

IDEA THREE



Walkable City

Cover Image: EDA Collaborative Inc.



THIS SCENARIO EXPLORES THE OUTCOMES OF
EDMONTON BECOMING A WALKABLE CITY WITH
PEDESTRIAN FRIENDLY
NEIGHBOURHOODS AND WALKABLE
GEOGRAPHIC AREAS.



(Photo Credit: EDA Collaborative Inc.)

Whyte Ave in Old Strathcona has a high quality streetscape and interesting street level retail. The surrounding area also has a walkable grid street system and a mix of uses. It is one of Edmonton's most 'walkable' areas.

BEFORE THE MID-1900s, URBAN
NEIGHBOURHOODS FOCUSED ON THE
PEDESTRIAN. THEY WERE DESIGNED TO MOVE
PEOPLE TO THEIR DESTINATIONS BY FOOT.
IN THE PAST FIFTY YEARS, DISPERSED
DEVELOPMENT PATTERNS AND SEPARATION
OF LAND USES BASED ON INCREASED CAR
USE HAVE LED TO AN ELIMINATION OF MANY
CHARACTERISTICS OF WALKABLE
COMMUNITIES. (2)

1.0 INTRODUCTION

Making Edmonton walkable requires changing walking from a recreation mode to a practical transportation alternative for accessing everyday destinations such as workplaces, shopping and community facilities.

The major elements for a successful Walkable City are a high building and population density, mixed land use, a quality public transport system, and high-quality public spaces. (1)

Smart Choice benefits of promoting walkability

Walkable communities are integral to achieving the goals of *Smart Choices* because they enhance mobility, reduce negative environmental consequences, strengthen local economies, and support stronger communities through improved social interaction. (2) Communities can be built so walking is more of a viable alternative.

Promoting walkability has many benefits related to the Smart Choices fundamentals:

OPTIONS

- provides a viable transportation alternative for local trips
- walkable neighbourhoods provide a range of pedestrian routes

VITALITY

- improved health for individuals and the related economic benefits

VIABILITY

- reduced car use and the related environmental and economic benefits
- improved sense of community and safety of public realm
- increased use of public transport; and
- contribution to sprawl reduction

ACCESS

- improves access to local facilities and services for all people

Walkability and location efficiency

Location efficiency is based on providing choice in dwelling types, environments and transportation. Walking is an alternative transportation mode. Location efficient neighbourhoods offer a wider choice and range of services than traditional settlement patterns and development forms.

Even studies casting doubt on the ability of traditional neighbourhood design to significantly reduce driving for shopping purposes (3) find that residents of walkable neighbourhoods with nearby retail value the option to walk and have chosen their residence in part because they want that option.

EASE OF ACCESS TO DAILY NEEDS IS AN IMPORTANT PRINCIPLE FOR CREATING LIVABLE NEIGHBOURHOODS.

NEIGHBOURHOODS SHOULD BE BASED ON STREET LAYOUTS THAT ALLOW MOST RESIDENTS TO LIVE WITHIN WALKING DISTANCE OF THE NEIGHBOURHOOD'S CENTRE.

WALKABILITY DEMANDS BOTH A CONDUCTIVE STREET PATTERN AND A SENSIBLE ARRANGEMENT OF USES. (4)



(Photo Credit: EDA Collaborative Inc.)

Quality streetscapes can increase comfort and safety of users through incorporation of street trees and on street parking

THE PROVISION OF SIDEWALKS ALONE IS NOT ENOUGH TO MAKE AN AREA WALKABLE.

2.0 DISCUSSION

Ingredients for walkable neighbourhoods

Ingredients for creating or enhancing neighbourhoods to promote walking include:

NEIGHBOURHOOD PLANNING

- a mix of land uses to bring homes closer to workplaces and shopping (5)
- adequate density to support mixed use
- rectilinear or grid patterns to interconnect streets (6)
- good access to public transit
- many links between neighbourhoods giving people a choice of routes from their homes to services and attractions (7)
- accessible parks to encourage pedestrian activity and social contact (4)

STREETSCAPES

- a high-quality pedestrian environment, with active building frontages, attractive paving, seating and lighting (8)
- trees as shade and separation from traffic
- public art to enhance the pedestrian experience
- low-speed streets with narrow intersections (7)
- regular, safe street crossings
- on-street parking to slow traffic and shield pedestrians (6)
- sidewalks on both sides of the street in most locations (6)
- curbs to deter parking on sidewalks (6)
- quality infrastructure such as sidewalks and ramps
- appropriate gradient and universal accessibility
- directional and interpretive signs
- activities which make walking interesting such as outdoor dining and street performers
- underground utilities

SITE AND BUILDING DESIGNS

- attractive buildings facing the street to provide interest and a sense of safety for the pedestrian, avoid blank walls along pedestrian circulation areas
- adjoining buildings for casual surveillance of the public realm from ground level and higher stories, incorporating a mix of uses helps provide around the clock activity
- parking located behind buildings with access to them through laneways, minimize driveways on the street front (6)
- minimal use of drive-thru services
- well screened waste storage areas

PATHWAY NETWORK PLANNING AND DESIGN

- high-quality walking facilities that link major destinations such as schools, shops, workplaces and public facilities
- pedestrian access between parking lots and store entrances
- generous sidewalks with adequate lighting
- walkways accessible to people with disabilities (8)
- pedestrian priority at signaled crossings

ASSOCIATED PEDESTRIAN FACILITIES

- shade and shelter for transit users
- gathering spaces and seating nodes along pedestrian routes
- clear directional signage
- interpretive signage where appropriate
- walkways that are cleared of snow in winter

Barriers to walkability

The following factors are barriers to walkability:

- Poor image of walking in relation to car-driver status
- Long distances to destinations due to lack of connectivity in street systems
- Perception of danger from traffic
- Unfavorable weather conditions
- Separation of communities by major arterial roads and railways
- Perception of reduced personal safety on streets, particularly after dark
- Poor links with public transport
- Poor quality or lack of sidewalks
- Poor site planning for pedestrian access to public buildings and businesses
- Steep slopes

RELATIONSHIP BETWEEN WALKABILITY AND PUBLIC TRANSIT

Efficient and safe pedestrian access makes walking to public transport nodes more attractive. Many sources suggest that transit nodes or bus stops should be provided within a five minute, 400 to 500 metre, walking distance of all homes, businesses and community facilities. For more substantial transit nodes, a walking distance of up to one kilometer could be a reasonable walkable catchment area.

For existing neighbourhoods, the walkable catchment from transit nodes defines the priority area in which to focus increased mixed use density and improved pedestrian facilities.



(Photo Credit: EDA Collaborative Inc.)

The design of some arterial roadways does not facilitate walkability. Berming and fencing along arterials are major pedestrian barriers.



(Photo Credit: EDA Collaborative Inc.)

The design of this arterial road business does not encourage pedestrian access.



(Photo Credit: EDA Collaborative Inc.)

Buildings should have active street frontages. Blank walls make the street unattractive and less safe for pedestrians.



(Photo Credit: EDA Collaborative Inc.)

Pedestrian facilities and wayfinding combined with heritage, or interpretive features make the pedestrian experience and locality more interesting.



(Photo Credit: EDA Collaborative Inc.)

The climate of a 'winter city' can be a major barrier to walkability.



(Photo Credit: EDA Collaborative Inc.)

Development backing onto arterial roads and lack of cross streets reduces connectivity.



(Photo Credit: EDA Collaborative Inc.)

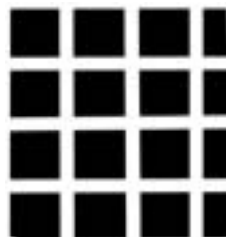
Major arterial roads can become a major barrier to pedestrian movement between neighbourhoods.

3.0 FITTING WALKABILITY INTO EDMONTON

Edmonton generally has some very positive characteristics for pedestrians in terms of its relatively flat terrain and concentric nature of its urban development. One of the major positives for walkability, a grid street system, is common in Edmonton. This is discussed later in more detail. The following include some of the local factors which affect walkability.

MAJOR LOCAL BARRIERS TO WALKABILITY

- The river valley and associated ravines are major physical barriers between the north and south sides of the river due to the steep slopes and limited number of crossings.
- Freeways, such as Whitemud Drive, Terwillegar Drive and the Yellowhead Trail prevent pedestrian crossing except at a limited number of locations.
- Arterial roadways, such as 111 Street south of Whitemud Drive, with bermed boulevards and residential development backing onto them restrict access between communities.
- Rail corridors severely restrict pedestrian travel between neighbourhoods.
- The winter climate makes walking less comfortable and less safe. Ice and snow on pathways is a deterrent to walking.
- The relatively low density of development in newer parts of the city and large size of roadways means that the walking distance between housing and services is often long.
- The configuration of streets in newer neighbourhoods and fencing of lots which back onto arterial roads make walking trips considerably longer. This situation also makes the walking experience along the arterial road less attractive and less safe because there is less casual surveillance from residences.
- There are limited numbers of street links from new subdivisions to arterial roads as these areas focus on single 'estate' entries.
- There is poor provision for pedestrians in the site planning of parking lots and retail areas. Storage of snow on site often becomes a seasonal pedestrian barrier.



(Image Credit: CMHC)

Gridiron street pattern, circa 1900

ANALYSIS OF EDMONTON STREET SYSTEMS

The street pattern of a neighbourhood has a major influence on its walkability by affecting the distance people have to walk to access services and affecting their *choice* of routes. A variety of street patterns have been used and developed over the last 100 years. The evolution of street patterns generally portrays increased discontinuity, reduced connectivity and increased adaptation to the car. (4).

The following discussion reviews the positive and negative past development patterns in Edmonton in relation to walkability.



(Image Credit: CMHC)

Fragmented parallel, circa 1950

TRADITIONAL TOWN CENTRES AND INNER CITY FRINGE

The majority of the downtown core, Old Strathcona and adjoining neighbourhoods were laid out using a **grid** pattern with minor modifications to accommodate geographic barriers such as the river valley and ravines.

A number of significant radial streets, such as Fort Road, Kingsway and St. Albert Trail, transverse this grid. They reflected major historical travel routes and create an interesting 'dynamic' against the **grid**.



(Image Credit: CMHC)

Warped parallel street pattern, circa 1960

The structure of Edmonton's older precincts provides good connectivity for walking. These neighbourhoods generally have a diverse mix of land uses. Grid systems with a mix of uses provide good walkability.

The 'fringe' to the inner-city, including suburbs such as Parkview and Idylwyld, supports primarily residential land uses based around **fragmented parallel** street patterning. This is still relatively efficient for pedestrians, although the longer block lengths and offset streets increase the length of many trips. Laneways are still generally found in these neighbourhoods.



(Image Credit: CMHC)

Loops and lollipops, circa 1970

MATURE SUBURBS

Mature neighbourhoods with **warped parallel** street patterns on the outskirts of the inner-city still have residences and businesses fronting the streets, including arterials. This is often achieved with service roads, as evident along 106 Avenue in Capilano and 137 Avenue in Londonderry. They also have streets lining open space, so houses fronting the streets overlook the parkland.

Walkability in these neighbourhoods is somewhat less efficient because of the curving streets, longer blocks, offset streets and lack of mixed use.



(Image Credit: CMHC)

Lollipops on a stick, circa 1980

NEWER SUBURBS

The **loop** street pattern has been extensively used throughout newer parts of Edmonton, particularly in many neighbourhoods in Millwoods. This layout still incorporates multiple access points into the neighbourhood yet often has development backing onto arterial roadways, making them pedestrian hostile. There is a strong reliance on narrow pedestrian rights of way to make up for the reduced number of connecting streets. These can create safety problems.

Lollipops on a stick street patterns are typically found in the newer neighbourhoods at the edge of the city. A feature of this layout is the increased reliance on collector roads and restricted access points via ‘estate entries’ to adjoining arterial roads. This limits the options for both vehicles and pedestrians.

These neighbourhoods often have development backing onto arterial roadways, making them pedestrian hostile. The size of the arterial roadways sometimes approaches ‘freeway’ status, creating a major obstacle to the movement of vehicles and pedestrians between neighbourhoods.

The discontinuity of this street pattern inhibits pedestrian access to facilities and transit stops while their curvilinear alignment lengthens walking trips and makes them confusing. The narrow walkways provided at the end of culs-de-sac to link streets can often become safety problems. The configuration limits surveillance opportunities and escape options. Collector and arterial streets associated with this layout become inhospitable and unsafe because of their high traffic volumes, making travel on foot unpleasant and undesirable. (4)

THE CURVILINEAR STREETS OF NEWER SUBDIVISIONS HAVE BEEN FULLY ADAPTED TO THE CAR AND TRAFFIC MANAGEMENT. THIS LIMITS TRAFFIC AT THE LOCAL STREET VIA USE OF CUL-DE-SACS AND PERMITS GOOD FLOW OF TRAFFIC AT THE COLLECTOR AND ARTERIAL LEVELS. (4)

THE USE OF CUL-DE-SACS DECREASES TRAFFIC VOLUMES IN LOCAL STREETS AND OFFER THE POTENTIAL FOR GREATER SOCIABILITY, PARTICULARLY WITH REGARD TO CHILDREN'S SAFETY AND PLAY.

NEO-TRADITIONAL SUBURBS

A street pattern layout based on the fragmented and warped parallel system and incorporating new urbanism principles has been used in a number of new developments, such as Terwillegar Towne.

There are, however, a very limited number of neighbourhood access points. This system may increase connectivity within the neighbourhood but does not facilitate linkage to adjoining neighbourhoods.



(Photo Credit: City of Edmonton)

Cul-de-sacs increase pedestrian travel distance. Friends in these adjoining culs-de-sac would have a long walk via the street system to visit each other.



(Photo Credit: EDA Collaborative Inc.)

Even though they often have quality pedestrian facilities, residential estate entries limit the points of entry and exit for cars and pedestrians, restricting movement between neighbourhoods.

4.0 IMPLEMENTATION

The following is a list of strategies and actions which the City of Edmonton could consider to promote walkability:

POLICY AND PLANNING

- Adopt a Walkability 'policy' for new development.
- Prepare a citywide master plan for pedestrian facilities, creating a hierarchy of routes and facilities. Utilize the linkage priorities identified in the Application section of this chapter.
- Prepare local area linkage plans for existing and new neighbourhoods to determine where the primary pedestrian routes should be. Prioritize development and/or replacement of pedestrian facilities and funding based on this plan. The outcome may include a range of pedestrian facilities to suit the local demand.
- Plan mixed use intensification for the areas of the city with the most potential, as suggested in the Application section of this chapter.
- Consider application of the Pedestrian Commercial Shopping Street Overlay to more commercial districts of the city. This development guide has many of the requirements to improve walkability.



(Photos Credit: EDA Collaborative Inc.)

Edmonton's Retail and Commercial Façade and Storefront Improvement Program is improving the streetscapes of the downtown.



(Photos Credit: EDA Collaborative Inc.)

Edmonton's Pedestrian Commercial Shopping Street Overlay provides good controls for the promotion of pedestrian oriented development

URBAN DESIGN

- Design guidelines. Develop pedestrian planning, design and maintenance guidelines to promote pedestrian mobility. Integrate these with roadway design guidelines for use with both City and private development projects. Reconsider the function of arterial roads; their mixed use potential should be maximized and pedestrian friendliness improved.
- Subdivision design should not allow residences to back onto arterials.
- Avoid unsafe walkways at the ends of culs-de-sac. Use an interconnected street system instead.
- Require that commercial and public building site plans are walkable. (2)
- Provide access for people with disabilities to sidewalks, streets, parks and major services. (2)

FINANCING AND LAND ACQUISITION

- Consider developing contribution plans so that all development contributes towards walkability infrastructure.
- Provide for pocket or neighbourhood parks as part of new development. Dedicate new public right-of-ways and parklands to bridge gaps in pedestrian network. (11)
- May be necessary to fund a substantial amount of upgraded pedestrian facilities through local improvement charges and general taxation.
- Consider application of the Retail and Commercial Façade and Storefront Improvement Program to other commercial districts.

EDUCATION ACTIVITIES

- Events and actions. Initiate activities to promote demonstration projects and increase walking.

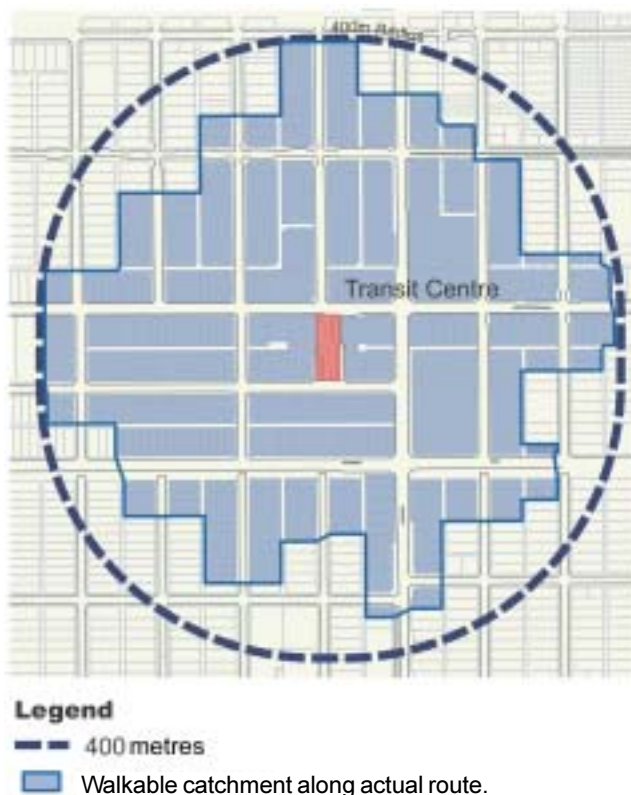
Walkable catchments and Pedsheds: A planning tool

It is generally accepted that a typical pedestrian could walk between 400 and 500 metres in five minutes. This distance needs to be measured along the actual route and not 'as the crow flies'. A larger walkable catchment is often used for larger urban centers or major public transport nodes such as railway stations. This size of this catchment is generally based on a 10 minute walk which equates roughly 800 metres.

Walkable catchments or pedsheds measure the actual area accessible within a five to ten minute walking distance as a percentage of the theoretical or 'as the crow flies' walking distance. The analysis below gives a graphic display of an area's walkability. The resulting percentage indicates the ease of pedestrian movement through an urban area to access specific neighbourhood destinations. **Pedshed mapping can be used to analyse the walkability of existing centres to determine where to make changes to the street network, or analyse proposed street networks to help maximize walkability.** (13)

Pedsheds and Walkability

EACH OF THE DRAWINGS BELOW REPRESENTS AREAS ACCESSIBLE BY FOOT WITHIN A 400M OR 5 MINUTE WALK (BLUE SHADED AREAS). NOTE THE DIFFERENCES IN WALKABILITY OF THE 2 DEVELOPMENT PATTERNS, DESPITE BEING WITHIN THE 400M 'AS THE CROW FLIES' CATCHMENT AREA.



(Photo Credit: EDA Collaborative Inc.)

43% of the catchment around this transit node is within a 400m walk due to the well connected street system.



(Photo Credit: EDA Collaborative Inc.)

Only 25% of the catchment around this bus stop is within a 400m walk due to cul-de-sacs and fencing along the arterial.

THE MAJOR DEMAND FOR WALKABLE HOUSING ENVIRONMENTS HAS BEEN SATISFIED IN THE PAST BY OLDER NEIGHBOURHOODS BUILT BEFORE 1950, BUT THOSE OLDER ALTERNATIVES ARE BECOMING A SMALLER PROPORTION OF THE TOTAL HOUSING STOCK EACH DECADE. (12)



(Photos Credit: City of Edmonton)

The inner city neighbourhoods have good walkability ingredients and high potential for mixed use intensification.



(Photos Credit: City of Edmonton)

Mature suburbs generally have good walkable structure but lack a mix of uses and the density to support this.



(Photos Credit: City of Edmonton)

Newer suburbs with less walkable street structure and lack of mixed uses have less opportunity for change in the short term.

5.0 APPLICATION

The following summary suggests how the principles of walkability could be applied to the major precincts of Edmonton.

Traditional Town Centres

Downtown and Old Strathcona have a high density and range of uses as well as good street structure and good access to transit. The residential population of the downtown is increasing to create a better balance of uses. Pedestrian activity, especially around the fringes of the downtown, is increasing as a result. The building character downtown and its impact on the streetscape limits the pedestrian experience. Improvements to existing buildings and pedestrian facilities in this area would further enhance its walkability, as would an increase in residential use.

The Old Strathcona area is a good example of a walkable neighbourhood due to its good street structure, mix of uses, building character and quality of its streetscapes. The 'liveliness' of its streets adds another dimension to walking in this area. The area also has relatively good access to transit.

Inner-City fringe

The older parts of Edmonton are generally efficiently structured for pedestrians, with grid or rectilinear street systems. The main need in these areas is to maintain or enhance existing facilities, especially in precincts with high use and with a higher residential density. Providing a greater range of uses and improved access to transit would assist walkability.

It would be beneficial to promote walking as a transportation mode in areas with high potential for transit and existing mixed use. It would also help to improve walking facilities linking neighbourhood supermarkets and convenience stores, as these are regular, if not daily, destinations. This may in turn ensure the economic health of these local centres.

Mature suburbs

The traditional suburbs surrounding the inner-city fringe generally have reasonable street structures and access to transit. Their predominantly residential character makes them less walkable for access to services and there is often a dependence on shopping malls. There is potential to improve walkability through allowance of a greater range of uses, especially along arterial roadways, and an upgrading of pedestrian facilities to existing local services.

Newer suburbs

The newer neighbourhoods with 'spaghetti' collector roads and 'lollipop' local streets are least efficient for pedestrians. They also may be hard to retrofit considering land ownership and lack of mixed use. Walking is mostly recreational. Some newer suburbs also have limited access to transit; further restricting their walkability. The best opportunity lies with making new development mixed use and interconnected with surroundings.

Future neighbourhoods

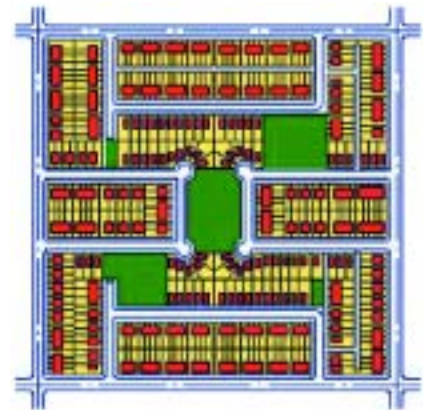
Future neighbourhoods should be planned using the principles of location efficiency and incorporating the ingredients for walkability. Some areas, such as Heritage Valley in Edmonton's south, are already attempting to apply these principles. The model for new neighbourhood street patterning developed by Canadian Mortgage and Housing Corporation may be a useful example. A more pedestrian and vehicle permeable neighbourhood structure should be considered for major transit nodes and urban centres and less vehicle permeable structures, with a mix of grid and culs-de-sac, for surroundings. This would reduce fears of increased traffic through lower density areas.

Use of pedshed analysis should help with the assessment process to determine the walkability of development proposals.

Walkability linkage priorities

The following are major linkage strategies to support the overall improvement of walkability in Edmonton. The strategies build on the city's major destinations and existing infrastructure. Priority should be given to providing new or enhanced pedestrian linkages to:

- major institutional destinations such as Grant McEwan College, University of Alberta, and large schools
- local neighbourhood centres, supermarkets and convenience stores
- LRT stations and transit nodes
- higher density residential areas, especially those within proximity of downtown and district centres
- multi-use corridors, which then provide access throughout the city
- river crossings to improve linkage between neighbourhoods and the river valley recreational facilities



Model for new neighbourhoods developed by Canadian Mortgage and Housing Corporation.

Source: CMHC



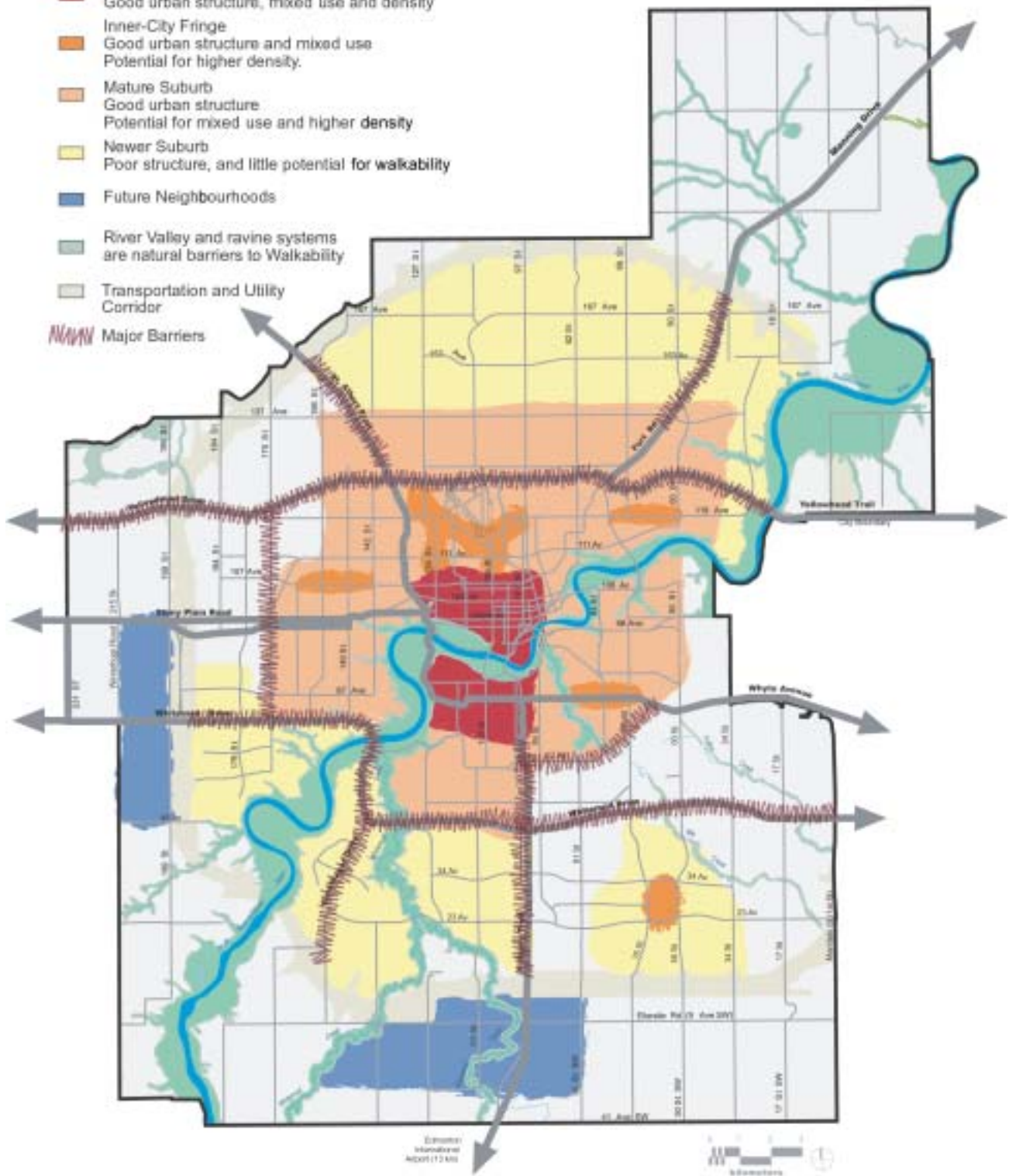
(Image Credit: City of Edmonton)

A Linkage Masterplan for the city will assist prioritisation of walkability infrastructure. This should be closely linked with planning for mixed use intensification.

Walkability Concept Map

Legend

- Traditional Town Centre
Good urban structure, mixed use and density
- Inner-City Fringe
Good urban structure and mixed use
Potential for higher density.
- Mature Suburb
Good urban structure
Potential for mixed use and higher density
- Newer Suburb
Poor structure, and little potential for walkability
- Future Neighbourhoods
- River Valley and ravine systems
are natural barriers to Walkability
- Transportation and Utility
Corridor
- Major Barriers



(image Credit: EDA Collaborative Inc.)



6.0 OUTCOMES FOR STAKEHOLDERS

| STAKEHOLDERS | POSITIVE OUTCOMES | NEGATIVE OUTCOMES |
|--------------------------------------|--|--|
| GENERAL COMMUNITY | <p>Provides increased mobility.</p> <p>Environmental benefits of possible reduced car use.</p> <p>Potential health benefits.</p> | <p>Substantial amount of required infrastructure may be difficult to fund and maintain.</p> |
| LOCAL COMMUNITIES | <p>Improved access to, and ability to fulfil daily needs.</p> <p>More employment opportunities may arise in the local community.</p> <p>Improvements to neighbourhood sociability.</p> <p>Improved access to transit.</p> <p>Affordability of transportation.</p> | <p>May be necessary to fund significant portion of upgraded pedestrian facilities through local improvement charges and general taxation.</p> |
| BUSINESS OWNERS AND EMPLOYEES | <p>Supports local businesses.</p> <p>Provides alternative access for employees.</p> <p>Improved employee health through increased walking may increase productivity.</p> | <p>Possible change in focus away from car based development may affect viability of some existing businesses.</p> <p>May be necessary to fund upgraded pedestrian facilities through local improvement charges.</p> |
| DEVELOPERS | <p>Walkable neighbourhoods are becoming increasingly marketable.</p> | <p>New planning and design requirements will require developers to follow different and possibly less certain processes.</p> <p>Developers may need to provide higher quantity and quality of pedestrian infrastructure.</p> |
| CITY | <p>Supports goals of well-being and quality of life.</p> <p>Could help to relieve potential traffic problems.</p> <p>Improved livability makes the City an attractive place for existing and new residents and supports City's viability in comparison to other cities.</p> <p>Supports use of existing transit service.</p> | <p>New planning and design policy will require staff resources and funding for infrastructure.</p> <p>Staff will need training in the new policy to ensure practical implementation.</p> |