case in Strathmore, community members in Strathcona are also deeply invested in transforming their community to become more walkable. Strathmore illustrates the success of community driven initiatives spearheaded by concerned citizens in an effort to improve active transportation infrastructure and networks.

5.3 SAANICH, BRITISH COLUMBIA - BUILD IT AND THEY WILL COME

The District of Saanich is a community with a population of 110,000 people, adjacent to the provincial capital of Victoria on Vancouver Island and is considered the gateway community to Victoria (Statistics Canada, 2011). Saanich has been successful with a long term campaign that supports investment and incorporation of active transportation principles into their neighborhood design starting in 1991 (Transport Canada, 2010). The Saanich General Plan (1994) provided a policy framework for the implementation of the Active Transportation Infrastructure program which aimed to restrain road expansions, provide mixed-use trails, boulevard sidewalks, greenways, and bike lanes on major roads. Planners have worked with residents to identify and develop a systematic framework to address the concerns of pedestrians, cyclists and motorists and incorporate safety into all city initiatives (Transport Canada, 2010).



Figure 24: Cycling path in Sinaach, B.C



Figure 25: Cycling path and cross-walk in Sinaach, B.C

Working with the community by establishing advisory committees and resident forums, Saanich created the Bicycle Master Plan using input gathered by the community to identify bike lanes, improved crossings, on and off-street improvements and bike lanes. Saanich was also able to negotiate the conversion of a decommissioned rail ROW into a mixed use trail which is now central to the connectivity of an inter-regional trail network that connects several hubs in Victoria (Transport Canada, 2010).

The Bicycle Master Plan integrated connector routes on streets with a lower traffic volume to neighborhood destinations and trails networks (Transport Canada, 2010). The community has sought to design these trails for both experienced and inexperienced users. Central features include appropriate signage, pavement striping, and warnings for automobiles. Active Transportation Initiatives have been successful in increasing the use of alternative active transportation modes; a Travel Behaviour Survey indicated that work commuter bicycle travel had increased from 4 per cent in 1999 to 11 per cent in 2004 (Transport Canada, 2010).

5.3.1 Applicability to Strathcona, Edmonton

Underutilized, high potential areas - Saanich was able to recycle a retired rail line to service modern transportation needs and this initiative has been key to the success of improving the connectivity of the region. Like Saanich, Strathcona Centre has a largely inactive rail line that runs through the community and has the potential to connect a variety of users with the Strathcona area and the major transit point, the High Level Bridge, to and from Downtown Edmonton.

“All users” approach - The city of Saanich has employed an inclusive vision when designing its active transportation routes to be functional for a variety of users, not just those who are fit, experienced cyclists. The consideration of diverse demographic and background characteristics has aided in increasing commuter bicycle travel behavior in Saanich. Strathcona Centre is also home to a diverse population and the community is pushing to see the safe accommodation of all users in non-vehicular transport.

5.4 DAVENPORT ROAD IN WATERLOO, ONTARIO - SMALL SCALE REDEVELOPMENT

With a population of 105,000, Waterloo is the smallest of three cities comprising the “Tri-cities” in the Regional Municipality of Waterloo in Southern Ontario (Statistics Canada, 2011). The City of Waterloo has made significant progress towards adopting Complete Streets policies in recent years, the success of which is largely owed to key council and community members who have championed the movement within the city (Complete Streets for Canada, 2014). In 2012, The City of Waterloo’s Transportation Master Plan was updated to include the adoption of Complete Streets into the planning process, which has been applied to new development as well as to older streets receiving active transportation makeovers. When older streets have been retrofitted, the changes have included addition of pedestrian islands, striping for cyclists, boulevard landscaping, traffic signal adjustments, installation of pedestrian lighting, and new multi-use trails, all of which are features that lend themselves to more active communities (Complete Streets for Canada, 2014).

Completed in 2012, Davenport Road in Waterloo illustrates the transformative potential of retrofitting existing roads with walkable elements. Used by cars, cyclists, and pedestrians alike, Davenport Road was constructed in the 1970s and serves as a major connection between Conestoga Mall and two nearby neighbourhoods. Despite Davenport Road’s status as being a critical connection in Waterloo’s transportation network for all users, its design was largely oriented toward vehicular traffic, resulting in reckless driving and traffic accidents (Complete Streets for Canada, 2014).



Figure 26: Before redesign on Davenport Road



Figure 27: After redesign on Davenport Road

In 2006, in order to address the issue of unsafe pedestrian conditions on the road, a traffic study was conducted by the City of Waterloo and based on their findings, researchers recommended a variety of traffic calming measures in addition to the installation of bicycle facilities (City of Waterloo, 2009).

In the redesign process, Davenport Road was upgraded with landscaped pedestrian islands, landscaped boulevards, reconfigured intersections with more pedestrian crossings, traffic signal adjustments, transit shelters, line painting for cyclists, and signage (Complete Streets, 2013). The complete streets enhancements successfully reduced automobile collisions, created designated cycling space, connected two residential neighbourhoods to one another and to a shopping mall, and improved mass transit opportunities (Complete Streets, 2013). The City of Waterloo continues to demonstrate excellence in retrofitting its communities with active transportation design through Complete Streets policies, with Caroline Street and Baringer Road both recently receiving Complete Streets makeovers and with more streets to be redesigned in the near future.

5.4.1 Applicability to Strathcona, Edmonton

Negated need for major retrofits in the future - By completing a full redesign of Davenport Road, equipped with cycling, walking, and mass transit infrastructure as outlined by Complete Streets guidelines, the City of Waterloo will not have to carry out major retrofits in the future. The neighbourhood renewal process in the City of Edmonton generally only provides communities with “like for like” replacement of existing infrastructure, but there is a significant opportunity in Strathcona Centre to explore a full neighbourhood redesign to support active transportation. Advocacy for Complete Streets concepts are gaining momentum in the City of Edmonton and there is a high likelihood of communities petitioning their local governments for more favorable walking conditions within their neighbourhoods in the coming years. By implementing a full Complete Streets makeover in Strathcona while the renewal process is already underway, the City of Edmonton and residents of the community will not be burdened by extra financial costs or repeated construction related annoyances in the future.

6 / Case Supporting Redevelopment

6.1 WHAT IS NEIGHBOURHOOD RENEWAL?

The Neighbourhood Renewal program is a long-term approach by the City of Edmonton to renew Edmonton's roads, sidewalks, curbs, gutters, and streetlights through "like for like" replacement of existing infrastructure in neighbourhoods throughout the city. During reconstruction, property owners are able to choose to include certain local improvements, paid for by benefitting property owners through a local improvement tax, that may include alley renewal, sidewalk reconstruction, decorative street lighting, streetscape improvements and the like. Local improvements are initiated either by the City of Edmonton based on infrastructure assessment, or by property owners in the area. Depending on the type of local improvement, property owners must demonstrate anywhere from 2/3rds support to a full majority in order for the improvements to be approved.

Neighbourhood Renewal generally only allows for minor additions to improve walkability, such as adding missing sidewalks, but members of the Strathcona Community League are interested in exploring a full neighbourhood redesign. Through this process they would like to improve walkability within neighbourhood and expand active transit opportunities. Given the support already demonstrated in Strathcona, the Neighbourhood Renewal process offers a unique opportunity to accomplish two goals with one effort; upgrade deteriorating infrastructure while simultaneously adding or enhancing features that support active transportation within the community.

6.2 WHAT CITY DOCUMENTS SUPPORT DEVELOPING STRATHCONA INFRASTRUCTURE TO SUPPORT ACTIVE TRANSPORTATION?

6.2.1 The Way We Grow

The Way We Grow is the City of Edmonton's Municipal Development Plan which was written alongside The Way We Grow in recognition of the inherent link between land use and transportation. It provides a 10-year vision for the City of Edmonton through 6 strategic goals. References to active transportation are made throughout the document in recognition of the numerous benefits that can be received from active transportation.

Section 4.6 of The Way We Grow provides direction for the City of Edmonton to support the provision of a variety of transportation modes for Edmontonians which includes the following policies:

- Support corporate initiatives to improve walkability and other active transportation modes
- Ensure active transportation opportunities are included in plans and development proposals
- Support the design of accessible and safe active transportation networks in accordance with best practices in universal design

The City of Edmonton also recognizes that connectivity between residential areas and the river valley is an essential component of protecting, preserving, and promoting the North Saskatchewan River Valley and Ravine System as an year-round accessible place for recreation and activity for people of all ages. Strathcona is bordered on the north and east by areas protected by the North Saskatchewan River Valley Area Redevelopment Plan, including Mill Creek Ravine. There are numerous access points and opportunities for recreation and active transportation to both sections of the North Saskatchewan River Valley. This includes the following policies:

- Provide pedestrian and bicycle connections to increase movement and accessibility
- Establish baseline air quality levels for the city and collaborate with other orders of government by supporting initiatives to reduce carbon dioxide and protect air quality for future generations by supporting environmentally progressive design in public transportation, carpooling, walking or cycling and by reducing travel distances by encouraging infill

The Way We Grow provides support for community design which promotes active transportation and projects that provide opportunities for active transportation. An important component of designing active transportation concept plans will be ensuring safety of transportation networks and establishing an outline for universal design to account for a variety of users.

6.2.2 Transportation Master Plan

Edmonton's Transportation Master Plan recognizes the health, social, environmental, and financial benefits which can be achieved through active transportation. This includes the following policies:

- Streets, sidewalks and boulevards should be designed to provide safe, accessible, attractive, interesting and comfortable spaces for pedestrians, cyclists, automobiles and transit, and to accommodate utilities and landscaping
- Streetscaping improvements should be carried out that create high quality public spaces through tree planting and landscaping, pedestrian scale lighting, quality street furnishings and decorative paving
- Design approaches that reduce the impacts of parking and public utilities on the quality of the pedestrian environment are beneficial

Strathcona neighborhood is suitable in built form and mode share to implement these policies to achieve the objectives laid out by the City of Edmonton in the Transportation Master Plan. A successful attempt at neighborhood renewal that took into consideration such policies would provide a starting place for the City of Edmonton to enact similar policies in other parts of the city.

6.2.3 Winter City Design Guidelines

While Strathcona's neighbourhood renewal presents us with the opportunity to enhance its' active transportation network in general, it also allows us to envision ways in which physical activity can be promoted during even our coldest months. Such an endeavor is supported by Edmonton's Winter City Guidelines which, in recognition of our colder climate, were developed in 2015 to enhance Edmontonians' winter experience and promote year-round outdoor activities. The Winter Guidelines are guided by the five following principles:

1. Incorporate design strategies to block wind, particularly prevailing winds and down-drafts
2. Maximize exposure to sunshine through orientation and design
3. Use colour to enliven the winterscape
4. Create visual interest with light, while being mindful of intensity, spread, contrast and colour
5. Design and provide infrastructure that supports desired winter life and improves comfort and access in cold weather.

These principles are to guide the ten goals of the winter city initiative. Five of these support the goals and aims of this project:

Goal L1: Make it Easier to 'Go Play Outside': Provide More Opportunities for Outdoor Activity

Goal L2: Improve Winter Transportation for Pedestrians, Cyclists, and Public Transit Users

Goal D1: Incorporate Urban Design Elements for Winter Fun, Activity, Beauty and Interest.

Goal D2: Design Our Communities for Winter Safety and Comfort

Goal S1: Celebrate the Season and Embrace Daily Living in a Cold Climate

For the scope of our project each of these goals can be accomplished in some capacity with the improvement of Strathcona's pedestrian and cycling infrastructure. While some of these guidelines are directed towards private entities or more urban areas, the guidelines contain a plethora of recommendations that could be applied within the scope of the more residential nature of the neighborhood.

6. 2.4 Complete Streets

As a part of the Transportation Master Plan and The Way We Move, the City of Edmonton created the Complete Streets Guidelines (2013) to encourage street design that better meets the needs of all users while facilitating multiple means of transportation in an attractive and sustainable way. The guidelines are specifically crafted to provide guidance for rehabilitation projects including the Neighbourhood Renewal process (pg.14) to work towards creating streets that allow for a wider array of safe and accessible options in all seasons (pg.11). As such the Complete Streets Guidelines provide a firm basis of support for the use of the Neighbourhood Renewal process as an opportunity include additional improvements to Strathcona's street network as opposed to the like-for-like proposed by current standards.

- In support of the recognition that “one size does not fit all” (pg.4) the document provides a set of is based on the following six principles:
- Provide travel options for all users and trip purposes in a safe, accessible, context sensitive way in all seasons
- Form a network of streets that together accommodate all users and allow for efficient and high quality travel experiences
- Be adaptable by accommodating the needs of the present and future through effective space allocation for the many functions of the street
- Contribute to the environmental sustainability and resiliency of the city
- Consider both direct and indirect costs, as well as the value of the roadway and the adjacent real estate
- Be vibrant and attractive people-places in all seasons that contribute to an improved quality of life.

The Complete Street Guidelines also provides a toolkit to provide specific examples of what elements are included in complete streets and the relevant considerations for successful implementation. The toolkit is divided into six sections: General Street Design and Operation, Pedestrians, Bike Network Streets, Transit, Goods, Movement, and Complete Streets Context Illustrations. In general, these guidelines provide recommendations for where these tools are best implemented and what their possible impacts on other aspects of the neighbourhood may be.

So far complete streets have been selectively implemented, with pilot projects including a planning study of 142nd street and the reconstruction of 112th avenue and 50th street. Most relevant to the scope of this project is the Westmount Neighbourhood Renewal, in which the Complete Street Guidelines were used primarily to aid residents and facilitate conversations regarding potential improvements to the streets.

6.3 WHY IS STRATHCONA A UNIQUE CASE?

The neighbourhood renewal process will begin in Strathcona Centre in the Fall of 2017. While the City of Edmonton typically only implements “like for like” replacement of infrastructure in the neighbourhoods that are renewed, there are compelling reasons, including the four existing City documents outlined above, for why Strathcona Centre should be treated as a unique case by the City of Edmonton.

6.3.1 Location and History

As one of the city’s oldest neighbourhoods, Strathcona has a rich cultural heritage and its history offers opportunities for place-making, character areas, and streetscaping. Strathcona is also one of the most central neighbourhoods in Edmonton, with excellent access to some of the most prominent areas of the city. Because of this proximal location, especially to Whyte Avenue, the University of Alberta, and the river valley trail system, Strathcona sees a high amount of on foot traffic not only from local residents, but citizens of Edmonton as a whole. Strathcona is also the locale of many of the city’s most popular festivals, which attracts Edmontonians and visitors from all over the country and in some cases, the world, many of whom travel on foot to view the various attractions.

By improving walking and cycling conditions, the neighbourhood would not only become more liveable for its current residents, but would also benefit the many visitors to the neighbourhood by providing a more comfortable pedestrian experience and by improving connectivity to other neighbourhoods and amenities.



Figure 28: Old Strathcona Public Library



Figure 29: High density residential development in Strathcona

6.3.2 Population Density and Destinations

Population density is often used as an indicator of a neighbourhood's walkability, as a higher population in a given area generally corresponds with a greater number of destinations within walking distance (Grasser, Van Dyck, Titze, & Stronegger, 2013). According to the 2011 Municipal Census, Strathcona is the second most densely populated neighbourhood in Edmonton and this density reflects many of the sustainable features inherent to the makeup of Strathcona as a walkable community. Within walking distance are recreation opportunities, local shops and restaurants, parks, schools, and more. In some cases, it is possible for a person living in Strathcona to access work, home, leisure, commerce, and school all by foot or on bicycle.

Despite the density of Strathcona and the proximity of the neighbourhood to many desirable destinations, existing development is still car-oriented, with high traffic arterials and low-density industrial and commercial uses favored over quality pedestrian connections and green spaces. Given that Strathcona is comparatively very dense, often having triple the number of residents that other neighbourhoods in the City of Edmonton do, there is a strong demand for the delivery of efficient, integrated, and multimodal mobility. By strengthening Strathcona's walkability, it will empower residents to choose active transit when making their daily travels.

6.3.3 Current travel behaviour and existing infrastructure

As discussed earlier, current travel behaviour in Strathcona conforms to the notion that dense, central neighbourhoods will encourage active forms of transit, with 20.7% of residents walking or cycling to work, compared with the city-wide average of 4.8%. These numbers demonstrate that a culture of walking already exists in Strathcona and upgrading of current infrastructure could help propel the percentage of people who engage in active transport not only on daily errand runs, but also on their commutes to work.


7 / Preliminary Concept Plan Design Principles

7.1 ACTIVE DESIGN PRINCIPLES GUIDING CONCEPT PLAN DESIGN IN STRATHCONA

While the City of Edmonton (2012) cites Strathcona Centre as the city’s “most walkable neighbourhood,” there are still numerous opportunities to enhance pedestrian friendly infrastructure within the community. Due to its central location, Strathcona is dissected by three high-capacity arterial roads, Calgary Trail, Gateway Boulevard, and 99th Street, all of which connect residents with other parts of the city, but also present challenges for residents attempting to walk through their community. Furthermore, Strathcona is buttressed by Whyte Avenue to the South and Saskatchewan Drive to the North, which, similarly to the arterial roads, attracts high traffic volumes and creates issues of non-resident parking in residential areas and vehicles using residential streets as “cut throughs.” The walkability of the neighbourhood is limited not only by the volume of non-resident traffic, but also by vehicular oriented design on residential streets that has become antiquated in the community of Strathcona.

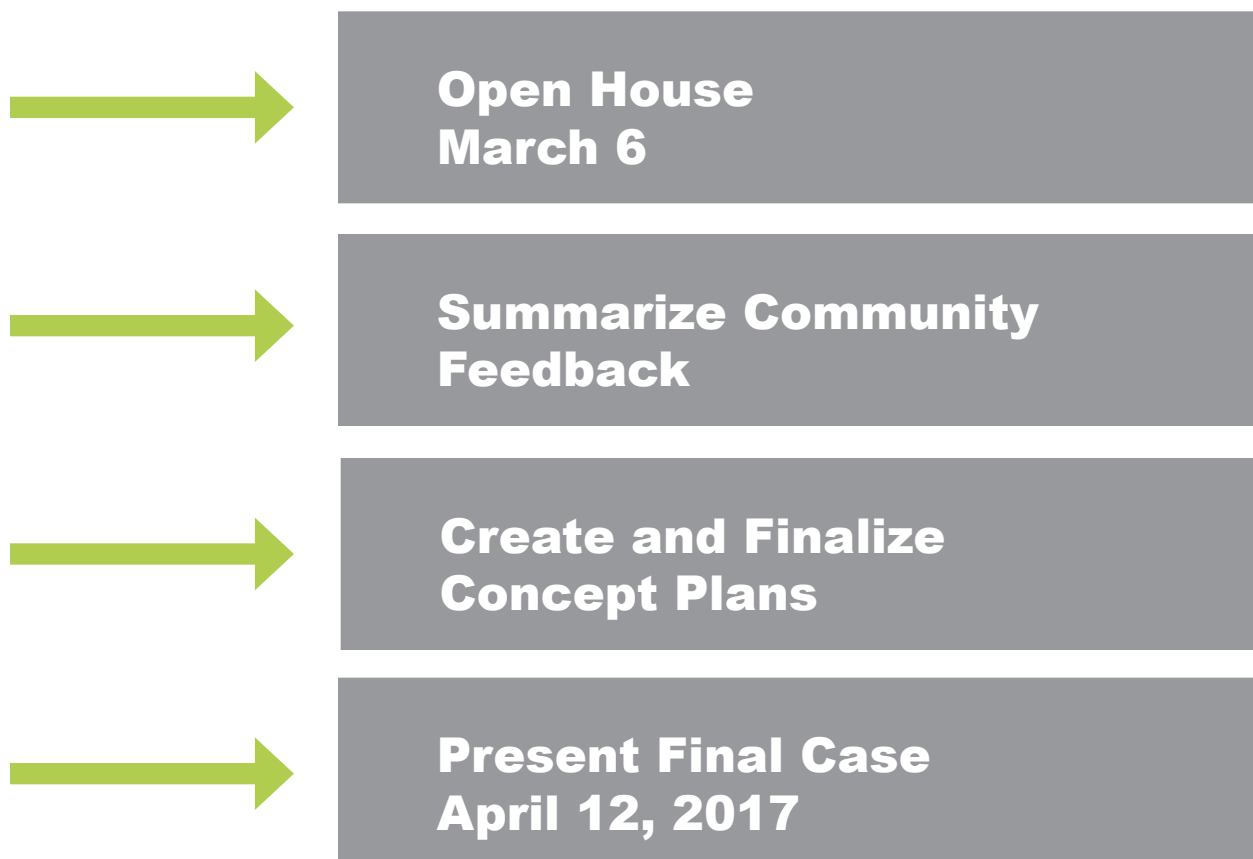
Envisioning the road as an important component of public space and how it can be converted into a space for other users is an important component of designing for different modes of transportation in Strathcona. The following is a list of principles governing our work groups creation of concept plans that will demonstrate improved walkability and active transport for the neighbourhood:

- ➔ Ensuring visibility and legibility of transportation networks which makes the option of active transportation more attractive and accessible. This will have the effect of attracting more users to active transportation amenities and facilitating a mode shift.
 - ➔ Linking and connecting destinations and networks through a neighborhood which provides more opportunities for different types of trips. This means designing routes and networks to bypass neighborhood features that would normally be an impediment to cyclists and pedestrians such as areas of heavy traffic or unnavigable passages. Connecting destinations can also mean accounting for connections between land use and transportation usage patterns when designing active transportation networks. **44**
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-  Creating projects which are economically feasible throughout the project lifespan by minimizing operational costs and using resources for projects which optimize the cost benefit for users. This may include reorienting space using existing features to slow traffic and using flexible design features with less infrastructure.
-  Integrating trails and paths with other forms of transportation so that users are able to link trips using multiple modes of transportation. Planning and designing for short-trips can be conducive to trip linking. Providing amenities at bus stops and transit stations which may include secure bicycle parking and benches can improve the travel experience of the user.
-  Embracing and increasing accessibility to attractive natural and urban features. This can be accomplished by planning routes to include areas of visual interest such as architecturally unique areas and look-out points.
-  Employing context specific solutions to different facility types and designing with the immediate environment in mind while accommodating a wide range of users. Following the concept of Complete Streets can assist in ensuring the safety and trip quality of a wide range of users when using transportation amenities. This can also include designing for certain demographics and institutions which may have specific transportation needs.
-  Ensuring design is sustainable by incorporating materials and route locations which mitigate the impact that is had on the environment and encouraging users towards more sustainable forms of transportation. This can include incorporating low impact development features into infrastructure projects and following necessary precautions when implementing plans in environmentally sensitive areas.

8 / Next Steps

In completion of phases 1 and 2 of the Strathcona Neighbourhood Renewal Project, the project team will be focusing on further development of the case supporting active transportation in Strathcona Centre and the development of finalized concept plans. On March 6, 2017, the final phase of community consultation will occur with Strathcona Centre Community League. During the open house there will be opportunities to contribute resident knowledge and experiences, view draft concept plans, and provide feedback. All community consultation feedback will be considered in the completion of the final concept plans, final report, and case supporting Strathcona Centre Neighbourhood Renewal. Strathcona Centre Neighbourhood supporting case will be presented on April 12, 2017 with consideration of all stages of research, development, and consultations.



DEFINITIONS

<p>Active Transportation: All modes of human powered forms of travel.</p>
<p>Bike Boulevards: Streets which prioritize bicycle traffic through a combination of traffic volume and speed management designs.</p>
<p>Bioswales: Landscape features which seek to increase water absorption.</p>
<p>Chicanes: Modifications of a street that prevents vehicles from travelling in a straight path. This may be accomplished by having alternating curb extensions, alternating parking lanes from one side of the road to the other, or through road planters</p>
<p>Community Livability: The perceived environmental and social quality of a neighbourhood by residents and visitors alike.</p>
<p>Complete Streets: Street design that seeks to ensure that the street is accessible users of all ages and abilities while accommodating multiple modes of transportation.</p>
<p>Connectivity: A measure of how well a street or transportation network connects to destinations in addition to other networks.</p>
<p>Curb Extensions/Bulb outs: A narrowing of the street space through either an extension of the sidewalk or other non-vehicular space.</p>
<p>Cyclist Crossing Enhancements: Design elements that seek to provide greater amount of space and visibility to cyclists at intersections. Can be accomplished through street markings, bicycle boxes, or staged turn signals.</p>
<p>Desire Line/Paths: Desire paths/lines are informal paths created when users choose a typically more direct shortcut over the more official constructed route or sidewalk. As they represent a preferred route to a particular destination, they can indicate a potential location for an improved path.</p>
<p>Diverters: Barriers placed in the intersection which prevent vehicular movement in that direction. They can limit cars to right turn, or from entering a street entirely.</p>
<p>Enhanced crosswalks: Any combination of tools to enhance pedestrian visibility and crossing safety. These includes improved street marking, lighting, or raised crossings.</p>

Eyes-on-the-Street: A term coined by Jane Jacobs, 'Eyes-on-the-Street' refers to the informal means of surveillance/security made up of residents or visitors and their observation of public space.

Low Impact Development: Elements that can reduce demands on other infrastructure such as stormwater management.

Municipal Development Plan: A statutory plan that sets a vision for the constituent municipality and its development. The Way We Grow is Edmonton's MDP.

Neckdowns: A significant narrowing of road space created by pairing curb extensions on either side of the street.

Neighbourhood Traffic Circles: Smaller scale traffic circles placed in intersection that limit speed by requiring drivers to move around them.

Pedestrian Scale/Oriented Lighting: Lighting that prioritizes pedestrian paths over other modes.

Permeable Paving: A form of modified pavement which allows water to drain into the soil rather and reduce demands on storm water management.

Separated Cycle Tracks: Paths dedicated to cycle traffic and are physically separated from traffic, either through raised curbs, on street parking, or other means.

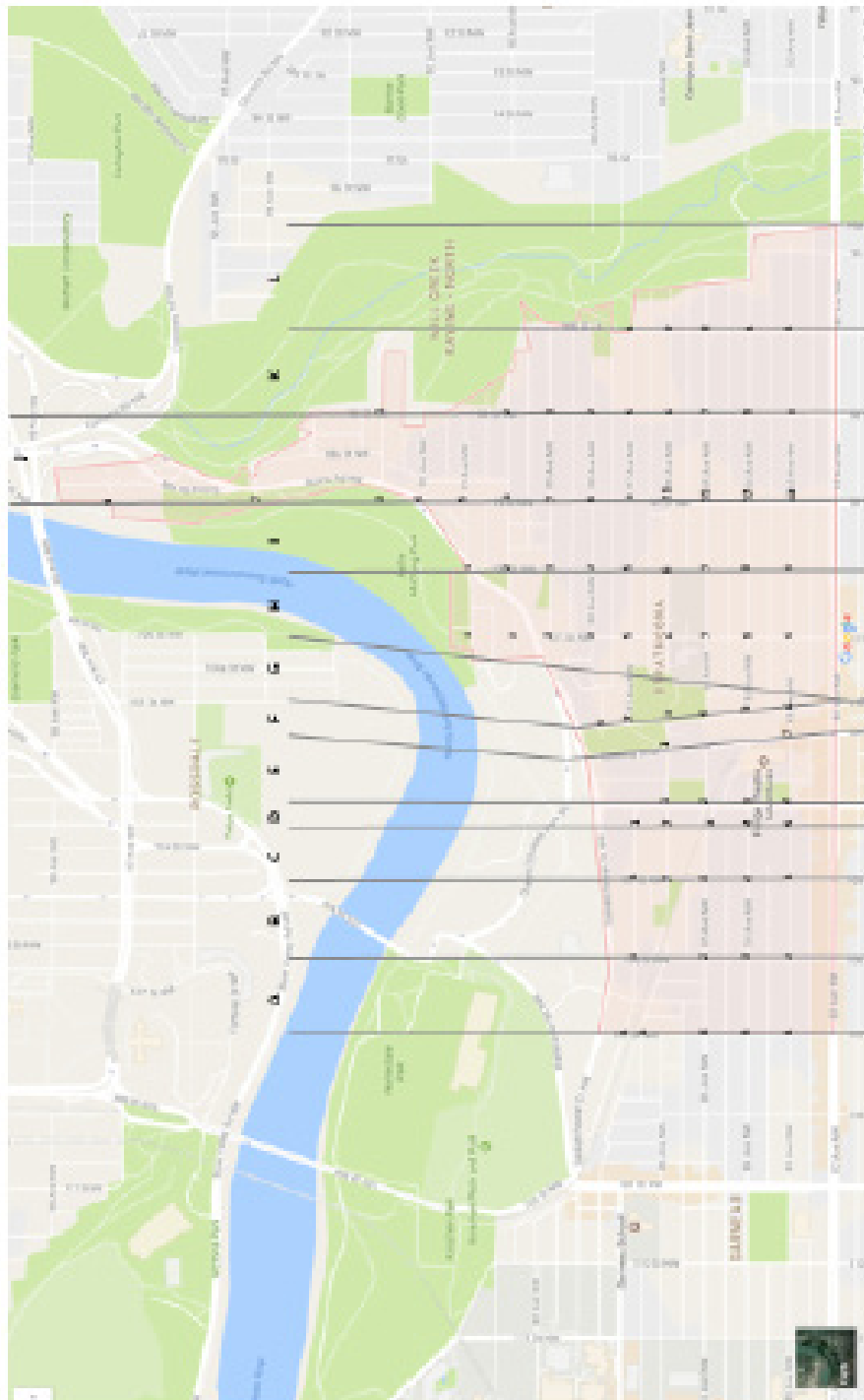
Shared-Use Paths: Combine pedestrian and cycle traffic onto a single separated path.

Systematic Pedestrian and Cycling Environmental Scan (SPACES): A method of assessing paths that have potential to be used for walking and/or cycling. The survey was developed for a metropolitan communities geographic scale to measure which physical environmental factors have the greatest impact on physical activity

Traffic Calming: Design tools which seek to limit or even prohibit automobile traffic. It is designed to promote safety for both vehicular and non-vehicular modes of transit.

Appendices

Appendix A



Segment #	A1	A2	A3	A4	A5	B1	B2	B3	B4
Ave/Street	87 AVE	86 AVE	85 AVE	84 AVE	83 AVE	87 AVE	85 AVE	84 AVE	83 AV
Types of building/features	Mixed residential, home offices (East Side)	Mixed residential	Low rise apartments, mixed residential	Low rise apartments, mixed residential	Low rise apartments	One tower, mixed residential (North Side)	Low rise apartments, mixed residential	Low rise apartments, mixed residential, Old Scona, and school field	Low rise apartments, mixed residential
Q1 A:									
Q1 B:									
Predominant buildings/features	Offices, mixed residential	Mixed residential	Mixed residential	Mixed residential	Mixed residential	Mixed residential	Mixed residential	School field, mixed residential	Low rise apartments
Q1 C:									
Predominant buildings/features (YN)	N	Y	N	Y	Y	N	Y	N	Y
Section A: Walking and Cycling Paths									
Q2: Path Type									
Footpath	X		X	X	X	one side	X	X	X
Shared path with markings									
Shared path with no markings									
Q3: Path Location									
next to the road street									
within 1m of curb									
1-2m of curb	X	X	X	X	X			X	X
2-3m of curb						X	X		
Q4: Path Material									
continuous concrete/concrete slabs/paving bricks/gravel/turf/grass/under repair	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete
Q5: Path Slope									
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Q6: Path Condition and Smoothness									
poor									
moderate	X	X	X	X	X		X	X	
good						X			X

Segment #	A1	A2	A3	A4	A5	B1	B2	B3	B4
Q18: Type of Crossings									
Marked crossing									X (105 Street)
Traffic Signals									
bridge/overpass									
underpass									
Q17: Crossing Aids									
median refuge and traffic island									
kerb extension									
Q18: Presence of Streetlights (if no go to Q20)									
YN	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q19: Does the lighting cover the path area?									
YN	N		N	N	N	N	N	N	N
Q20: Any destinations present in segment (if No go to Q 23)									
YN	N	N	N	N	N	N	N	School	N
Q21: Number of car parking facilities at destinations									
0									
1-20									
21-50								X (83 Ave)	
51-70									
71-100									
Q22: Bike parking facilities									
Bike lockers & enclosure / U Racks/Rack									
Q23: Driveway crossovers									
Most buildings have one driveway	X (Front/Back)		X (alley)	X (alley)	X (alley)		X (alley)		X (alley)
.5 of buildings have one driveway						X (parking garages)			
.25 buildings have one driveway								X	
no driveways									

Segment #	A1	A2	A3	A4	A5	B1	B2	B3	B4
Q7: Permanent Path Obstructions									
poles/tables/chairs/signs/home	None	None	None	None	None	None	None	None	None
Section B: Street Assessment									
Q8: Lane Type									
on-road cycle lane that has been marked									
on-road cycle lane with no markings									
No lane	X	X	X		X	X	X	X	X
Q9: Slope of Street/Road									
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Q10: Street/Road Condition									
poor									
moderate	X	X	X	X	X		X	X	
good									X
under repair									
Q11: Number of lanes on the street/road									
total number of traffic lanes (i.e. 1, 2, etc.)		1		1	1	1	2	3	2
Q12: Vehicle parking restriction signs									
no parking allowed	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)
parking allowed	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)	X (1 Side)
Q13: Kerb Type									
mountable								X (at intersections)	X (at intersections)
non-mountable	X	X	X					X (at 105 street intersection)	
Q14: Traffic Control Devices									
roundabouts/ramps/speed humps/flare narrowing/chicanes/none	None	None	None	None	None	None	None	None	None
Q15: Other Routes Available									
Lane	X	X	X	X	X	X	X	X	X
cul-de-sacho through road									

Segment #	A1	A2	A3	A4	A5	B1	B2	B3	B4
Q24: Surveillance									
can be observed from more than 75% of buildings	X	X	X	X	X	X		X	X
can be observed from between 50-74% of buildings									
can be observed from less than 50% of buildings									
Not Applicable									
Q25: Yard Maintenance									
More than 75% well maintained	X	X	X	X	X	X	X	X	X
Between 50-74% well maintained									
Less than 50% maintained									
not applicable									
Q26: Sidewalk Maintenance (know/ice coverage)									
More than 75% well maintained									X
Between 50-74% well maintained	X	X	X	X	X	X	X	X	
Less than 50% maintained									
not applicable									
Q27: Number of verge trees									
1 or more trees per house block	X	X	X	X	X				
1 tree for every 2 house blocks									
3 or more trees per house blocks									
no trees at all									
Q28: Average height of the trees									
Small									
Medium									
Large	X	X	X	X	X	X	X	X	X
Q29: Cleanliness									
Yes, lots	X	X	X	X	X	X	X	X	X
Yes, some									
none or almost none									
Q30: Types of sews									
urban/commercial/water/tended nature/nature	Urban/commercial	Urban	Urban	Urban	Urban	Urban	Urban	Urban	Urban

Segment #	A1	A2	A3	A4	A5	B1	B2	B3	B4
Q31: How alike building designs all are similar					X				
range of different designs not applicable	X	X	X	X		X	X	X	X
Q32: How attractive would you rate this segment for walking							X	X	X
Very attractive							X	X	X
Attractive	X	X	X	X	X	X			
Not attractive at all									
Q33: How physically difficult would you rate this segment for walking?									
Easy	X	X	X	X	X	X	X	X	X
Moderate Difficult									
Very Difficult									
Q34: How attractive would you rate this segment for cycling?							X	X	X
Very attractive							X	X	X
Attractive	X	X	X	X	X	X			
Not attractive at all									
Q35: How physically difficult would you rate this segment for cycling?									
Easy	X	X	X	X	X	X	X	X	X
Moderate Difficult									
Very Difficult									
Section C: Overall Assessment									
Q36: Continuity of the path	N	N	Y	Y	Y	Y	Y	Y	Y
Q37: Neighbourhood Legibility									
Very Easy	X	X	X	X	X	X	X	X	X
Fairly easy									
not easy at all									

Segment #	C1	C2	C3	C4	C5	D1	D2	D3	D4	D5
Q6: Path Condition and Smoothness										
poor										
moderate	X	X	X	X	X	X	X	X	X	X
good										
under repair										
Q7: Permanent Path Obstructions										
poles/benches/signs/home	None	None	None	None	None	None	None	None	None	Signs/Benches
Section B: Street Assessment										
Q8: Lane Type										
on-road cycle lane that has been marked										
on-road cycle lane with no markings	X	X	X	X	X	X	X	X	X	X
No lane										
Q9: Slope of Street/Road										
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Q10: Street/Road Condition										
poor										
moderate		X	X	X	X	X	X	X	X	X
good	X									
under repair										
Q11: Number of lanes on the street/road										
total number of traffic lanes (i.e. 1, 2, etc.)	2	2	1 way	1 and one way	2	2	2	2	2	2
Q12: Vehicle parking restriction signs										
no parking allowed	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X	X
parking allowed	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)		
Q13: Kerb Type										
mountable	X	X	X	X	X	X	X	X	X	X
X (at 105 street intersection)										
non-mountable										
no kerb										

Segment #	C1 87 AVE	C2 86 AVE	C3 85 AVE	C4 84 AVE	C5 83 AVE	D1 87 AVE	D2 86 AVE	D3 85 AVE	D4 84 AVE	D5 83 AVE
Q1 A: Types of building features	Mixed residential, low rise apartments	Mixed residential, low rise apartments	Mixed Residential, rail track	Low rise apartments, mixed residential, a 10+ story apartment tower, church, Catholic school building	Parking, Strathcona Health centre, historical telephone building	Mixed residential, low rise apartments	Mixed residential	Mixed residential, rail tracks	Church, low rise apartments	commercial, dentist office, church, parking lot
Q1 B: Predominant buildings/features	Mixed residential	Mixed residential	Mixed residential	Low rise apartments	Health centre	Low rise apartments	Mixed residential	Mixed residential	Low rise apartments	Commercial
Q1 C: Same Both Sides (Y/N)	N	Y	N	N	N	N	Y	N	N	N
Section A: Walking and Cycling Paths										
Q2: Path Type										
Footpath	one side	X	one side	X	X	one side	X	one side	X	X
Shared path with markings										
Shared path with no markings										
Q3: Path Location										
next to the road street					X					X
within 1m of curb										
1-2m of curb	X			X		X	X	X	X	X
2-3m of curb										
Q4: Path Material										
continuous concrete/concrete slabs/paving bricks/gravel/bamens/grass/under repair	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete Brick
Q5: Path Slope										
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat

Segment #	C1	C2	C3	C4	C5	D1	D2	D3	D4	D5
Q14: Traffic Control Devices										
roundabouts/tramped speed humps/lane narrowing/chicanes/none	None	None	None	None	None	None	None	None	None	None
Q15: Other Routes Available										
Lane	X	X	X	X	X	X	X	X	X	X
cul-de-sac/through road path through park										
Q16: Type of Crossings										
Marked crossing		X		X (104 street)	X (105 street)		X		X	
Traffic Signals										X (intercals)
bridge/overpass										
underpass										
Q17: Crossing Aids										
median refuge and traffic island				Median (104 street)			Median	Median	Median	Median
kerb extension										
Q18: Presence of Streetlights (if no go to Q20)										
Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q19: Does the lighting cover the path area?										
Y/N	N	N	N	N	N	some what	some what	N	N	Y
Q20: Any destinations present in segment (if No go to Q 23)										
Y/N	N	N	N	Y	Y	N	N	N	church	stores, dentist office, church
Q21: Number of car parking facilities at destinations										
0										
1-20										
21-50									X	
51-70										X
71-100				X	X					
Q22: Bike parking facilities										

Segment #	None C1	None C2	None C3	None C4	None C5	None D1	None D2	None D3	None D4	U-rail/Rack D5
Bike locker& enclosure/ U Rails/Rack										
Q23: Driveway crossovers										
Most buildings have one driveway	X			X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)
.5 of buildings have one driveway		X								
.25 buildings have one driveway				X						
no driveways			X							
Q24: Surveillance										
can be observed from more than 75% of buildings		X	X	X		X			X	
can be observed from less than 50% of buildings	X				X		X	X		X
Q25: Yard Maintenance										
More than 75% well maintained	X	X	X	X	X	X	X	X		
Between 50-74% well maintained									X	
Less than 50% maintained										X
not applicable										
Q26: Sidewalk Maintenance (snow/ice coverage)										
More than 75% well maintained	X		X	X		X	X			
Between 50-74% well maintained		X			X			X	X	X
Less than 50% maintained										X
not applicable										
Q27: Number of large trees										
1 or more trees per house block	X		X		X					X
1 tree for every 2 house blocks		X		X		X			X	
3 or more trees per house blocks							X	X		
no trees at all										
Q28: Average height of the trees										
Small					X		X			
Medium						X		X	X	X
Large	X	X	X	X						
Q29: Cleanliness										
Yes, lots	X	X	X	X			X		X	X

Fairly easy
not easy at all

Segment #	E1 86 AVE	E2 85 AVE	E3 84 AVE	E4 83 AVE	F1 82 AVE	F2 81 AVE	G1 80 AVE	G2 79 AVE	G3 78 AVE	G4 77 AVE	G5 76 AVE	G6 75 AVE
Q1 A: Types of building/features	Mixed residential .park	Mixed commercial .park	Mixed commercial	Mixed commercial	Park	Parking lot	Mixed residential	Mixed residential, park	School, mixed residential	Church, mixed residential, park	Mixed residential	Mixed residential
Q1 B: Predominant buildings/features	Mixed residential	Mixed commercial	Mixed commercial	Mixed commercial	Park	Parking lot	Mixed residential	Mixed residential	Mixed residential	Mixed residential	Mixed residential	Mixed residential
Q1 C: Predominant buildings/features Same Both Sides (Y/N)	N	N	Y	Y	N	Y	N	N	N	N	Y	Y
Section A: Walking and Cycling Paths												
Q2: Path Type												
Footpath	X	X	X	X	X	X	X	X	X	X	X	X
Shared path with markings												
Shared path with no markings												
Q3: Path Location												
next to the road street	X	X	X	X	X				X	X		
within 1m of curb						X	X				X	X
1-2m of curb								X				
2-3m of curb										X		
Q4: Path Material												
continuous concrete/concrete												
stable paving												
bricks/gravel/biumen/grass/under repair	Continuou Concrete	Brick	Brick		Continuou Concrete	Continuou Concrete	Continuou Concrete	Continuou Concrete	Continuou Concrete	Continuou Concrete	Continuou Concrete	Continuou Concrete
Q5: Path Slope												
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Q6: Path Condition and Smoothness												
poor	X					X			X		X	
moderate		X			X		X	X		X		X

Yes, some
none or almost none

Segment #	C1	C2	C3	C4	C5	D1	D2	D3	D4	D5
Q30: Types of views										
urban/commercial/water/tended nature/nature	Urban	Urban	Urban	Urban	Urban/ commercial	Urban	Urban	Urban	Urban	Urban
Q31: How alike building designs all are similar										
range of different designs	X	X	X	X	X	X	X	X	X	X
not applicable										
Q32: How attractive would you rate this segment for walking										
Very attractive		X		X			X			
Attractive	X		X			X		X	X	X
Not attractive at all					X					
Q33: How physically difficult would you rate this segment for walking?										
Easy	X	X	X	X	X	X	X	X	X	X
Moderate/Difficult										
Very Difficult										
Q34: How attractive would you rate this segment for cycling?										
Very attractive	X	X	X	X			X			
Attractive						X		X	X	X
Not attractive at all										
How physically difficult would you rate this segment for cycling?										
Easy	X	X	X	X	X	X	X	X	X	X
Moderate/Difficult										
Very Difficult										
Section C: Overall Assessment										
Q36: Continuity of the path										
Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q37: Neighbourhood Legibility										
Very Easy	X	X	X	X	X	X	X	X	X	X

good
under repair

Segment #	E1	E2	E3	E4	F1	F2	G1	G2	G3	G4	G5	G6
Q7: Permanent Path Obstructions poles/table& chairs/signs/none	None	None	Chairs	None	Tables	None	None	None	None	None	None	None
Section B: Street Assessment												
Q8: Lane Type												
on-road cycle lane that has been marked												
on-road cycle lane with no markings	X	X	X	X	X	X	X	X	X	X	X	X
No lane												
Q9: Slope of Street/Road												
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Q10: Street/Road Condition												
poor						X		X	X	X	X	X
moderate		X				X		X	X	X	X	X
good				X		X						
under repair												
Q11: Number of lanes on the street/road												
total number of traffic lanes (i.e. 1, 2, etc.)	2	2	2	2	2	2	2	1	2	2	2	1
Q12: Vehicle parking restriction/signs no parking allowed												
parking allowed	X	X	X	X	X	X	X	X	X	X	X	X
Q13: Kerb Type												
mountable		X	X	X					X			X
non-mountable	X				X	X	X	X		X		
Q14: Traffic Control Devices roundabouts/ramps/speed humps/lane narrowing/traffic signs												
Q15: Other Routes Available	X											

Segment #	E1	E2	E3	E4	F1	F2	G1	G2	G3	G4	G5	G6
cul-de-sachs/no through road path through park			X						X			
Segment #	E1	E2	E3	E4	F1	F2	G1	G2	G3	G4	G5	G6
Q16: Type of Crossings												
Marked crossing	X	X	X	X	X	X						
Traffic Signals					X							
bridge/overpass												
Q17: Crossing Aids												
median refuge and traffic island												
kerb extension												
Q18: Presence of Streetlights (if no go to Q20)												
Y/N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q19: Does the lighting cover the path area?												
Y/N	N	N	Y	Y	N	N	N	N	N	N	N	N
Q20: Any destinations present in segment (if No go to Q23)												
Y/N												
Q21: Number of car parking facilities at destinations												
0	X		X									
1-20		X								X		
21-50								X	X			
51-70									X			
71-100												
Q22: Bike parking facilities												
Bike lock&enclosure/U Rails/Rack	None	None	U Rails	U Rails	None	None	None	None	Rack	None	None	None
Q23: Driveway crossovers												
Most buildings have one driveway												
.5 of buildings have one driveway								X			X	

Segment #	E1	E2	E3	E4	F1	F2	G1	G2	G3	G4	G5	G6
Q30: Types of views												
urban/commercial/water/tended nature/nature	Urban	Commercial / tended nature	Urban	Urban	Tended nature	Urban	Urban	Tended nature	Urban/tended nature	Urban/tended nature	Urban	Urban
Q31: How alike building designs all are similar												
range of different designs	X	X	X	X	X	X	X	X	X	X	X	X
Q32: How attractive would you rate this segment for walking												
Very attractive			X	X				X			X	X
Attractive					X			X		X		
Q33: How physically difficult would you rate this segment for walking?												
Easy	X	X	X	X	X	X	X	X	X	X	X	X
Moderate Difficult												
Very Difficult			X	X	X							X
Q34: How attractive would you rate this segment for cycling?												
Very attractive								X	X		X	X
Attractive												
Q35: How physically difficult would you rate this segment for cycling?												
Easy	X	X	X	X	X	X	X	X	X	X	X	X
Moderate Difficult												
Very Difficult												
Section C: Overall Assessment												
Q36: Continuity of the path												
Y/N	Y	Y	N	Y	N	Y	N	Y	N	N	Y	Y

Segment #	E1	E2	E3	E4	F1	F2	G1	G2	G3	G4	G5	G6
Q37: Neighbourhood Legibility												
Very Easy		X	X	X	X							
Fairly easy	X							X	X	X	X	X
Segment #	H1	H2	H3	H4	H5	H6	H7	H8	H9	H9	H9	H9
Ave/Street	91 AVE	90 AVE	89 AVE	88 AVE	87 AVE	86 AVE	85 AVE	84 AVE	83 AVE	83 AVE	83 AVE	83 AVE
Q1 A: Types of building/features	Large SDHs	Large SDHs	apartment towers, park, mixed residential	mixed residential, low rise apartments, SDHs	mixed residential, low rise apartments	School, mixed residential, SDHs	School, mixed residential	mixed residential, church	Mixed residential			
Q1 B: Predominant buildings/features	Mixed residential	Mixed residential, lots of trees	Mixed residential, apartment towers	SDHs	SDHs	SDHs, schools	SDHs, schools	Church	Mixed residential			
Section A: Walking and Cycling Paths												
Q2: Path Type												
Footpath	X(stars one side)	one side	X	X	X	X	X	X	X	X	X	X
Q3: Path Location												
next to the road street	X	X							X (one side)	X (one side)	X (one side)	X (one side)
within 1m of curb												
1-3m of curb												
2-3m of curb											X (one side)	X (one side)
Q4: Path Material												
continuous concrete/concrete slabs/paving bricks/gravel/bitumen/grass/under repair	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete
Q5: Path Slope												
flat/gentle/moderate/steep slope	Moderate/Flat	Gentle/Sloped	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Q6: Path Condition and Smoothness												

poor		X							
moderate									
good		X	X	X	X	X	X	X	X
under repair									
Segment #	H1	H2	H3	H4	H5	H6	H7	H8	H9
Q7: Permanent Path Obstructions poles/tables& chairs/signs/scone	None	None	None	None	None	None	None	None	None
Section B: Street Assessment									
Q8: Lane Type									
on-road cycle lane that has been marked									
on-road cycle lane with no markings	X	X	X	X	X	X	X	X	X
No lane									
Q9: Slope of Street/Road									
flat/gentle/moderate/steep slope	Moderate/Flat	Gentle/Steep	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Q10: Street/Road Condition									
poor	X								
moderate									
good		X	X	X	X	X	X	X	X
under repair									
Q11: Number of lanes on the street/road									
total number of traffic lanes (i.e. 1, 2, etc.)	2	2	2	2	2	2	2	2	2
Q12: Vehicle parking restriction signs									
no parking allowed			X(1 Side)	X(1 Side)	X(1 Side)	X(1 Side)	X(1 Side)	X(1 Side)	X(1 Side)
parking allowed	X	X	X(1 Side)	X(1 Side)	X(1 Side)	X(1 Side)	X(1 Side)	X(1 Side)	X(1 Side)
Q13: Kerb Type									
mountable	X	X	X (at intersection)	X (at intersection)	X (at intersection)	X	X	X	X
non-mountable									
no kerb									
Q14: Traffic Control Devices									
roundabouts/ramps&speed humps/fane narrowing/chicanes/scone	None	None	None	None	None	None	None	None	None

can be observed from more than 75% of buildings		X		X	X	X	X	X	X
can be observed from between 50-74% of buildings	X		X						
can be observed from less than 50% of buildings									
Not Applicable									
Segment #	H1	H2	H3	H4	H5	H6	H7	H8	H9
Q25: Yard Maintenance									
More than 75% well maintained	X	X	X	X	X	X	X	X	X
Between 50-74% well maintained									
Less than 50% maintained									
not applicable									
Q26: Sidewalk Maintenance (snow/ice coverage)									
More than 75% well maintained		X	X		X	X	X		
Between 50-74% well maintained				X					
Less than 50% maintained	X						X	X	
not applicable									
Q27: Number of verge trees									
1 or more trees per house block									
1 tree for every 2 house blocks			X	X	X	X	X	X	X
3 or more trees per house blocks	X	X							
no trees at all									
Q 28: Average height of the trees									
Small									
Medium									
Large	X	X	X	X	X	X	X	X	X
Q29: Cleanliness									
Yes, lots	X	X	X	X	X	X	X		
Yes, some								X	X
none or almost none									
Q30: Types of views									
urban/commercial/water/tended nature/nature	Urban/nature	Urban/nature	Urban	Urban	Urban	Urban	Urban	Urban	Urban
Q31: How alike building designs									

Q15: Other Routes Available									
Lane	X	X		X	X	X	X	X	X
cul-de-sacho through road									
path through park	X		X						
Segment #	H1	H2	H3	H4	H5	H6	H7	H8	H9
Q16: Type of Crossings									
Marked crossing	X(Sask. Drive)						X	X	
Traffic Signals									
bridge/overpass									
underpass									
Q17: Crossing Aids									
median refuge and traffic island									
kerb extension									
Q18: Presence of Streetlights (if no go to Q20)									
Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q19: Does the lighting cover the path area?									
Y/N	some what	some what	N	N	N	some what	some what	some what	some what
Q20: Any destinations present in segment (if No got to Q 23)									
Y/N	N	N	N	N	N	school	school	church	N
Q21: Number of car parking facilities at destinations									
0									
1-20						X	X		
21-50									
51-70								X	
71-100									
Q22: Bike parking facilities									
Bike locker&enclosure	None	None	None	None	None	Rack	Rack	None	None
U Rails/Rack									
Q23: Driveway crossovers									
Most buildings have one driveway	X	X		X	X	X	X	X	X
.5 of buildings have one driveway						X			
no driveways									
Q24: Surveillance									

all are similar									
range of different designs	X	X	X	X	X	X	X	X	X
not applicable									
Segment #	H1	H2	H3	H4	H5	H6	H7	H8	H9
Q32: How attractive would you rate this segment for walking?									
Very attractive		X	X	X	X	X	X	X	X
Attractive	X								
Not attractive at all									
Q33: How physically difficult would you rate this segment for walking?									
Easy			X	X	X	X	X	X	X
Moderate	X	X							
Difficult									
Very Difficult									
Q34: How attractive would you rate this segment for cycling?									
Very attractive			X	X	X	X	X	X	X
Attractive	X	X							
Not attractive at all									
Q35: How physically difficult would you rate this segment for cycling?									
Easy			X	X	X	X	X	X	X
Moderate	X								
Difficult									
Very Difficult		X							
Section C: Overall Assessment									
Q36: Continuity of the path									
Y/N	Y	N	Y	Y	Y	Y	Y	Y	Y
Q37: Neighbourhood Legibility									
Very Easy			X	X	X	X	X	X	X
Fairly easy	X	X							
not easy at all									

Segment #	I1	I2	I3	I4	I5	I6	I7	I8	I9
Are/Street	91 AVE	90 AVE	89 AVE	88 AVE	87 AVE	86 AVE	85 AVE	84 AVE	83 AVE
Types of building/features	Mixed residential	Mixed residential	Mixed residential, mixed commercial	Mixed residential	Mixed residential	Mixed residential	Mixed residential	SDHs	Mixed residential
Q1 B:									
Predominant buildings/features	SDHs	SDHs	Mixed residential	Mixed residential	Mixed residential	Mixed residential	Mixed residential	SDHs	SDHs
Q1 C:									
Predominant buildings/features Same Both Sides (Y/N)	Y	Y	N	Y	Y	Y	Y	Y	N
Section A: Walking and Cycling Paths									
Q2: Path Type									
Footpath	X	X	X	X	X	X	X	X	X
Shared path with markings									
Shared path with no markings									
Q3: Path Location									
next to the road street								X	
within 1m of curb									X
1-2m of curb	X	X	X	X					
2-3m of curb					X	X	X		
Q4: Path Material									
continuous concrete/concrete slabs/paving bricks/gravel/balms/grass/under repair	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete
Q5: Path Slope									
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Q6: Path Condition and Smoothness									
poor									
moderate								X	
good	X	X	X	X	X	X	X		X

Segment #	I1	I2	I3	I4	I5	I6	I7	I8	I9
path through park									
Q16: Type of Crossings									
Marked crossing	X	X	X	X	X	X	X	X	X
Traffic Signals						X			X
bridge/overpass									
underpass									
Q17: Crossing Aids									
median refuge and traffic island									
kerb extension									
Q18: Presence of Streetlights (if no go to Q20)									
Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q19: Does the lighting cover the path area?									
Y/N	N	N	N	N	N	N	N	N	N
Q20: Any destinations present in segment (if No got to Q 23)									
Y/N	N	N	N	N	N	N	N	N	N
Q21: Number of car parking facilities at destinations									
0									
1-20									
21-50									
51-70									
71-100									
Q22: Bike parking facilities									
Bike lockers/closures/ U Racks/Rack	None	None	None	None	None	None	None	None	None
Q23: Driveway crossovers									
Most buildings have one driveway									
.5 of buildings have one driveway									
.25 buildings have one driveway									
no driveways	X	X	X	X	X	X	X	X	X
Q24: Surveillance									
can be observed from more than 75% of buildings	X	X	X	X	X	X	X	X	X
can be observed from between 50-74% of buildings									

Segment #	I1	I2	I3	I4	I5	I6	I7	I8	I9
under repair									
Q7: Permanent Path Obstructions poles/tables/chairs/signs/home	None	None	None	None	None	None	None	None	None
Section B: Street Assessment									
Q8: Lane Type									
on-road cycle lane that has been marked									X
on-road cycle lane with no markings									
No lane	X	X	X	X	X	X	X	X	X
Q9: Slope of Street/Road									
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Q10: Street/Road Condition									
poor									
moderate									X
good	X	X	X	X	X	X	X	X	X
under repair									
Q11: Number of lanes on the street/road									
total number of traffic lanes (i.e. 1, 2, etc.)	2	2	2	2	2	2	2	2	2
Q12: Vehicle parking restriction/signs									
no parking allowed									
parking allowed	X	X	X	X	X	X	X	X	X
Q13: Kerb Type									
mountable	X	X	X	X	X	X	X	X	X
non-mountable									
no kerb									
Q14: Traffic Control Devices roundabouts/ramps/desped/humps/lane narrowing/chicanes/none	None	None	None	None	None	None	None	None	None
Q15: Other Routes Available									
Lane	X	X	X	X	X	X	X	X	X
cul-de-sacho through road									

Segment #	I1	I2	I3	I4	I5	I6	I7	I8	I9
can be observed from less than 50% of buildings									
Not applicable									
Q25: Yard Maintenance									
More than 75% well maintained	X	X		X	X	X	X		
Between 50-74% well maintained			X						
Less than 50% maintained								X	X
Q26: Sidewalk Maintenance (know/ice coverage)									
More than 75% well maintained			X	X	X	X	X		
Between 50-74% well maintained	X	X							
Less than 50% maintained								X	X
not applicable									
Q27: Number of verge trees									
1 or more trees per house block									
1 tree for every 2 house blocks	X	X		X				X	
3 or more trees per house blocks			X		X	X	X		X
no trees at all									
Q 28: Average height of the trees									
Small									
Medium									
Large	X	X	X	X	X	X	X	X	X
Q29: Cleanliness									
Yes, lots	X	X	X	X	X	X	X	X	X
Yes, some									
Q30: Types of views									
urban/commercial/water/tended nature/nature	Urban	Urban	Urban	Urban	Urban	Urban	Urban	Urban	Urban
Q31: How alike building designs									
all are similar								X	X
range of different designs	X	X	X	X	X	X	X		
not applicable									
Q32: How attractive would you rate this segment for walking									
Very attractive			X	X		X			X

Attractive	X	X			X		X		X
Not attractive at all									
Segment #	I1	I2	I3	I4	I5	I6	I7	I8	I9
Q33: How physically difficult would you rate this segment for walking?									
Easy	X	X	X	X	X	X	X		X
Moderate								X	
Difficult									
Very Difficult									
Q34: How attractive would you rate this segment for cycling?									
Very attractive	X	X	X	X	X	X	X	X	X
Attractive									
Not attractive at all									
How physically difficult would you rate this segment for cycling?									
Easy	X	X	X	X	X	X	X	X	X
Moderate									
Difficult									
Very Difficult									
Section C: Overall Assessment									
Q36: Continuity of the path									
Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q37: Neighbourhood Legibility									
Very Easy	X	X	X	X	X	X	X		X
Fairly easy								X	
not easy at all									
Additional Notes:									

Very poor snow clearance on 84 ave - saw an elderly man struggling with his walker

poles/stables/chairs/signs/none	None	None	None	None	None	None	None	None	None
Segment #	J1	J2	J3	J4	J5	J6	J7	J8	
Section B: Street Assessment									
Q8: Lane Type									
on-road/cycle lane that has been marked									
on-road/cycle lane with no markings									
No lane	X	X	X	X	X	X	X	X	
Q9: Slope of Street/Road									
flat/gentle/moderate/steep slope	Flat	Steep	Moderate	Moderate	Flat	Flat	Flat	Flat	
Q10: Street/Road Condition									
poor				X					
moderate		X	X			X	X	X	X
good	X				X				
under repair									
Q11: Number of lanes on the street/road									
total number of traffic lanes (i.e. 1, 2, etc.)	2	2	2	2	2	2	2	2	2
Q12: Vehicle parking restriction signs									
no parking allowed					X(Side)	X(Side)	X(Side)	X(Side)	
parking allowed	X	X	X	X	X(Side)	X(Side)	X(Side)	X(Side)	
Q13: Kerb Type									
mountable	X (at intersection)				X	X	X	X	
non-mountable		X	X						
no kerb									
Q14: Traffic Control Devices									
roundabouts/ramps&speed humps/lane narrowing/chicanes/none									
Q15: Other Routes Available									
Lane	X	X	X	X	X		X	X	
cul-de-sach through road							X		

Segment #	J1	J2	J3	J4	J5	J6	J7	J8
Ave/Street	96 AVE	98A AVE	93 AVE	92 AVE	91 AVE	90 AVE	89 AVE	88 AVE
Q1 A: Types of building features	SDHs	SDHs	SDHs	SDHs	SDHs, low rise apartments	SDHs, low rise apartments	Offices, mixed residential	Mixed residential, low rise apartments
Q1 B: Predominant buildings/features	SDHs	SDHs	SDHs	SDHs	SDHs	SDHs	SDHs, Offices	SDHs
Q1 C: Predominant buildings/features - Same Both Sides (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y
Section A: Walking and Cycling - Paths								
Q2: Path Type								
Footpath	X	X	X	X	X	X	X	X
Shared path with markings								
Shared path with no markings								
Q3: Path Location								
next to the road street	X	X	X					
within 1m of curb								
1-3m of curb				X		X	X	X
2-3m of curb								
Q4: Path Material								
continuous concrete/concrete slabs/paving	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
bricks/grovel/bulmes/grass/under repair	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete
Q5: Path Slope								
flat/gentle/moderate/steep slope	Flat	Steep	Moderate	Moderate	Flat	Flat	Flat	Flat
Q6: Path Condition and Smoothness								
poor				X				
moderate		X	X					X
good	X					X	X	
under repair								
Q7: Permanent Path Obstructions								

path through park									
Segment #	J1	J2	J3	J4	J5	J6	J7	J8	
Q16: Type of Crossings									
Marked crossing									
Traffic Signals									
bridge/overpass						X (arterials)	X (arterials)	X (B9 street)	
underpass									
Q17: Crossing Aids									
median refuge and traffic island									
kerb extension									
Q18: Presence of Streetlights (if no go to Q20)									
Y/N	Y	Y	Y	Y	Y	Y	Y	Y	
Q19: Does the lighting cover the path area?									
Y/N	N	N	N	N	N	N	N	N	
Q20: Any destinations present in segment (if No go to Q 23)									
Y/N	river valley	museum	N	Y	N	N	Y	N	
Q21: Number of car parking facilities at destinations									
0									
1-20									
21-50	X	X	X						
51-70									
71-100									
Q22: Bike parking facilities									
Bike locker&enclosure U Rails/Rack	None	None	None	None	None	None	None	None	
Q23: Driveway crossovers									
Most buildings have one driveway	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	
.5 of buildings have one driveway									
.25 buildings have one driveway									
no driveways									
Q24: Surveillance									
can be observed from more than 75% of buildings							X	X	

can be observed from between 50-74% of buildings can be observed from less than 50% of buildings	X	X	X	X	X	X	X		
Not Applicable									
Segment #	J1	J2	J3	J4	J5	J6	J7	J8	
Q25: Yard Maintenance									
More than 75% well maintained	X		X	X	X	X	X	X	
Between 50-74% well maintained		X							
Less than 50% well maintained									
not applicable									
Q26: Sidewalk Maintenance (snow/ice coverage)									
More than 75% well maintained						X			
Between 50-74% well maintained							X	X	
Less than 50% well maintained	X	X	X	X	X				
not applicable									
Q27: Number of verge trees									
1 or more trees per house block									
1 tree for every 2 house blocks		X							
3 or more trees per house blocks				X	X	X	X	X	
no trees at all	X		X						
Q 28: Average height of the trees									
Small									
Medium	X					X			
Large		X	X	X	X	X	X	X	
Q29: Cleanliness									
Yes, lots	X	X	X	X	X	X	X	X	
Yes, some									
none or almost none									
Q30: Types of views									
urban/commercial/water/tended nature/nature	Urban/nature	Urban/nature	Urban/nature	Urban/nature	Urban	Urban	Urban	Urban	
Q31: How alike building designs all are similar									

Segment #	J9	J10	J11	J12	J13	K1	K2	K3	K4	K5
Ave/Street	87 AVE	86 AVE	85 AVE	84 AVE	83 AVE	93 AVE	90 AVE	89 AVE	88 AVE	87 AVE
Q1 A: Types of building/features	SDH, low rise apartments	Mixed residential, lowrise apartments	Small commercial, lowrise apartments, mixed residential	Church, low rise apartments	Low rise apartments, mixed residential	SDHs, mixed residential	SDHs	SDHs, low rise apartments	SDHs	SDHs
Q1 B: Predominant buildings/features	SDHs	SDHs	SDHs	SDHs	SDHs	mixed residential	mixed residential	mixed residential	mixed residential	mixed residential
Q1 C: Predominant buildings/features Same Both Sides (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Section A: Walking and Cycling Paths										
Q2: Path Type										
Footpath	X	X	X	X	X	X	X	X	X	X
Shared path with markings										
Shared path with no markings										
Q3: Path Location										
next to the road street		X								
within 1m of curb	X		X	X	X	X	X	X	X	X
1-2m of curb										
2-3m of curb										
Q4: Path Material										
continuous concrete/concrete slabs/paving bricks/gravel/balunen/grass/under repair	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete
Q5: Path Slope										
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Moderate	Moderate	Moderate	Moderate	Moderate
Q6: Path Condition and Smoothness										

range of different designs	X	X	X	X	X	X	X	X	X
not applicable									
Segment #	J1	J2	J3	J4	J5	J6	J7	J8	
Q32: How attractive would you rate this segment for walking									
Very attractive									
Attractive	X	X	X	X	X	X	X	X	X
Not attractive at all									
Q33: How physically difficult would you rate this segment for walking?									
Easy						X	X	X	X
Moderate/Difficult	X	X		X					
Very Difficult			X						
Q34: How attractive would you rate this segment for cycling?									
Very attractive						X	X	X	X
Attractive	X		X	X					
Not attractive at all		X							
Q35: How physically difficult would you rate this segment for cycling?									
Easy						X	X	X	X
Moderate/Difficult	X		X	X	X				
Very Difficult		X							
Section C: Overall Assessment									
Q36: Continuity of the path									
Y/N	N	N	N	N	N	Y	Y	Y	Y
Q37: Neighbourhood Legibility									
Fairly easy	X					X	X	X	X
not easy at all		X	X	X	X				
Additional Notes:									

poor	X	X	X	X		X	X	X	X	X
moderate					X					
good										
under repair										
Segment #	J9	J10	J11	J12	J13	K1	K2	K3	K4	K5
Q7: Permanent Path Obstructions poles/tables&chairs/signs/none	None	None	None	None	None	None	None	None	None	None
Section B: Street Assessment										
Q8: Lane Type										
on-road cycle lane that has been marked										
on-road cycle lane with no markings										
No lane	X	X	X	X	X	X	X	X	X	X
Q9: Slope of Street/Road										
flat/gentle/moderate/steep slope	Flat	Flat	Flat	Flat	Flat	Moderate	Moderate	Moderate	Moderate	Moderate
Q10: Street/Road Condition										
poor	X	X	X	X		X	X	X	X	X
moderate										
good					X					
under repair										
Q11: Number of lanes on the street/road										
total number of traffic lanes (i.e. 1, 2, etc.)	2	2	2	2	2	2	2	2	2	2
Q12: Vehicle parking restriction signs										
no parking allowed	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X	X	X	X	X
parking allowed	X(1Side)	X(1Side)	X(1Side)	X(1Side)	X(1Side)					
Q13: Kerb Type										
mountable	X	X	X	X	X	X (at intersections)	X (at intersections)	X (at intersections)	X (at intersections)	X (at intersections)
non-mountable										
no kerbs										
Q14: Traffic Control Devices										
roundabouts/ramps/speed humps/lane narrowing/chicanes/stone	None	None	None	None	None	None	None	None	None	None
Q15: Other Routes Available										

Lane	X	X		X	X	X	X	X	X	X
cul-de-sach through road path through park						X (east end)	X (east end)	X (east end)	X (east end)	
Segment #	J9	J10	J11	J12	J13	K1	K2	K3	K4	K5
Q16: Type of Crossings										
Marked crossing										
Traffic Signals	Only on 99		only on 99			99 street only				
bridge/overpass										
underpass										
Q17: Crossing Aids										
median refuge and traffic island										
keeb extension										
Q18: Presence of Streetlights (if no go to Q20)										
YN	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q19: Does the lighting cover the path areas?	N	N	N	N	N	N	N	N	N	N
YN	N	N	N	N	N	N	N	N	N	N
Q20: Any destinations present in segment (if No got to Q 23)										
YN	N	N	N	N	Y	N	N	N	N	N
Q21: Number of car parking facilities at destinations										
0										
1-20				X						
21-50										
51-70						X	X	X	X	X
71-100										
Q22: Bike parking facilities										
Bike locker&enclosure / U Rails/Rack	None	None	None	None	None	None	None	None	None	None
Q23: Driveway crossovers										
Most buildings have one driveway	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)	X (alley)
.5 of buildings have one driveway										
.25 buildings have one driveway										
no driveways										

Q32: How attractive would you rate this segment for walking										
Very attractive	X		X	X	X					
Attractive		X				X	X	X	X	X
Not attractive at all										
Segment #	J9	J10	J11	J12	J13	K1	K2	K3	K4	K5
Q33: How physically difficult would you rate this segment for walking?										
Easy	X	X	X	X	X					
Moderate Difficult							X	X	X	X
Very Difficult										
Q34: How attractive would you rate this segment for cycling?										
Very attractive	X		X	X	X					
Attractive		X				X	X	X	X	X
Not attractive at all										
How physically difficult would you rate this segment for cycling?										
Easy	X	X	X	X	X					
Moderate Difficult							X	X	X	X
Very Difficult										
Section C: Overall Assessment										
Q36: Continuity of the path	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
YN										
Q37: Neighbourhood Legibility										
Very Easy	X	X	X	X	X					
Fairly easy							X	X	X	X
not easy at all										

Q24: Surveillance										
can be observed from more than 75% of buildings	X	X	X	X	X	X	X	X	X	X
can be observed from between 50-74% of buildings										
can be observed from less than 50% of buildings	J9	J10	J11	J12	J13	K1	K2	K3	K4	K5
Segment #										
Q25: Yard Maintenance										
More than 75% well maintained	X	X	X	X						
Between 50-74% well maintained					X	X	X	X	X	X
Less than 50% maintained										
not applicable										
Q26: Sidewalk Maintenance (snow/ice coverage)										
More than 75% well maintained										
Between 50-74% well maintained	X	X	X	X	X					
Less than 50% maintained										
Q27: Number of verge trees										
1 or more trees per house block	X	X		X	X				X	X
1 tree for every 2 house blocks										
3 or more trees per house blocks										
no trees at all									X	
Q28: Average height of the trees										
Small										
Medium		X								X
Large	X		X	X	X	X	X	X	X	X
Q29: Cleanliness										
Yes, lots	X	X	X	X	X	X	X	X	X	X
Yes, some									X	X
Q30: Types of views										
urban/commercial/water/ended nature/nature	Urban	Urban	Urban	Urban	Urban	Nature	Nature/urban	Nature/urban	Nature/urban	Nature/urban
Q31: How alike building designs are										
all are similar	X	X	X	X						
range of different designs										
not applicable										

Segment #	K6	K7	K8	K9	L1	L2	L3	L4	L5
Ave/Street	86 AVE	85 AVE	84 AVE	83 AVE	87 AVE	86 AVE	85 AVE	84 AVE	83 AVE
Q1 A: Types of building/features	SDHs	Mixed residential	Mixed residential	Mixed residential	Mixed residential, rane	Mixed residential	Mixed residential	Mixed residential	Mixed residential
Q1 B: Predominant buildings/features	mixed residential	SDHs	SDHs	SDHs	SDHs, mature trees	SDHs	SDHs	SDHs, infill	SDHs
Q1 C: Predominant buildings/features Same Both Sides (YN)	Y	Y	Y	Y	N	Y	Y	Y	Y
Section A: Walking and Cycling Paths									
Q2: Path Type									
Footpath	X	X	X		X	X	X	X	
Shared path with markings				X					X (bike paths)
Shared path with no markings					X (into ravine)				
Q3: Path Location									
next to the road street						X			X
within 1m of curb								X	
1-2m of curb	X		X	X	X				
2-3m of curb							X		
Q4: Path Material									
continuous concrete/concrete slabs/paving bricks/gravel/turf/grass/under repair	Continuous Concrete	Continuous concrete	Continuous concrete	Continuous concrete	Continuous concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete	Continuous Concrete
Q5: Path Slope									
flat/gentle/moderate/steep slope	Moderate	Flat	Flat	Flat	Gentle	Flat	Flat	Flat/Steep	Flat
Q6: Path Condition and Smoothness									
poor									
moderate	X	X						X	

Appendix C

Focus Group: Summary of Concerns

Concern	Description	Design Suggestion
Bike lanes	<ul style="list-style-type: none"> - 83 street will be great when finished but not far enough north. Bike lane further north would allow everyone to gain access 	<ul style="list-style-type: none"> - Bike lane or boulevard on 87 or 86 street with heavy traffic calming measures - Bike lanes should to continuous and seamless, not disrupted by curb extensions - Bike lane on utility corridor (CN land)
Cross walks	<ul style="list-style-type: none"> - Crosswalks across North Saskatchewan Drive are extremely dangerous (specifically Tommy Banks Way, 100 street, 101 street, 91 Avenue) - Connectivity from multi use trails to the crosswalks are confusing (specifically 101 and 100 Street) - Good crosswalk at 104th Street and 86 Ave 	<ul style="list-style-type: none"> - New crossing design a North Saskatchewan Drive - Having more mid-block crosswalks and more marked crosswalks
Lack of infrastructure	<ul style="list-style-type: none"> - no sidewalk on one side of the street 	<ul style="list-style-type: none"> - increasing connectivity of neighbourhood by adding sidewalks to both sides
Poor condition of infrastructure	<ul style="list-style-type: none"> - 101 street is very rough for both drivers and pedestrians - 91 avenue stairs would be used more and improve accessibility/mobility if upgraded - Poor sidewalk condition feels dangerous to seniors, especially if snow is not cleared - Poor sidewalk condition along North Saskatchewan Drive 	<ul style="list-style-type: none"> - paving will occur during neighbourhood renewal - Promote neighbourhood snow clearance
Speed on residential streets due to	<ul style="list-style-type: none"> - On 100 street there have been many hit and runs due 	<ul style="list-style-type: none"> - Speed bumps/ Speed tables - Curb extensions on entrance

short cutting	<p>to high traffic and speeds</p> <ul style="list-style-type: none"> - Drivers use 100 street and 98 street in order to avoid using 99 street - “design for lower speeds rather than lowering speed limits” - Due to 83 street redesign, 84 street is going to have increased traffic volumes - Driver cut through 101st Street 	<p>into neighbourhood to signal to drivers you are entering residential neighbourhood</p> <ul style="list-style-type: none"> - Signage can be improved - Traffic circles on 102 street to slow traffic - Every intersection should have combination of neck downs, enhanced crosswalks, and curb extensions/bulbouts - Closing 83 Avenue between 102 street and Gateway, only allowing commercial access.
Careless driver awareness	<ul style="list-style-type: none"> - on 100 street vehicles park in front and in intersection which results in lack of visibility for drivers turning and pedestrians crossing - Drivers on 84th Ave between 104th and 105th Street often travel in wrong direction on one way street - Poor visibility of stop signs on 86th avenue and 100 Street 	<ul style="list-style-type: none"> - neck downs to restrict drivers from parking close to intersections - Open 84th Avenue between 105th and 106th to traffic in both directions
Street Furniture	<ul style="list-style-type: none"> - no garbage cans within neighbourhood to enable people to pick-up unwanted garbage (increase the cleanliness of the neighbourhood) - Too few places to sit for seniors, especially in parks (MacIntyre Park in particular) 	<ul style="list-style-type: none"> - curb extensions could be used for street furniture “Curb extensions would be better used by people than giving room for the car” - Additional seating for seniors in parks and throughout neighbourhood
Lighting	<ul style="list-style-type: none"> - current lighting illuminates the cars, it is more important to have the paths illuminated - seniors are afraid to walk neighbourhood at night - North Saskatchewan Drive path lacks lighting 	<ul style="list-style-type: none"> - Lighting on all pathways to be improved - Strathcona would lean towards the historical design lighting
Lack of public	<ul style="list-style-type: none"> - Tubby Park is great park for 	<ul style="list-style-type: none"> - Use dead of streets such as

spaces	kids, it would be great have more spaces like this	88 Avenue to create Woonerf (public place at grade for kids)
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Figure 10: Google Maps

Figure 12: Google Maps

Figure 23: Google Maps

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