TECHNICAL REPORT:

Transit Oriented Development Guidelines

November 2011

Prepared by the City of Edmonton
Sustainable Development and Transportation Services Departments

EXECUTIVE SUMMARY

The Way Ahead, Edmonton's Strategic Plan sets Edmonton on the course for a vibrant and sustainable future. Over time, *The Way Ahead* directs Edmonton to transform its urban form and shift its transportation modes. To help lead the City toward these goals, the following plans have been approved:

- Municipal Development Plan, *The Way We Grow*
- Transportation Master Plan, *The Way We Move*
- Environmental Strategic Plan, *The Way We Green*
- Edmonton's People Plan, *The Way We Live*

All of these plans recognize that Edmonton's growth will continue to place significant pressure on the City's transportation systems, civic infrastructure and public services. Both plans support the integration of transit and land use as an essential component to creating a sustainable city. With the integration of transit and land use, the LRT system can act as the primary framework for directing and influencing how and where the city develops.

One of Edmonton's largest investments is in transportation infrastructure. Edmonton has embarked on a major expansion of the light rail transit (LRT) system to create a more sustainable transportation system. The success of Edmonton's transit system as a viable transportation option for the public is dependent on supportive land use and circulation around Edmonton's transit investments. Recognizing that transit is most successful when supported by land uses that generate transit ridership, the City of Edmonton has developed the Transit Oriented Development (TOD) Guidelines to better plan transit-supportive land use and development around LRT stations and transit centres.

TOD is urban development that is planned and integrated with a transit station at its core. In a TOD, housing, shopping and employment are concentrated along a network of walkable and bikeable streets within 400 metres of the transit station.

The TOD Guidelines identify appropriate transit oriented development around LRT stations and transit centres. The Guidelines will be used to:

- Provide compatibility with community characteristics
- Communicate the City's land use expectations
- Provide development expectations
- Provide guidance for assessing proposals by property owners, developers and their designers
- Inform the creation of station area (TOD) plans

The TOD Guidelines recognize that not all transit stations should be developed in the same way. Neighbourhoods are unique and station areas should be developed to respect the character and reality of the local area. Station Area Types have been identified for each existing and planned LRT station throughout the entire system and for transit centres that are not part of an LRT station. While all station areas are anticipated to have a mix of uses, these Types describe the intended station area character and predominant uses. The applicable Guidelines will then encourage future development that is consistent with the identified character and uses. There are seven Station Area Types that have been identified:

- Neighbourhood
- New Neighbourhood
- Enhanced Neighbourhood
- Centre
- Employment
- Institution/ Recreation
- Downtown

The TOD Guidelines are an advisory tool to provide guidance in the review of rezoning applications, crafting Direct Control zones, creating Station Area Plans and amending other Statutory Plans. The Guidelines will be used when reviewing rezoning proposals for sites within 400 metres of an existing or proposed station. The Guidelines will be used in preparing, amending and reviewing statutory plans within 800 metres of an existing or proposed station.

The Transit Oriented Development (TOD) Guidelines align with Edmonton's vision, aiding Edmonton's 30-year agenda to:

- Shift transportation modes
- Improve livability
- Sustain the environment
- Transform urban form

The TOD Guidelines are on pages 45 to 84. It is imperative to read the TOD Guidelines Overview on pages 25 to 32 before reading the actual Guidelines.

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Association of Professional Engineers, Geologists and Geophysicists of Alberta
Building Owners and Managers Association
Business Revitalization Zone Association
Coseil Scolaire Centre-Nord
Edmonton Catholic Schools
Edmonton Federation of Community Leagues
Edmonton Public School Board
Edmonton Transit System Advisory Board
Greater Edmonton Home Builders Association
Media, Art and Design, Exposed in Edmonton
Nearctic Group
NextGen
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Urban Development Institute

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Fire Rescue Services
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Sustainable Development
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Housing and Economic Sustainability
Urban Planning and Environment

Transportation Services
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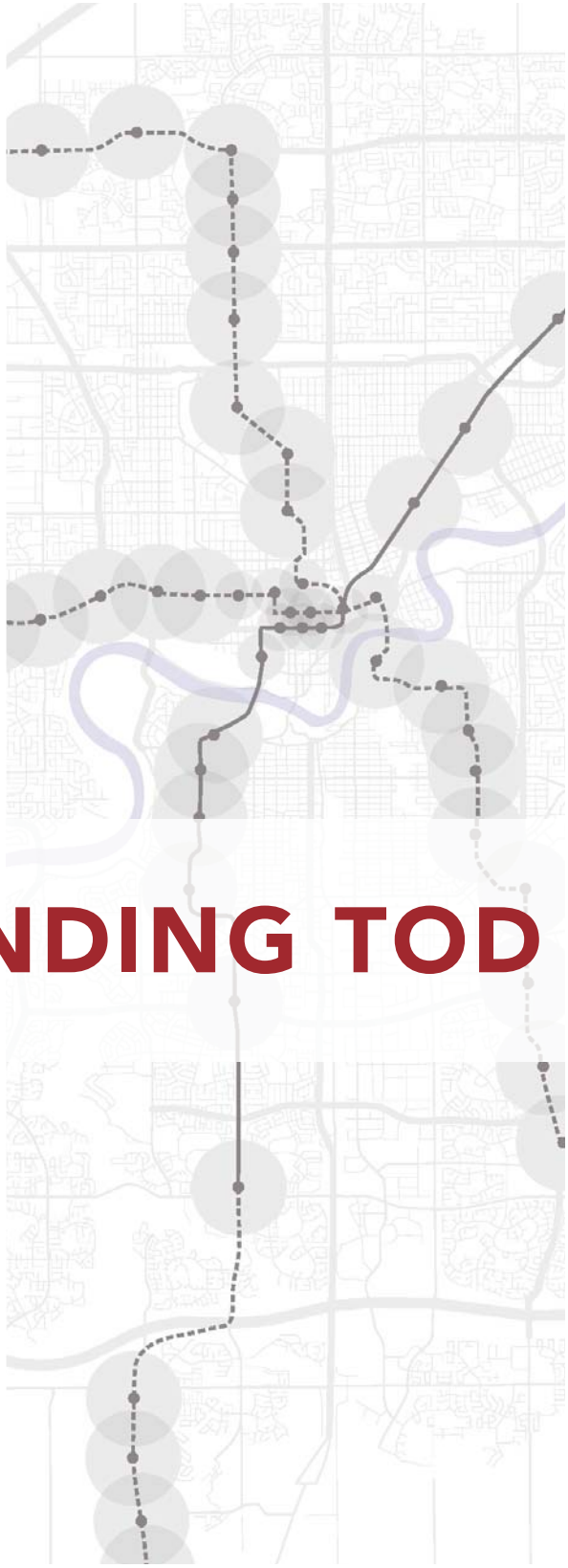
Light Rail Transit Design and Construction
Transportation Planning



UNDERSTANDING TOD

WHAT IS TOD?

The City of Edmonton defines transit oriented development (TOD) as urban development that is planned and integrated with a transit station at its core. In a TOD, housing, shopping and employment are concentrated along a network of walkable and bikeable streets within 400 metres of the transit station.

Creating TOD requires the creation of a complete neighbourhood in which land uses are located according to market fundamentals. These areas are well integrated with pedestrian, bicycle, auto and transit networks.

Station Hub

The area within 200 metres of the transit station includes the highest intensity of trip-generating retail, employment and commercial uses.

Station Neighbourhood

The area within 400 metres of the transit station is critical in the development of successful TOD. The 400 metre area represents a five-minute walk to the station. This area generates 70% to 80% of the station's walk-up ridership.

Area of Influence

The area within 800 metres of the LRT platform influences the character of the station neighbourhood and provides additional transit ridership.

The TOD–LRT Connection

The potential for developing TOD is highest around stations served by light rail transit because this mode has:

- Long-term infrastructure permanence
- Frequent service

WHAT IS TOD NOT?

TOD is **not**:

- **A new or untested development scheme–** TOD responds to fundamental real estate market principles and best practices for urban development.
- **Instantaneous–**TOD occurs incrementally over time as property owners choose to develop or redevelop their land.
- **A monoculture of a single or a few uses developed at high densities–**TOD includes the full mix of essential land uses.
- **An isolated pocket of development near a transit station–**TOD includes a web of interconnected streets linked to outlying neighbourhoods.
- **A single development project near the transit station–**TOD is the entire 360-degree area of land uses and street network surrounding the station.

Figure 01: Ideal TOD Area

ESSENTIAL COMPONENTS OF TOD

There are four essential building blocks common to all TOD.

Two facilitate getting to the station:

- **Grid of streets**
- **Complete streets**

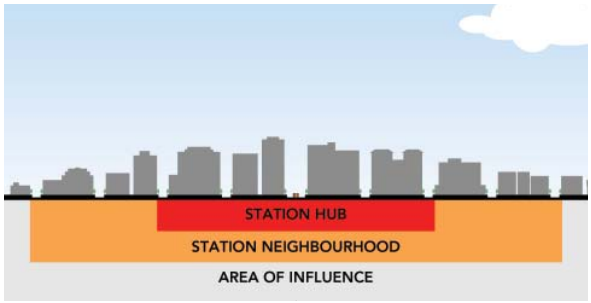
Two describe station area development:

- **Station hub**
- **Station neighbourhood**

In the ideal TOD, the essential components are integrated to create a 'one-stop destination'. The ideal TOD can be easily accessed on foot, by bicycle or from transit, by commuters, residents and people working in the area.

The ideal TOD described on the following pages may not be achievable in all instances. However, a true TOD development cannot be achieved unless these components are largely provided. Appendix 1 provides an overview of TOD supportive components.

Figure 02: Downtown TOD



GETTING TO THE STATION

TOD, unlike auto-oriented development, effectively accommodates all travelers—those in autos, trucks, trains, buses, on bicycles, and on foot. A TOD ensures adequate access for motorized vehicles. Successful TODs prioritize safe, convenient and direct access for pedestrians and bicyclists within a five-minute (400-metre) walk to or from the transit station.

- **Grid of Streets–**the traditional North American urban development pattern of a connected network of streets fosters TOD more effectively than contemporary suburban development patterns of meandering, discontinuous streets and cul-de-sacs. The grid of streets should extend uninterrupted 800 metres from the transit station.
- **Complete Streets–**in auto-oriented development, streets function primarily as conduits for vehicle movement. In TODs, streets are designed to accommodate all modes of transportation and provide access to the station. Complete streets are safe, enjoyable and beautiful places where people can linger at a cafe, bench or on a terrace.
- **Transit Interchange–**The quality of the interface between bus transit and rail transit is critical to ridership. The design of these interchanges can either promote development adjacent to transit or discourage it. The placement and design of transit interchanges at LRT stations should be guided by the surrounding context. Flexibility should be enabled by the City's design criteria. This allows inventive solutions that encourage private development adjacent to the LRT stations.

Figure 03: Walking to the Transit Station

GRID OF STREETS

The street grid is the most critical element in establishing successful TOD. An interconnected network of streets ensures that all trips to or from a transit station are as short as possible.

Uninterrupted Grid

The ideal TOD street grid extends continuously in all directions from the station. Partial or disconnected networks are not ideal. The uninterrupted grid will provide:

- **Multiple access routes to the station and to adjacent development–**by providing numerous routes, street traffic can be dispersed rather than concentrated on a few routes. Streets can be designed to be more intimate and pedestrian-friendly.
- **Direct sight lines to the station–**unless limited by topography, street grids should not meander or jog.

Fine-Grained Grid

The ideal TOD street grid is fine-grained with small block sizes that support convenient and direct pedestrian access to the station. The fine-grained grid:

- **Fosters development that engages and activates public streets–**precluding development that is inwardly oriented or set back from the street.
- **Creates more development sites–**promoting architectural variety and precluding monolithic architecture associated with large development sites.

Figure 04: Fine-Grained Street Grid

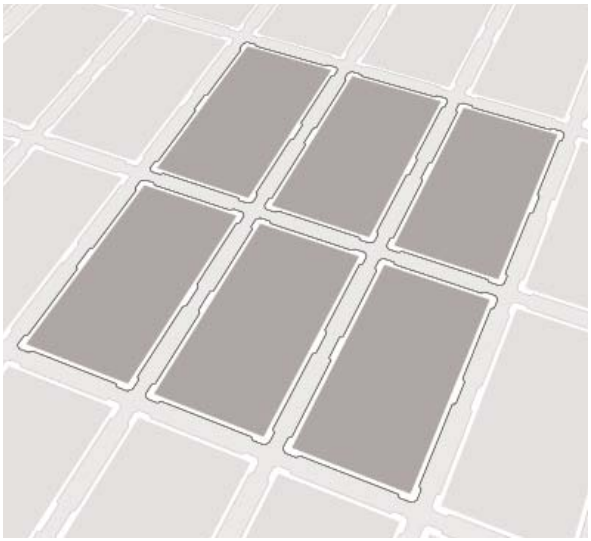


Figure 05: NOT Fine-Grained Street Grid

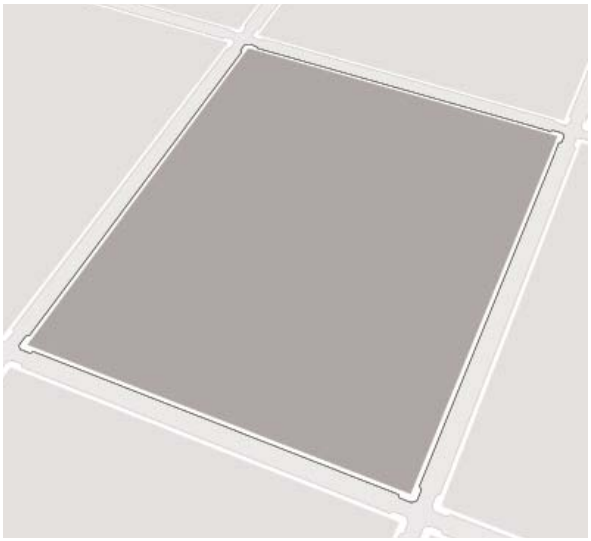


Figure 06: Pedestrian Friendly

Figure 07: Bicycle Friendly

Figure 08: Active Edges on Buildings

COMPLETE STREETS

In addition to providing direct access to the transit station, great TOD streets are interesting, livable and safe places.

In successful TODs, the street grid is designed as a series of 'outdoor rooms.' The public realm elements of sidewalks, streets and intersections and the private realm elements of the adjacent building walls, windows, and doorways must be people friendly. Along important transit lines, development bylaws, zoning regulations, and guidelines must be enacted to ensure that the public realm and the private realm encourage pedestrian and bicycle activity.

Public Realm

Essential requirements for the public realm elements include:

- **Continuous wide sidewalks–**lined with canopy-forming trees, pedestrian-scaled lighting and places to sit and mingle.
- **Narrow streets–**with slow moving auto traffic.
- **Safe intersections–**that are easy to cross by people of all ages and physical abilities during all weather conditions.
- **Safe bike facilities–**that are appropriately and contextually defined based on the surrounding area and representing the best practice in bicycle facility planning.

Private Realm

Streets that are safe day and night are fundamental to the success of a TOD. Essential building-edge requirements include:

- **Active edges–**doorways and ground-floor windows that are oriented to the street provide visual and physical interaction between the inside of buildings and the street, creating 'eyes on the street'.
- **Zero-metre setbacks–**buildings that are built up to the sidewalk establish a continuous 'street edge' that provides pedestrians and bicyclists with a comfortable sense of enclosure.

Figure 09: Station Hub Retail–Grocery Store

Figure 10: Station Hub Retail–Hardware Store

STATION HUB

The highest intensity of development in a TOD occurs within the station hub, the area within 200 metres of the transit station.

The station hub is home to neighbourhood-serving retail and employment uses necessary to support the residents of the TOD. High-density housing may also be provided.

Concentrated Uses Benefit Communities

Concentrating trip-generating uses (business, retail or work destination) around the station and within a short walk for most TOD residents can reduce both the length and quantity of driving trips made by TOD residents and employees.

Retail Street

Retail is the most important use to get right in a TOD. Retail uses provide the daily goods and services for area residents and employees and must be accessible for those who arrive via transit, walking, or auto.

Retail anchors, such as grocery stores, along with neighbourhood-serving shops and services should be located on the ground floors of buildings along one or two streets originating at the station and connecting to the station neighbourhood.

Retail uses are most successful when:

- Located on a street with enough, but not too much, drive-by traffic; 8,000 to 15,000 average daily trips (ADT) is ideal.
- Located on a street with continuous curb-side parking.
- Retail uses occur on both sides of the street and are uninterrupted by vacancies or other types of uses.
- The quantity of retail uses is sufficient to draw shoppers from outside of the TOD area.

Ideally on a retail street both curbside parking and bike lanes would be accommodated. However where the ROW is constrained, priority should be given to the provision of curbside parking to support commercial activity.

Figure 11: Station Hub

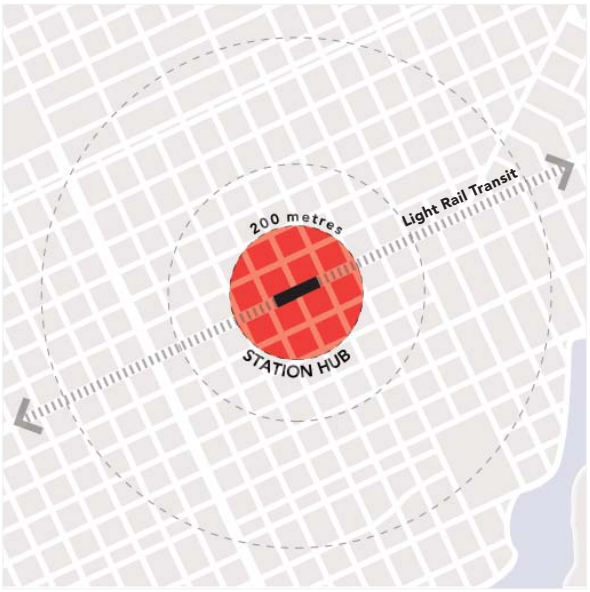


Figure 12: Retail and Commercial Uses

Retail Parking

Only a portion of the parking needed for a retail street can be accomodated on-street. The majority of the parking should be accommodated with a reserve of parking that may be located below ground, in a separate structure, or integrated into a building and that can be accessed directly from the street.

Figure 13: Station Hub Employment District

Figure 14: Station Plaza

Urban Plaza

In downtown or shopping destination TOD locations, where there is typically little existing open space, an urban plaza should be located adjacent to the station. It can serve as a gathering space, a venue for markets or festivals, and as an overflow area for transit patrons during peak travel periods or event surges.

Employment

Employment uses provide job opportunities for TOD residents and for commuters from outside of the TOD area.

Businesses with a high number of jobs per hectare (medical, financial, technology and engineering offices, corporate headquarters, and public agencies) are ideally located in the station hub.

Employment uses are most successful when located on prominent high-traffic streets, adjacent to other employment uses, and on medium to large parcels. These types of businesses require high visibility and brand exposure to succeed. They may be either single-use buildings or occupy upper floors above ground-floor retail or commercial uses.

Low-intensity uses such as manufacturing, warehousing or other similar industrial uses are not appropriate within the Station Hub.

Housing

High-density housing development is appropriate within the station hub. Housing within the hub should have active ground-floor design.

Park & Ride

Park & ride facilities located adjacent to the station severely degrade the station environment. Whenever possible, park & ride facilities should be prohibited. Where required, park & ride facilities should be sited within a reasonable walking distance from a station, but not immediately adjacent to the station. Where financially feasible, transit parking can be stacked within a parkade. Parking may be adjacent to a station only if the first floor of the parkade contributes to activating the station with retail and commercial uses. Park & ride is appropriate at terminus stations to intercept long distance auto trips. It should be designed to allow for TOD and pedestrian access to the station.

STATION NEIGHBOURHOOD

The station neighbourhood is the area outside of the station hub and within 400 metres of the station. This area includes the largest concentration of housing within the TOD.

Complete Communities

A community comprised of a mix of retail, residential and employment land uses with a diversity of housing types, accessible amenities and mobility choices will foster neighbourhoods people can remain in throughout a lifetime.

Housing

Transit ridership is most effectively increased by providing opportunities for living in close proximity—within a five-minute walk—of the station. By concentrating medium- and high-density housing in the station neighbourhood, greater transit ridership will be realized and the number of vehicle trips within the TOD will be reduced.

A mix of rental and ownership properties should be provided within the neighbourhood to support a mix of income levels.

Station neighbourhood housing should also be sensitive to the existing context and provide height transitions to lower density and single-family housing in the surrounding areas.

Housing-Supportive Amenities

Ideally, all medium- and high-density housing will be within three blocks of a park or plaza. The success of a TOD is largely measured by whether it is a *livable* community that citizens will find desirable. Simply loading density into a neighbourhood may result in a 'transit ghetto' where housing is provided but the ambiance and safety of the neighbourhood is poor. To attract a stable and diverse residential population, parks, open spaces, schools and civic and cultural uses must be woven into the fabric of the neighbourhood.

Schools and outdoor play areas that can be integrated into the urban form, such as the ground floor of a mixed use building, are encouraged in a Station Neighbourhood to accommodate families.

Figure 15: Station Neighbourhood

Figure 16: Housing Height Transition

Small neighbourhood-serving urban parks, rather than expansive regional parks, are more suitable in a station neighbourhood. The parks provided should be large enough to accommodate child-friendly play structures, courts, and informal grassy areas, but not so large as to consume too much area within the neighbourhood. As with the station plaza, parks should be the focal point for adjacent development.

Where outstanding natural landscapes—such as rivers or wooded areas—exist, they should be protected and featured.

WHERE DOES TOD OCCUR?

Figure 17: Infill Station Area

INFILL STATION AREA

TOD in an infill station area occurs when transit-supportive land uses and densities are constructed on undeveloped or underutilized parcels within an existing developed area. Infill sites may be vacant lots, parking lots, buildings that are in poor condition or very low density in comparison with surrounding development.

Successful infill TOD includes transit-supportive higher density uses on limited opportunity sites and does not adversely impact existing stable development.

Figure 18: Greenfield Station Area

GREENFIELD STATION AREA

TOD in a greenfield station area occurs when transit-supportive land uses, densities and a grid of streets are constructed in a previously undeveloped area. Greenfield sites are typically located on the suburban fringe of a metropolitan region. In some instances, large reuse sites located within urban areas—such as Edmonton's City Centre Redevelopment site—may be considered greenfield sites. Due to the lack of existing development and infrastructure, greenfield sites may offer the ultimate opportunity to design and build the essential components of TOD without impacting existing development patterns or populations.

WHAT IS THE CASE FOR TOD?

Successful TOD will increase transit ridership and reduce the number of automobile kilometres driven on Edmonton's roads. In addition, TOD provides numerous benefits to individuals, the community and the environment.

Local Economic Stimulus

Lower personal transportation costs can result in significant financial benefits for both the individual and the community.

Households in a TOD can save by:

- **Owning one less car–**saving approximately $6,250[1] per year in car ownership costs, including full-coverage insurance, license, registration, taxes, depreciation and finance charge.
- **Walking, biking or taking transit–**using an alternative transportation mode can save $4,300 per year that would have been spent on auto parking[2] and gasoline costs[3].

The transit agency and the local economy benefit from TOD through:

- **Increased farebox revenues–**when more people ride transit, more money can be made on transit fares, resulting in a greater cost recovery for the transit agency.
- **Ongoing local economic stimulus–**when people use transit instead of driving, money that would have been spent on gasoline and sent out of the community to gasoline suppliers can instead be spent in the local marketplace on things people need and desire.

Environmental Benefits

Two-thirds of driving trips are made to shopping, work or business destinations. Concentrating these uses around the transit station creates a one-stop destination that is easily accessed on foot or bike. The result is:

- **Fewer auto trips–**many of the trips that are made by automobile in a conventional low-density development are made by walking, biking or taking transit in a TOD.
- **Shorter auto trips–**trip-generating uses—retail, commercial and employment—are concentrated in the station neighbourhood.
- **Greenhouse Gas (GHG) Reduction–**a substantial reduction in vehicle kilometres traveled (VKT) has the potential to reduce GHGs by up to 36% annually[4] .

Studies indicate that automobile travel can be 45% less per capita in a TOD than in a conventional land use development[5].

Health Benefits

The public benefits from living in more compact communities where air pollution is reduced and local services are accessible by walking, biking and taking LRT. TODs provide opportunities for physical and mental health benefits that result from:

- **Active transportation options–**Walking and bicycling to shopping, home, work or transit allows individuals to incorporate exercise in their daily routine.
- **Reduced stress–**The less people drive, especially in high-traffic areas, the less driving-related stress they experience.
- **Reduced auto-related injuries–**Reducing the number of auto trips reduces the chances of auto-related injury.

1 Canadian Automobile Association's 2010 cost for owning a four-door sedan

2 Parking costs assume $154.23 a month for unreserved parking in a downtown business district according to the *2009 Colliers International Parking Rate Study*

3 Gasoline costs assume 15,000 miles (24,140 kilometers) per year at 23.4 miles (37.65 kilometers) per gallon at the price of $3.84 per gallon ($1.01/litre = $2461.53), the average for self-serve regular unleaded gasoline in the Edmonton area on February 18, 2011

4 Center for Transit Oriented Development: Transit Oriented Development and the Potential for VMT-related Greenhouse Gas Emissions Growth Reduction, Mar 2010

5 Linda Bailey (2007), *Public Transportation and Petroleum Savings in the U.S.: Reducing Dependence on Oil,* ICF International for the American Public Transportation Association (www.apta.com)

Comparison of No TOD with TOD

The chart below compares five typical stations without TOD to five stations with ideal TOD.

For assumptions and calculations, see Appendix 3 of this document.

Figure 19: No TOD

NO TOD

An LRT system and stations are built, but little is done to increase development intensity around the stations.

Ridership (annual)

1 MILLION TRIPS

Farebox Revenue (annual)

$2 MILLION

Economic Stimulus (annual)

$3 MILLION

Figure 20: TOD

TOD

Regulatory action is taken to promote development intensity in the area extending 400 metres out from the station.

Ridership (annual)

19 MILLION TRIPS

Farebox Revenue (annual)

$34 MILLION

Economic Stimulus (annual)

$127 MILLION

Figures above were calculated by Crandall Arambula (2010). See Appendix 3 for calculations.

PROJECT BACKGROUND

PROJECT PHILOSOPHY

INTEGRATE TRANSIT AND LAND USE

The Way Ahead, Edmonton's Strategic Plan, sets Edmonton on the course for a vibrant and sustainable future. Over time, *The Way Ahead* directs that Edmonton will transform its urban form and shift its transportation modes.

Edmonton is aligning its strategic planning processes to ensure an integrated and holistic approach toward city building over the next three decades. Six corporate policy documents have been developed or are in development to aid in leading the City toward these goals.

The Way We Grow, Edmonton's Municipal Development Plan provides policies and guidance for Edmonton's evolution into a more compact, transit-oriented and sustainable city. The plan contains policy direction to prepare TOD (Station Area Plans) around existing and proposed LRT stations.

The Way We Move, Edmonton's Transportation Plan supports public transit as a means to decrease other public infrastructure investment. It provides viable alternative transportation modes to reduce Edmonton's carbon and ecological footprint. The plan states that effective transit services and transit oriented development along an expanded LRT are essential to successfully achieving the City Vision.

The TOD Guidelines align with these plans, aiding Edmonton's 30-year agenda to:

- Improve livability
- Shift transportation modes
- Sustain the environment
- Transform urban form
- Diversify Edmonton's economy

Transit's role as a shaper of urban form can be as important as its transportation function. The type and nature of development around transit greatly influences transit's effectiveness. The mobility benefits offered by a good transit system are undermined if riders exit the system and are confronted with an environment in which they cannot walk safely and comfortably to their destination.

The success of Edmonton's expanded transit system is dependent on the development of supportive land use and circulation around the City's transit investments. Recognizing that transit is most successful when supported by land use policies that generate transit ridership, the City of Edmonton has developed these TOD Guidelines.

The TOD Guidelines are the framework for planning ahead for the integration of transit and land use in station areas. They will support transit oriented development and promote private development, public policies, regulations, and infrastructure investments by:

- Locating higher density development close to LRT stations and transit centres.
- Locating major trip generators (office buildings, shopping streets, schools, and entertainment facilities) close to transit.
- Encouraging station-specific mix of land uses to let people live and shop near their jobs.
- Encouraging high-quality projects.
- Providing facilities that ensure the efficient, safe and convenient transfer of passengers between transit modes.
- Planning for the creation of an attractive, green city.

The creation of a sustainable community requires a coordinated transportation and land use system. Motorists, transit customers, pedestrians and cyclists are all partners who contribute to, rather than burden, Edmontonians' quality of life.

Figure 21: Higher Density Growth Around LRT

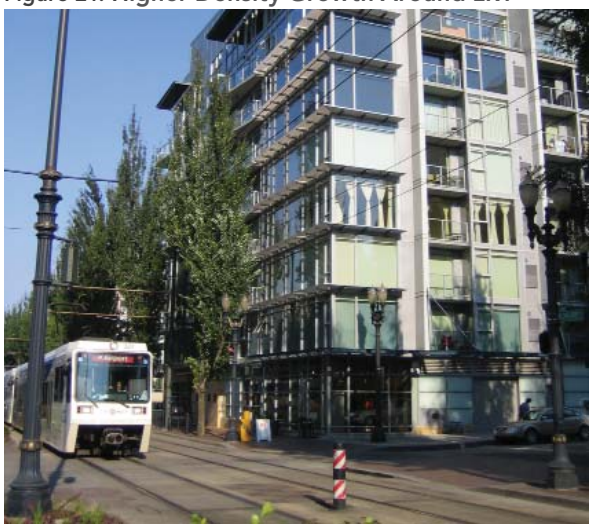
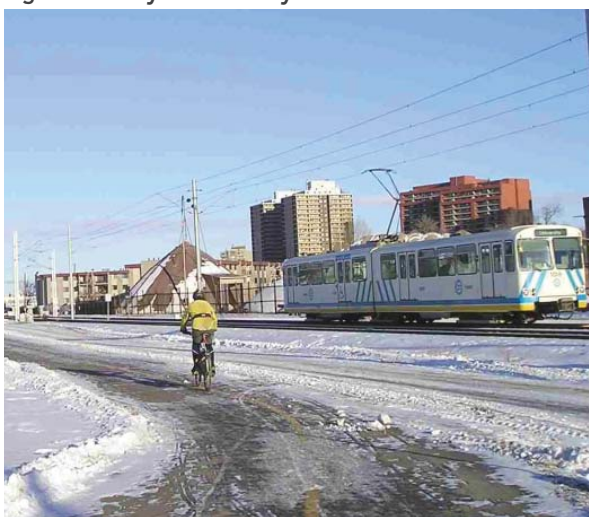


Figure 22: Bicycle Pathway Access to LRT



TRANSIT AND LAND USE PRINCIPLES

The principles for integrating transit and land use in the areas around LRT stations and transit centres support the City of Edmonton's strategic plans.

Guiding Principles

- Establish land uses around LRT stations and transit centres to reflect the characteristics of surrounding areas and each station's role in the LRT network.
- Focus higher density residential, retail and employment growth around LRT stations and transit centres to support City investment in transportation infrastructure.
- Create a safe, direct and convenient circulation system for all modes of transportation, with an emphasis on pedestrians and bicycles, that connects destinations.

Supporting Principles

- Create a variety of public open spaces that will animate the station platform and support increased densities within LRT station areas.
- Incorporate universally accessible design in buildings and public spaces within the station neighbourhood.
- Accommodate regional growth in a more sustainable pattern.
- Create compact neighbourhoods with housing, jobs, shopping and services within convenient walking distance of transit stations.
- Plan for well-designed, environmentally sustainable and livable communities that reduce car use.

EDMONTON'S LRT SYSTEM

LRT NETWORK EXPANSION

Edmonton is embarking on a major expansion of the LRT system. One of the City of Edmonton's Strategic Goals, as outlined in the Transportation Master Plan titled *The Way We Move*, is to, '' … pursue expansion of the LRT to all sectors with a goal to increase transit ridership and transit mode split, and spur the development of compact urban communities."

The LRT Network Plan:

- Is the vision for the LRT network in 2040 and sets the direction of future LRT expansion.
- Was developed based on an assessment of long-term regional population and employment growth.
- Proposes a five legged LRT system serving the Northwest, Northeast, Southeast, South and West as well as a central area circulator route connecting the downtown and University areas.
- Outlines a shift to a more urban, city-scale system utilizing low-floor technology.
- Recommends the low-floor urban system be designed, constructed and operated in a manner that integrates the system into existing areas while allowing for future TOD.

The goal of implementing a low-floor urban LRT system is two-fold:

- To provide improved connectivity, transit integration and a style of system that is accessible and sympathetic to its surrounding environment.
- To support future growth along the corridors and around stations, improve transit accessibility and increase 'seamless journey' opportunities, resulting in increased transit ridership and the development of a more compact, urban city.

Figure 23: Edmonton's Existing and Planned LRT System

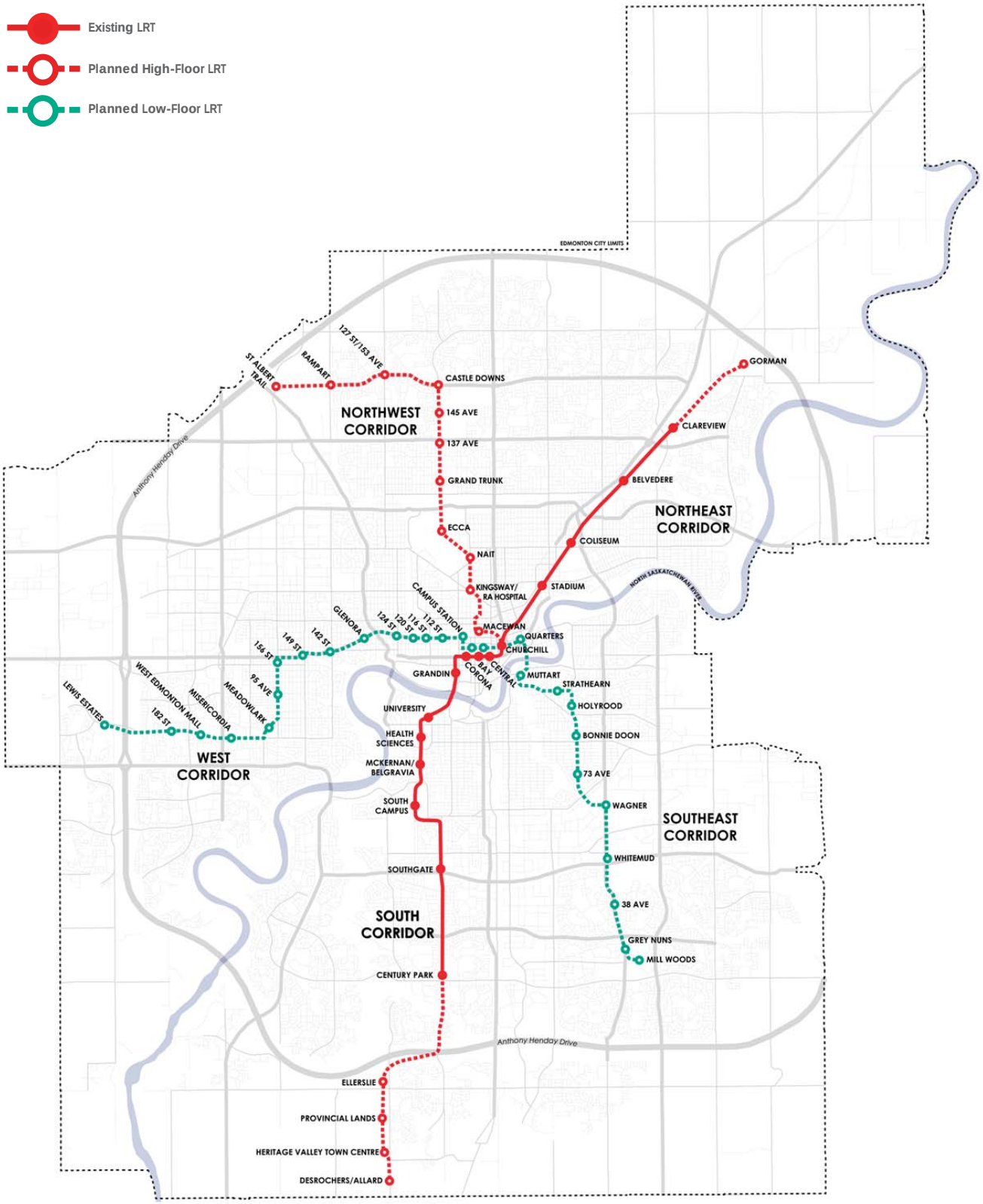


Figure 24: Low-Floor LRT Station - Dublin, Ireland

Figure 25: Low-Floor LRT - Amsterdam, Netherlands

EXISTING & PLANNED LRT SYSTEM

In June 2009, City Council adopted a long-term LRT Network Plan that defines the ultimate LRT system for the city. This system will increase the number of stations from 15 to over 50 along the following lines:

- **West–**New line to Lewis Estates
- **North/Northwest–**An initial line to NAIT with an extension to the City of St. Albert
- **Northeast–**Extension from Clareview to Gorman
- **Southeast–**New line to Mill Woods
- **South–**Extension from South Campus Century Park to Desrochers/Allard neighbourhoods

LOW-FLOOR URBAN-STYLE LRT SYSTEM

The focus of future LRT expansion is to provide an urban-style, city-scale system that will provide closer stop spacing and improved links to communities. This supports the City's vision for a more compact, sustainable and liveable city. An urban-style city-scale system is defined in the LRT Network Plan as:

- **Urban-style–**A style of system that offers reduced scale platforms and stops, modern LRT vehicles, frequent stops, transit priority and that serves dense urban corridors.
- **City scale–**A distinctive design that is easily accessible, is supportive of land use plans and walkable communities, and is seamlessly integrated into the urban fabric. The system operates within the city boundaries, reducing urban sprawl, as set out within the LRT network plan.

The images to the left show examples of urban-style city-scale LRT in Dublin and Amsterdam, related transit oriented development, and the integration of LRT into an existing city streetscape.

TOD GUIDELINES OVERVIEW

PURPOSE

The TOD Guidelines identify appropriate transit oriented development around LRT stations and transit centres. The Guidelines will apply where a property owner plans to redevelop or develop their property. The Guidelines will be used to communicate the City's expectations and to assess development proposals by property owners, developers and their designers. The principal components of the Guidelines are:

- **Land Use and Intensity Guidelines–**Unique guidelines for each station area type
- **Building and Site Guidelines–**Universal guidelines for all station area types
- **Public Realm Guidelines–**Universal guidelines for all station area types
- **Urban Design and Crime Prevention Through Environmental Design (CPTED) Principles–** Universal principles for all station area types

The Guidelines define the minimum acceptable expectations for the amount and form of uses and for elements of the accompanying public realm such as streets, walkways and open spaces. The Guidelines apply to developable land within 400 metres of an LRT station platform and transit centre. They will serve as the basis for station area plan design within 800 metres of an LRT station platform or transit centre.

Station Area Types have been identified for each existing and planned LRT station throughout the entire system (page 39). Station Area Types have only been identified for transit centres that are not part of an LRT station. While all station areas are anticipated to have a mix of uses, these Types describe the intended station area character and predominant uses. The applicable Guidelines will then encourage future development that is consistent with the identified character and uses.

GUIDELINE ORGANIZATION

Figure 26: Organization of TOD Guidelines

The TOD Guideline tables (pages 47 to 86) are organized under the following four categories:

- Land Use and Intensity Guidelines
- Building and Site Design Guideines
- Public Realm Guidelines
- Urban Design and CPTED Principles

Land Use and Intensity Guidelines are unique for each station area type. Building and Site Design Guidelines, Public Realm Guidelines and Urban Design and CPTED Principles are universal for all station area types.

For each category of guidelines and principles, descriptions are also provided for explanatory and educational purposes.

LAND USE & INTENSITY GUIDELINES

- **Land Use and Intensity Guidelines–**identify minimum and maximum land use expectations for new allowable uses and Station Area Plans; all residential densities and employment intensities are net area calculations

BUILDING & SITE DESIGN GUIDELINES

- **Building and Site Design Guidelines–**describe qualities that foster the desired relationship between buildings and the street and provide appropriate transitions between shorter and taller buildings.

PUBLIC REALM GUIDELINES

The public realm is fundamental to the success of TOD. A quality public realm attracts and stabilizes private investment and ensures consistency throughout the station area. Public Realm Guidelines may be initiated by the City of Edmonton or by private developers. They include:

- **Block Guidelines–** identify maximum block dimensions and configuration expectations.
- **Public Boulevard Guidelines–**identify minimum dimensions, restrictions and pedestrian components required for new and improved public streets.
- **Urban Park and Plaza Guidelines–**identify sizes of public urban parks and plazas, and the types of amenities.
- **Bicycle Facilities Guidelines–**identify bicycle parking and travel route types required for new and improved public streets.
- **Roadway Guidelines–**identify roadway elements required for new and improved public streets .

URBAN DESIGN AND CPTED PRINCIPLES

- **Urban Design and CPTED Principles–**describe qualities that encourage appropriate design quality and reduce the potential for crime in station areas.

APPLYING THE GUIDELINES

HOW TO APPLY GUIDELINES

The TOD Guidelines will be used in four ways.

Land Use and Intensity Guidelines

The TOD Guidelines will be used to evaluate rezoning applications on sites within 400 metres of existing or planned LRT stations or transit centres. In these situations, the Land Use Type and Intensity Guidelines will be used to evaluate whether the proposed location and intensity of the development are appropriate, based on the Station Type. The Land Use Type and Intensity Guidelines also provide land use expectations. These will be used in preparing and amending Statutory Plans for Station Areas both in infill and greenfield situations within 800 metres of the existing or planned stations.

When applying the Land Use and Intensity Guidelines, the size of the site takes precedence over the location of the site when determining residential density.

Building and Site Design Guidelines

The TOD Guidelines will be applied to the creation of new zones and overlays, or the modification of existing zones and overlays within the zoning bylaw. They reflect site and building design criteria appropriate for development around station areas. The Building and Site Design Guidelines will provide direction on what additional or new regulations should be included in:

- Standard zones
- Direct control zones
- Special area zones.

These can be applied to sites around LRT stations or transit centres.

Public Realm Guidelines

The TOD Guidelines will be used as a basis for rezoning large sites greater than or equal to one hectare, or creating new or amending statutory plans within 800 metres of an LRT station or 400 metres of a transit centre. The exact boundaries of the station area plan will vary from the 800-metre radius—especially for infill stations—depending on existing uses, development potential and other factors. The TOD Guidelines will be used in these situations to direct the location and design of elements in the Public Realm. This includes:

- Streets
- Block size
- Pedestrian and bicycle connections
- Urban parks
- Plazas

Urban Design and CPTED Principles

The TOD Urban Design and CPTED Principles will be universally applied for all projects within the Station Areas of existing or planned LRT stations or transit centres.

Relationship Between the TOD Guidelines and the Residential Infill Guidelines

The TOD Guidelines determine the appropriate location and density of development within 400 metres of an LRT station or transit centre and provide guidance to Station Area Plans. The Residential Infill Guidelines guide the type and location of residential infill development beyond 400 metres of an LRT station or transit centre in mature neighbourhoods (Appendix 4).

In addition, the Residential Infill Guidelines contain a section relating to the development of large infill sites (one or more hectares in size). These Large Site Guidelines—which address items like amenity areas, heights, transitions, and street patterns—should be applied in conjunction with the TOD Guidelines in developing all large sites that are located within a station area in a mature neighbourhood (Appendix 4).

Relationship Between the TOD Guidelines, Station Area Plans and Existing Plans

An approved Station Area Plan will supersede the TOD Guidelines. Where a Station Area Plan has been approved, the TOD Guidelines would no longer apply to the area outside the plan boundary but within 400 metres of the station. In mature neighbourhoods, the Residential Infill Guidelines will apply. A Station Area Plan may be undertaken within an area governed by an existing approved Area Redevelopment Plan, Neighbourhood Structure Plan, or Neighbourhood Area Structure Plan. Those plans would be expected to be amended to incorporate the TOD principles and applicable guidelines.

Who Will Use the Guidelines

The TOD Guidelines will be used by public stakeholders, developers, City Administration and City Council to:

- Prepare, review, and approve rezoning applications for sites within 400 metres of existing or planned LRT stations or transit centres.
- Prepare, amend, review, and approve new or existing zones for development around LRT stations or transit centres.
- Prepare, review, and approve new statutory plans or amend existing statutory plans that include an existing or planned LRT station or Transit Centre

Heritage Sites

Heritage Sites designated and protected as a Municipal Historic Resource on the Register of Historic Resources in Edmonton are exempt from the Guidelines. Priority will be given to incorporating or repurposing those heritage resources on the Inventory of Historic Resources in Edmonton.

Figure 27: Residential Infill

Figure 28: Designated Municipal Historic Resource

WHERE AND WHEN TO APPLY GUIDELINES

The Station Area is the area of influence for either an LRT Station or a transit centre. The different areas of influence are described in the following pages.

For Rezoning Applications

The TOD Guidelines will be used when reviewing rezoning proposals for sites within 400 metres of an existing or planned LRT station or transit centre. The Residential Infill Guidelines will be used when reviewing rezoning proposals for sites outside 400 metres of an existing or planned LRT station or transit centre and in a mature neighbourhood (Appendix 4).

Figure 29: Where to Apply Guidelines for Rezoning Applications around an LRT Station or transit centre for Sites < 1 hectare

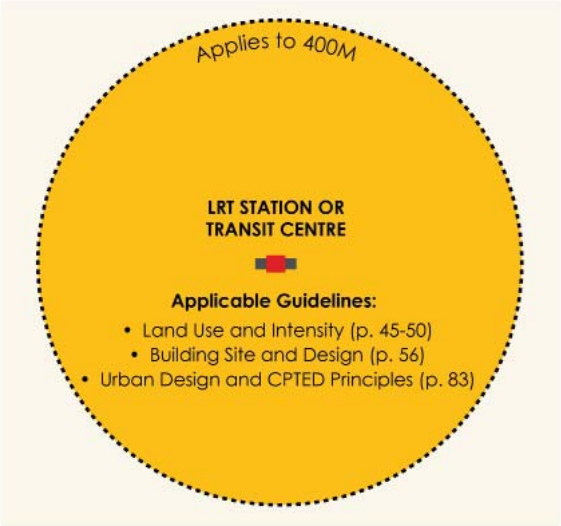
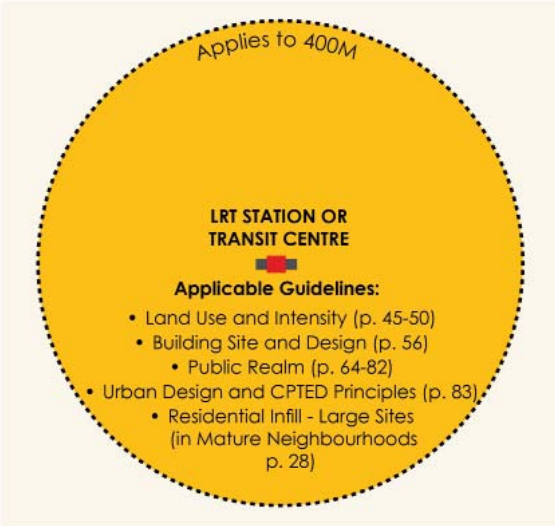


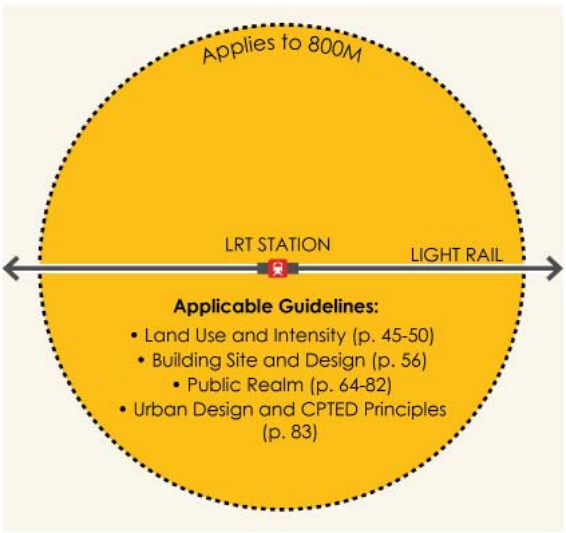
Figure 30: Where to Apply Guidelines for Rezoning Applications around an LRT Station or Transit Centre for Sites ≥ 1 hectare



For Statutory Plans (LRT)

Station Area Plans may be implemented through statutory plans. Statutory plans include Area Redevelopment Plans, Neighbourhood Structure Plans, Neighbourhood Area Structure Plans and Area Structure Plans. The TOD Guidelines will be used in preparing, reviewing or amending statutory plans within 800 metres of an existing or planned LRT station. The Residential Infill Guidelines will be used in preparing, reviewing or amending statutory plans for sites outside 800 metres of an existing or planned LRT station and in a mature neighbourhood (Appendix 4).

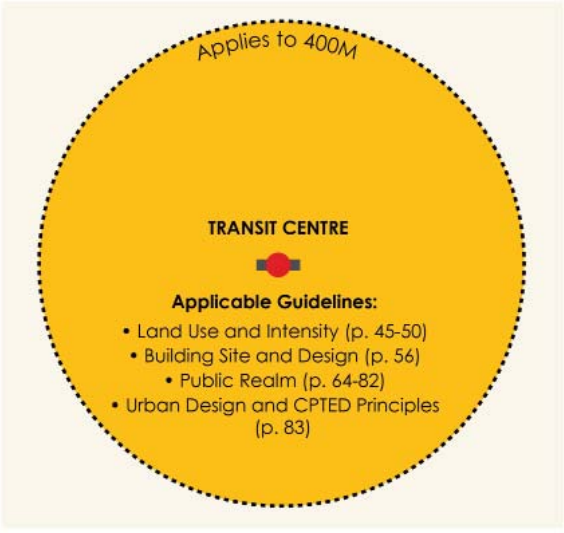
Figure 31: Where and When to Apply Guidelines for Statutory Plans around an LRT Station



For Statutory Plans (Transit Centre)

The TOD Guidelines will be used in preparing, reviewing or amending statutory plans within 400 metres of a transit centre. The Residential Infill Guidelines will be used in preparing, reviewing or amending statutory plans for sites outside 400 metres of a transit centre and in a mature neighbourhood (Appendix 4).

Figure 32: Where and When to Apply Guidelines for Statutory Plans around a Transit Centre



SPECIFIC APPLICATION OF THE TOD GUIDELINES

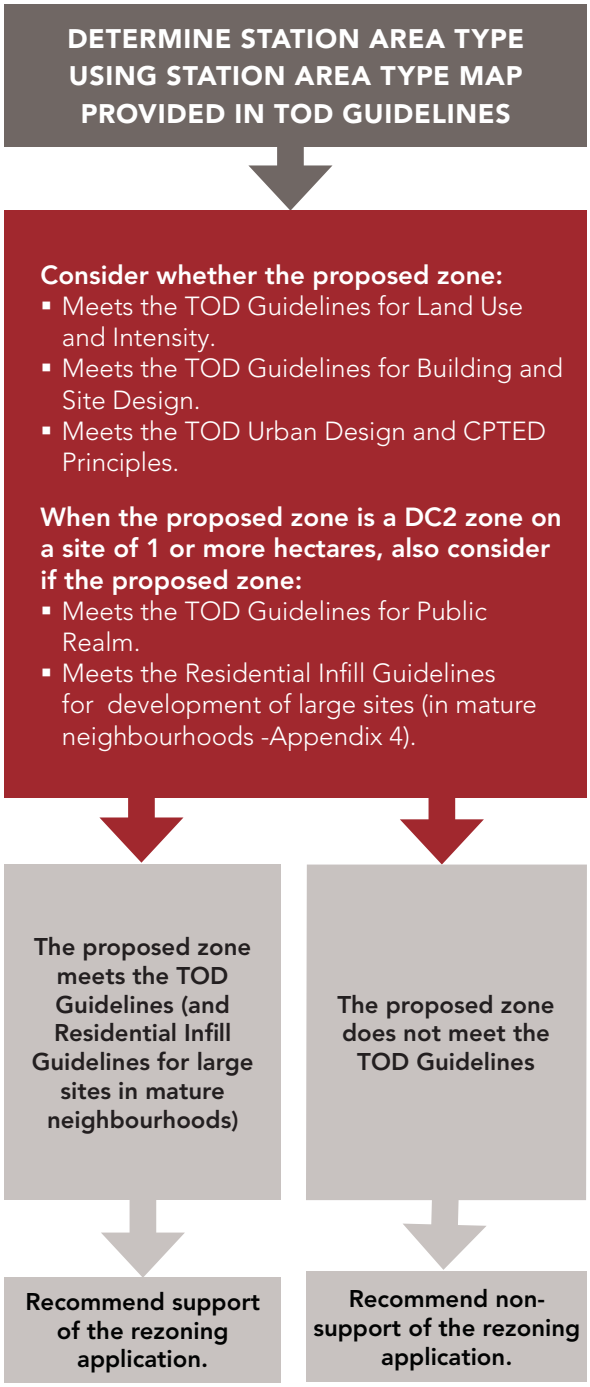
Rezoning Applications within 400 metres of an Existing or Planned LRT Station or Transit Centre

The following process should be used to evaluate rezoning applications on sites located within 400m of an existing or planned station or transit centre. This will determine whether the rezoning application should be supported or not supported in situations where there is no Station Area Plan to guide zoning approval. Developers should also use the process to determine what type of densities to apply for around the Station Areas of LRT Stations and transit centres.

Where applicable, statutory plans will be amended to align with the TOD Guidelines.

Standard public notice and involvement processes will be followed for all rezoning applications.

Figure 33: Evaluating Rezoning Applications

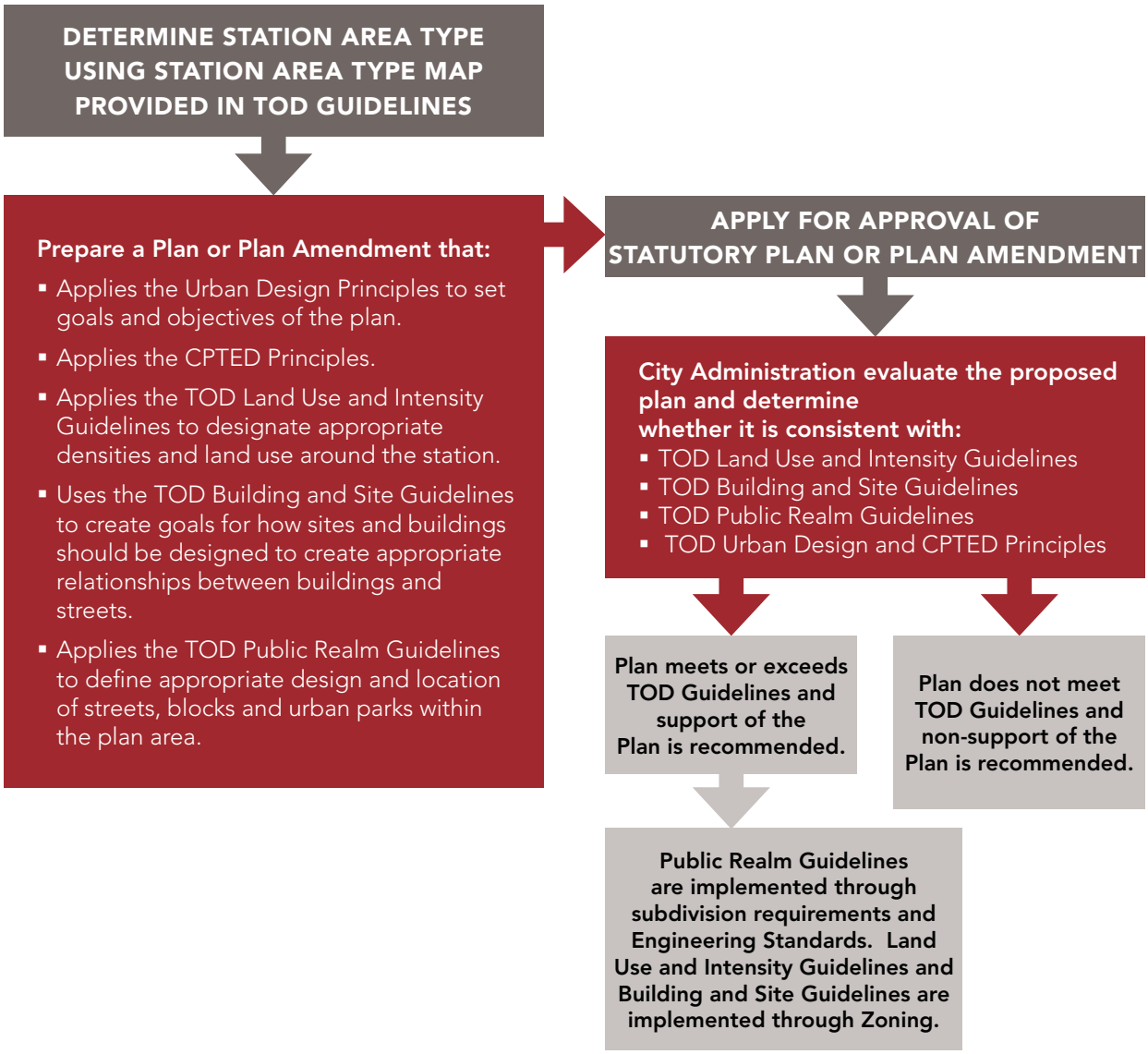


Preparation of or Amendments to Statutory Plans that include an LRT Station or Transit Centre

The following process guides the preparation of Station Area Plans or preparation of or amendments to statutory plans that include areas within 800 metres of an existing or planned LRT station or 400 meters of an existing or planned Transit Centre. The process should also be used by City Administration to evaluate Station Area Plans and determine whether to recommend support of the plan or plan amendment and by City Council to determine approval.

Standard public notice and involvement processes will be followed for the preparation or amendment of all statutory plans.

Figure 34: Preparing and Evaluating Station Area Plans



STATION AREA TYPES

TOD & TRANSIT PLANNING CONCEPTS

TOD TYPOLOGY CONCEPT

Edmonton's future urban-style LRT will be focused on connecting people and places. The planned LRT lines will add more than 40 stations to the current system, linking a greater number of destinations to compact urban centres.

Because each station's context is unique, a one-size fits all approach to station area planning is not appropriate. Seven Station Area Types were developed for LRT stations and transit centres. These were based on an assessment of the system's individual station areas and the City's goals for the system.

Station Area Types establish a range of TOD expectations and guidelines for the appropriate types and intensities of transit supportive development. Types are assigned to station areas based on the area's existing conditions and development potential.

Establishing Station Area Types helps to meet the transit oriented policy aspirations of the City of Edmonton to maximize the system's transit ridership while respecting the neighbourhood context.

LRT SYSTEM PRINCIPLES

In support of the *The Way We Move*, the principles for the development of the future light rail routes and network are being guided by the LRT vision statement:

"The LRT Expansion Plan will deliver a high quality, fully accessible, safe, efficient and environmentally sustainable LRT Network that maximizes passenger convenience and supports the City's continuing economic prosperity, serving and in turn being served by, transit oriented land use policies."

People are the 'user' link between transit facilities and transit oriented development, where high quality planning and design of the light rail system considers the 'whole trip' (information, ticketing, safety, convenience, ease of access, quality of service). This leads to walking, cycling and transit being the easiest and most attractive way for people to travel. Using transit then becomes a lifestyle choice and that leads to many benefits for health, sustainability and efficient transit operation, among others.

This focus has been incorporated in the LRT corridor, route selection, and concept planning of the LRT alignments described in the LRT Network Plan. The planning of different routes and corridors is being done on the basis of serving existing and future destinations throughout Edmonton with an integrated, convenient, and efficient transportation system. The specific criteria used in the planning of LRT routes are:

- Land use and promoting compact urban form: existing and future population and employment, and opportunities for TOD.
- Movement of people and goods: efficiency and connectivity of the system.
- Feasibility (cost and complexity of construction).
- Parks, river valley, and ravine systems: connectivity to parks and the river valley.
- Natural environment: minimizing disturbance of natural areas.
- Social environment: minimizing community impacts and property acquisition, and maximizing connectivity and accessibility of the system.

The application of these principles support the development of the LRT system to serve the existing and future destinations and populations of the city. The principles also provide the building blocks required to create an LRT system that supports and encourages the development of transit oriented communities.

STATION AREA TYPES

The assignment of a Station Area Type to each station area takes into account:

- Existing uses and their long-term viability
- The amount and location of potential development or redevelopment sites
- Existing amenities such as parks or open spaces
- Existing roadway traffic conditions, street grid and infrastructure
- Pedestrian and bicycle connectivity
- Physical barriers that might limit access to stations

The initial step in assigning Station Area Types included:

- Review of existing policy documents, population distribution models, and ridership analysis to establish overall anticipated job and residential populations for each LRT corridor.
- Assessment and evaluation of existing and planned LRT stations and line engineering based on their ability to support or discourage pedestrian- and street-oriented transit-supportive development.
- Assessment of each Station Area, in the context of its respective corridor, for its long-term development or redevelopment potential.

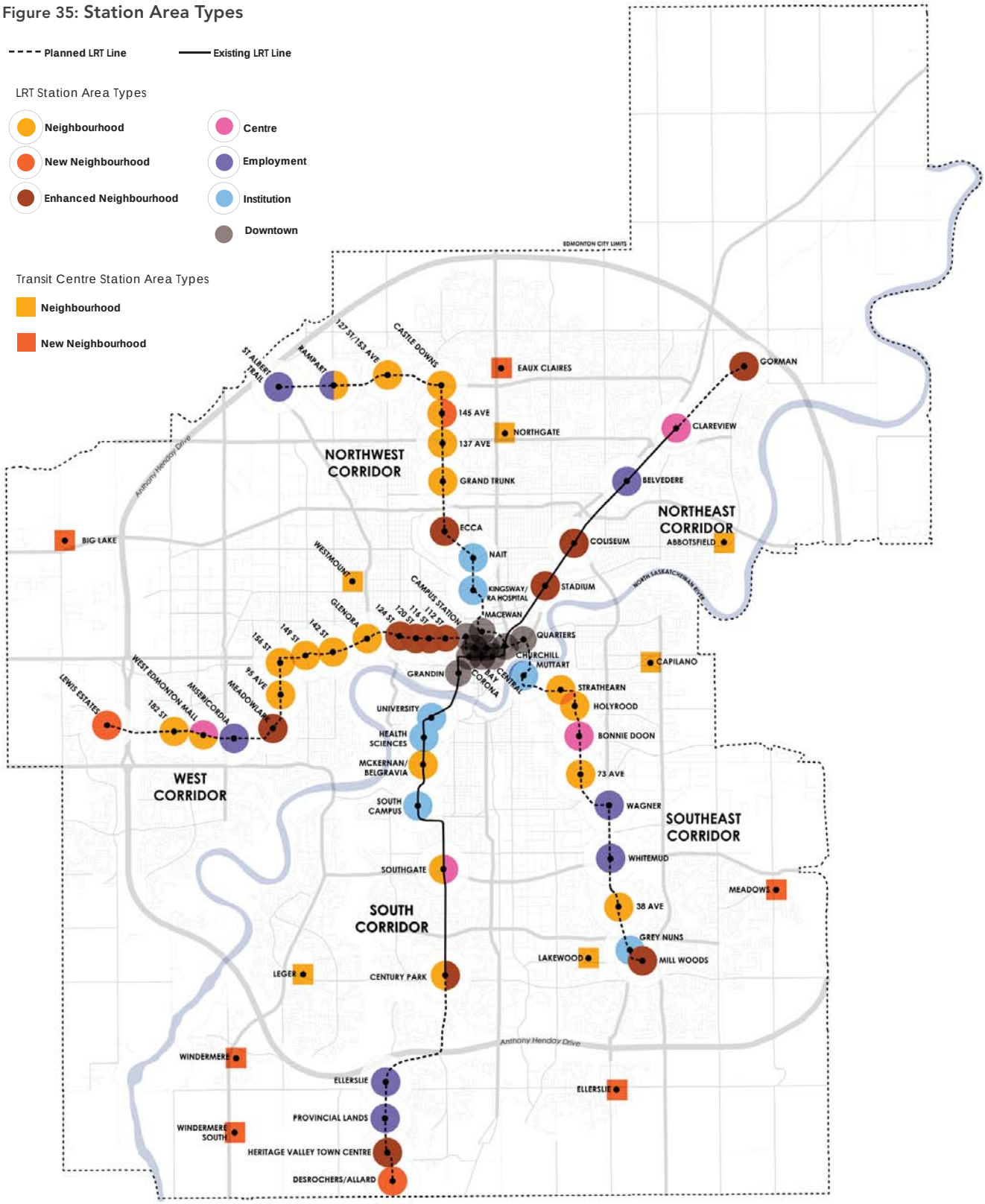
Based on these assessments, the following seven Station Area Types were identified and applied to each existing and planned station area:

- Neighbourhood
- New Neighbourhood
- Enhanced Neighbourhood
- Centre
- Employment
- Institution/Recreation
- Downtown

Half station types were assigned in five stations due to two distinct neighbourhood characteristics existing within one station area.

- 145 Ave
- Century Park
- Rampart
- Southgate
- West Edmonton Mall

Figure 35: Station Area Types



STATION AREA TYPE CHARACTERISTICS

Figure 36: Neighbourhood

NEIGHBOURHOOD

Location

- Infill development settings.

Current Characteristics

- Predominantly single-family homes.
- Condition and value of homes vary widely.
- A mix of multi-family, employment and retail uses may occur, especially at stations close to downtown and along arterial roadways.
- Street grids are typically present within more urbanized areas; fewer are present within suburban areas and often include cul-de-sacs.

Appropriate TOD Characteristics

- **Infill–**2 storey townhomes and duplex housing, except on arterials, collector roads and large sites where 4 storey apartment housing is appropriate. Neighbourhood serving retail uses, eating and drinking establishments and professional offices close to station. Improved pedestrian and bike access.

Land Use and Intensity Guidelines on page 47.

Figure 37: New Neighbourhood

NEW NEIGHBOURHOOD

Location

- Predominately greenfield development settings.

Current Characteristics

- Predominantly undeveloped land and large redevelopable sites; in some cases, portions of the area may already be developed for predominately single-family housing.
- Large development or redevelopment sites.

Appropriate TOD Characteristics

- **Infill–**2 storey townhomes and duplex housing, except on arterials, collector roads and large sites where 4 storey apartment housing is appropriate. Neighbourhood serving retail uses, eating and drinking establishments and professional offices close to station. Improved pedestrian and bike access.
- **Greenfield–**2 to 3 storey townhomes and 4 storey apartments. Neighbourhood serving retail uses, eating and drinking establishments and professional offices close to station. Interconnected street grid interspersed with neighbourhood parks.

Land Use and Intensity Guidelines on page 48.

Figure 38: Enhanced Neighbourhood

ENHANCED NEIGHBOURHOOD

Location

- Infill and Greenfield development settings.

Current Characteristics

- No predominant use; existing uses vary from large redevelopment sites, such as the Edmonton City Centre Redevelopment, to existing shopping centres.
- Typically in close proximity to regional. employment, shopping or recreational uses
- Large development or redevelopment sites.
- Street grids may be present; however, large redevelopment sites may lack auto, pedestrian and bicycle infrastructure.

Appropriate TOD Characteristics

- Higher density residential.
- Neighbourhood-serving street-oriented retail shops—grocery and drug stores and other anchor retail.
- Neighbourhood employment—professional offices and services.
- Neighbourhood urban parks.
- Street grid throughout.
- Improved pedestrian and bicycle connectivity through existing and surrounding neighbourhoods.

Land Use and Intensity Guidelines on page 49.

Figure 39: Centre

CENTRE

Location

- Infill settings only.

Current Characteristics

- Predominantly retail; existing uses may include shopping destinations such as West Edmonton Mall.
- Potential development sites consist mostly of parking lots or other low-intensity uses.
- Street grids typically absent; lacking pedestrian and bicycle access to residential areas.
- Regional auto access; adjacent to major roadways.

Appropriate TOD Characteristics

- Primary shopping destination.
- Higher density residential housing coupled with park amenities.
- Neighbourhood employment—professional offices and services.
- Street grid within development site.
- Significant street-oriented retail uses.
- Maintain and strengthen existing retail.
- Improved pedestrian and bicycle connectivity to surrounding neighbourhoods.

Land Use and Intensity Guidelines on page 50.

Figure 40: Employment

EMPLOYMENT

Location

- Infill and greenfield settings.

Current Characteristics

- Predominantly undeveloped land or low-intensity employment.
- Regional auto access; adjacent to major roadways.
- Street grid absent within development sites.
- Poor bicycle and pedestrian connectivity to existing residential areas.

Appropriate TOD Characteristics

- Low-rise professional offices and services, such as corporate headquarters or research and development uses.
- Medical campus/hospital use.
- Major transit park & ride facility at select stations adjacent to major roadways.
- Street-oriented employment and neighbourhood serving retail.
- Higher density residential uses.
- Street grid throughout development sites.
- Improved pedestrian and bicycle connectivity to surrounding neighbourhoods.

Land Use and Intensity Guidelines on page 51.

Figure 41: Institution/Recreation

INSTITUTION/RECREATION

Location

- Infill and greenfield settings.

Current Characteristics

- Predominantly educational or medical campuses or regional-serving recreation facilities.
- Land use and circulation frameworks are dictated by campus master plans.
- Medical and educational campuses have high transit ridership throughout the day.
- Recreational uses have high peak ridership during events.
- Street grid may be absent throughout campus sites.
- Pedestrian and bicycle access within campus boundaries.

Appropriate TOD Characteristics

- Maintain/strengthen existing campus and/or recreation functions.
- Neighbourhood serving retail at stations—eating and drinking establishments, convenience retail, small grocery and drug stores.
- Improved pedestrian and bicycle connectivity to surrounding neighbourhoods.

Land Use and Intensity Guidelines on page 52.

Figure 42: Downtown

DOWNTOWN

Location

- Downtown area.

Current Characteristics

- A mix of uses is typical throughout.
- Most station land use and circulation frameworks are dictated by existing adopted bylaws and plans.
- Development sites vary in size and location.
- Interconnected street grid.
- Pedestrian and bicycle improvements vary.

Appropriate TOD Characteristics

- Maintain/strengthen existing transit-supportive uses.
- Updated/supplemental bylaws and plans as needed.

Land Use and Intensity Guidelines on page 52.

TOD GUIDELINES

LAND USE AND INTENSITY GUIDELINES

NEIGHBOURHOOD STATION AREAS

The Neighbourhood Station Area Guidelines for LRT stations and transit centres ensure that incremental small-site development is of an appropriate scale and fit. These areas are typically comprised of single-family residential neighbourhoods. Arterial and collector roads and larger sites provide an opportunity for more transit supportive densities, and the guidelines allow for intensification with the provision that development is sympathetic to surrounding existing uses. The guidelines promote a mix of uses. Where opportunity sites meet fundamental real estate siting requirements for access and visibility, neighbourhood-serving retail uses are encouraged. These guidelines should be used in conjunction with the Land Use and Intensity Descriptions (page 53).

Figure 43: Neighbourhood–Land Use and Intensity Guidelines

NEIGHBOURHOOD
LAND USE AND INTENSITY GUIDELINES

EXPECTATIONS FOR LRT AND TRANSIT CENTRE STATION AREAS WITHOUT STATION AREA PLANS

	RESIDENTIAL (NET)	EMPLOYMENT	GROUND FLOOR RETAIL
Sites within 400 metres of the LRT platform or Transit Centre	For sites 1.0 ha or larger: ▪ 125 du/ha min; or For sites fronting or flanking a collector road: ▪ 42 du/ha min to 125 du/ha max; or For sites fronting or flanking an arterial road: ▪ 63 du/ha min to 125 du/ha max; or For all other sites: ▪ 42 du/ha max Secondary or Garage or Garden suites are appropriate on selected sites.	Appropriate on arterial or collector roads, located above ground floor retail.	Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking; or Appropriate on existing shopping centre sites of 2 or more ha. Auto oriented site design is not appropriate. Residential, retail or office uses can be accommodated on upper floors.

EXPECTATIONS FOR ALL PLANS THAT INCLUDE AN LRT OR TRANSIT CENTRE STATION AREA

	RESIDENTIAL	EMPLOYMENT	GROUND FLOOR RETAIL
Area of application varies depending on the neighbourhood context and can extend up to 800 metres from the LRT platform or Transit Centre	Densities are the same as expectations for stations without a Station Area Plan, but these may be increased to accommodate the unique context of the specific neighbourhood.	Appropriate on arterial or collector roads, located above ground floor retail. Should occupy no more than 20% of all net developable area within 400 metres of the LRT platform or transit centre.	Recommended 500 to 2000 m2 cumulative building area within 200 metres of the LRT platform or transit centre. Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking, or on existing shopping centre sites of 2 or more ha. Auto oriented site design is not appropriate. Residential, retail or office uses can be accommodated on upper floors.

NEW NEIGHBOURHOOD STATION AREAS

The New Neighbourhood Station Area Guidelines for LRT stations and transit centres ensure that new development is of a greater density/intensity. This will maximize development opportunities on large-scale sites. The guidelines promote a mix of station- and residential-supportive uses, and ensure development in these areas is of an appropriate scale and form for greenfield opportunities, and infill opportunities when applicable.

Planning and zoning will ensure that the proposed developments are of high architectural quality with a mix that establishes housing as the predominant use with market supportable mixes of retail, commercial and employment.

Figure 44: New Neighbourhood–Land Use and Intensity Guidelines

NEW NEIGHBOURHOOD
LAND USE AND INTENSITY GUIDELINES

EXPECTATIONS FOR LRT AND TRANSIT CENTRE STATION AREAS WITHOUT STATION AREA PLANS

	RESIDENTIAL (NET)	EMPLOYMENT	GROUND FLOOR RETAIL
Sites within 200 metres of the LRT platform or transit centre	For sites 0.25 ha or larger: ▪ 125 du/ha min; or For all other sites: ▪ 63 du/ha min Secondary or Garage or Garden suites are appropriate on selected sites.	Appropriate on sites with direct access to an arterial or collector road. 1.0 FAR min	Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking. Auto oriented site design is not appropriate. Residential, retail or office uses can be accommodated on upper floors.
Sites within 200-400 metres of the LRT platform or transit centre	For sites 0.25 ha or larger: ▪ 63 du/ha min; or For all other sites: ▪ 42 du/ha min Secondary or Garage or Garden suites are appropriate on selected sites.	Guidelines are the same as for sites within 200 metres of the LRT platform or transit centre.	Guidelines are the same as for sites within 200 metres of the LRT platform or transit centre.

EXPECTATIONS FOR ALL PLANS THAT CONTAIN AN LRT OR TRANSIT CENTRE STATION AREA

	RESIDENTIAL	EMPLOYMENT	GROUND FLOOR RETAIL
Area of application varies depending on the neighbourhood context and can extend up to 800 metres from the LRT platform or transit centre	Densities are the same as expectations for stations without a Station Area Plan, but these may be increased to accommodate the unique context of the specific neighbourhood.	Appropriate on sites with direct access to an arterial or collector road. Should occupy no more than 20% of all net developable land area within 400 metres of the LRT platform or transit centre 2.0 FAR min	Recommended 2000 to 14000 m^2 cumulative building area within 400 metres of the LRT platform or transit centre. Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking. Auto oriented site design is not appropriate. Residential, retail or office uses can be accommodated on upper floors.

ENHANCED NEIGHBOURHOOD STATION AREAS

The Enhanced Neighbourhood Station Areas Guidelines allow a blend of appropriate station and residential supportive uses. They ensure development in these areas is of an appropriate scale and form for both large and smaller infill and greenfield opportunities.

Planning and zoning will ensure that the proposed developments are of high architectural quality with a mix that establishes housing as the predominant use with market supportable mixes of retail, commercial and employment.

Figure 45: Enhanced Neighbourhood–Land Use and Intensity Guidelines

ENHANCED NEIGHBOURHOOD
LAND USE AND INTENSITY GUIDELINES

EXPECTATIONS FOR LRT STATION AREAS WITHOUT STATION AREA PLANS

	RESIDENTIAL (NET)	EMPLOYMENT	GROUND FLOOR RETAIL
Sites within 200 metres of the platform	For sites fronting or flanking an arterial or collector road, or on sites 0.25 ha or larger: ▪ 225 du/ha min; or For all other sites: ▪ 125 du/ha min Secondary or Garage or Garden suites are appropriate on selected sites.	Appropriate on sites with direct access to an arterial or collector road. 1.0 FAR min	Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking. Auto oriented site design is not appropriate. Residential, retail or office uses can be accommodated on upper floors.
Sites within 200-400 metres of the platform	For sites 0.25 ha or larger: ▪ 225 du/ha min; or For sites fronting or flanking an arterial or collector road: ▪ 63 du/ha min to 125 du/ha max; or For all other sites: ▪ 63 du/ha max Secondary or Garage or Garden suites are appropriate on selected sites.	Guidelines are the same as for sites within 200 metres of the LRT platform.	Guidelines are the same as for sites within 200 metres of the LRT platform.

EXPECTATIONS FOR ALL PLANS THAT CONTAIN AN LRT STATION AREA

	RESIDENTIAL	EMPLOYMENT	GROUND FLOOR RETAIL
Area of application varies depending on the neighbourhood context and can extend up to 800 metres from the LRT platform	Densities are the same as expectations for stations without a Station Area Plan, but these may be increased to accommodate the unique context of the specific neighbourhood.	Appropriate on sites with direct access to an arterial or collector road. Should occupy no more than 20% of all net developable area within 400 metres of the LRT platform. 2.0 FAR min	Recommended 5000 to 20000 m^2 cumulative building area within 400 metres of the LRT platform. Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking or on existing shopping centre sites of 2 or more ha. Auto oriented site design is not appropriate. Residential, retail or office uses can be accommodated on upper floors.

CENTRE STATION AREAS

The Centre Station Area Guidelines allow a blend of appropriate station and residential supportive uses. They ensure development in these areas is of an appropriate density, scale, and form for all development opportunity sites. The uses allowed in the Centre Station Areas will include retail, office, commercial and higher density residential. Retail uses are expected to be the predominant use, with a minor proportion of commercial and office uses. New development will focus around a corridor serving street-oriented retail centre. Residential use is desirable around these new centre areas particularly as transitional elements when adjacent or in proximity to mature neighbourhoods.

Figure 46: Centre–Land Use and Intensity Guidelines

CENTRE
LAND USE AND INTENSITY GUIDELINES

EXPECTATIONS FOR LRT STATION AREAS WITHOUT STATION AREA PLANS

	RESIDENTIAL (NET)	EMPLOYMENT	GROUND FLOOR RETAIL
Sites within 200 metres of the platform	For sites fronting or flanking an arterial or collector road, or on sites 0.25 ha or larger: ▪ 225 du/ha min; or For all other sites: ▪ 125 du/ha min Secondary or Garage or Garden suites are appropriate on selected sites.	Appropriate on sites with direct access to an arterial or collector road. 1.0 FAR min	Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking. Auto oriented site design is not appropriate. Residential, retail or office uses can be accommodated on upper floors.
Sites within 200 - 400 metres of the platform	For sites 0.25 ha or larger: ▪ 225 du/ha min; or For sites fronting or flanking an arterial or collector road: ▪ 63 du/ha min to 125 du/ha max; or For all other sites: ▪ 63 du/ha max Secondary or Garage or Garden suites are appropriate on selected sites.	Guidelines are the same as for sites within 200 metres of the LRT platform.	Guidelines are the same as for sites within 200 metres of the LRT platform.

EXPECTATIONS FOR ALL PLANS THAT CONTAIN AN LRT STATION AREA

	RESIDENTIAL	EMPLOYMENT	GROUND FLOOR RETAIL
Area of application varies depending on the neighbourhood context and can extend up to 800 metres from the LRT platform	Densities are the same as expectations for stations without a Station Area Plan, but these may be increased to accommodate the unique context of the specific neighbourhood.	Appropriate on sites with direct access to an arterial or collector road. Should occupy no more than 20% of all net developable area within 400 metres of the LRT platform. 2.0 FAR min	Recommended 14000 to 46000 m^2 cumulative building area within 200 metres of the LRT platform. Auto oriented site design is not appropriate. Appropriate on existing shopping centre sites of 2 or more ha; or Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking. Residential, retail or office uses can be accommodated on upper floors.

EMPLOYMENT STATION AREAS

The Employment Station Areas Guidelines encourage appropriate TOD supportive densities for employment uses in suburban settings. They ensure urban setting characteristics while located in suburban areas, and ensure development is of an appropriate density, scale, and form. Employment Station Areas have been located approximately 20 minutes by LRT from downtown to be complementary rather than competitive with downtown employment uses. Allowable uses include office, commercial, retail, higher density residential and park & ride facilities. However the predominant use is expected to be job based with a high jobs per square metre ratio. Essential park & ride facilities may be provided in a manner that does not compromise either pedestrian access to the station or development opportunities. Residential uses would be highly desirable in the vicinity of these new job centres, particularly as transitional uses when in proximity to other neighbourhoods, but employment should still be the dominant use at these stations. Station Plans can prescribe an appropriate mix of uses. However where there is no station plan, residential uses should not be developed immediately adjacent to the platform prior to employment development to protect these areas for employment use.

Figure 47: Employment–Land Use and Intensity Guidelines

EMPLOYMENT
LAND USE AND INTENSITY GUIDELINES

EXPECTATIONS FOR LRT STATION AREAS WITHOUT STATION AREA PLANS

	RESIDENTIAL (NET)	EMPLOYMENT	GROUND FLOOR RETAIL
Sites within 200 metres of the platform	For all sites: ▪ 225 du/ha min Secondary/Garage/Garden suites are appropriate on selected sites.	Appropriate. 1.0 FAR min	Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking. Auto oriented site design is not appropriate. Residential, retail or office uses can be accommodated on upper floors.
Sites within 200 - 400 metres of the platform	For sites 0.25 ha or larger: ▪ 225 du/ha min or For sites fronting or flanking an arterial or collector road: ▪ 63 du/ha min to 125 du/ha max; or For all other sites: ▪ 63 du/ha max Secondary or Garage or Garden suites are appropriate on selected sites.	Appropriate on sites with direct access to an arterial or collector road. 1.0 FAR min	Guidelines are the same as for sites within 200 metres of the LRT platform.

EXPECTATIONS FOR ALL PLANS THAT CONTAIN AN LRT STATION AREA

	RESIDENTIAL	EMPLOYMENT	GROUND FLOOR RETAIL
Area of application varies depending on the neighbourhood context and can extend up to 800 metres from the LRT platform	Densities are the same as expectations for stations without a Station Area Plan, but these may be increased to accommodate the unique context of the specific neighbourhood. Should occupy no more than 30% of all net developable area within 400 metres of the Station Area.	Appropriate. 2.0 FAR min	Recommended 2000 to 8000 m^2 cumulative building area within 200 metres of the LRT platform. Appropriate on sites with direct access to an arterial or collector road, supported by curbside parking. Auto oriented site design is not appropriate. Residential, retail or office uses can be accommodated on upper floors.

INSTITUTION/RECREATION AND DOWNTOWN STATION AREAS

Each Institution/Recreation Station Area typically has its own unique needs. They often have specific existing applicable zoning regulations and uses and are usually defined by institutional master planning in anticipation of long-term institutional expansion. As such, detailed guidelines specific to Institutional Areas have not been proposed. Where no Institution/Recreation master plan exists, guidelines for the Neighbourhood Station Area Type will apply within 400 metres of the LRT station or transit station.

As Downtown Station Areas have highly specific and evolved existing applicable zoning regulations and plans, detailed guidelines specific to downtown have not been proposed.

Figure 48: Institution/Recreation–General Guidelines

INSTITUTION/RECREATION GENERAL GUIDELINES

As individual projects, Station Area Plans, master plans or other major re-zoning or planning efforts are undertaken for Institution/Recreation Areas, particular attention should be paid to the Urban Design Principles to ensure the highest quality and best urban form achievable is demanded of these intensely developed and transit-supportive areas.

All proposed development, including new infill development, should be compatible with the existing context. Should the new development be adjacent or proximate to mature neighbourhoods, this must be achieved through the following:

- Use of quality and contextually-appropriate materials.
- Compatible roof forms and façade composition.
- Articulation of building masses and façades to define scale.
- Screening and/or landscaping of parking, mechanical, and other elements incompatible with the surrounding context.
- Locating windows and entries to maximize privacy and minimize impacts for adjacent properties.
- Providing on-site amenities (landscaped areas, open space) appropriate to the scale of the development to buffer older, adjacent residential areas.

Figure 49: Downtown–General Guidelines

DOWNTOWN GENERAL GUIDELINES

As individual projects, Station Area Plans, or other major rezoning or planning efforts are undertaken for Downtown areas, particular attention should be paid to the Urban Design Principles to ensure the highest quality and best urban form achievable is demanded of these intensely developed and transit-supportive areas.

All proposed development, including new infill development, should be compatible with the existing context. Should the new development be adjacent or proximate to mature neighbourhoods, this must be achieved through the following:

- Use of quality and contextually-appropriate materials.
- Compatible roof forms and façade composition.
- Articulation of building masses and façades to define scale.
- Screening and/or landscaping of parking, mechanical, and other elements incompatible with the surrounding context.
- Locating windows and entries to maximize privacy and minimize impacts for adjacent properties.
- Providing on-site amenities (landscaped areas, open space) appropriate to the scale of the development to buffer older, adjacent residential areas.

LAND USE AND INTENSITY DESCRIPTIONS

The graphics on the following pages illustrate land use and intensity expectations identified on the Land Use and Intensity Guideline tables. These descriptions should be used in conjunction with the guideline table.

Figure 50: 42 DU/HA (Dwelling Units per Hectare)

42 DU/HA RESIDENTIAL

ROW HOUSE

The above image illustrates typical building form, scale and massing only. Building character can vary and will be determined by site context.

Figure 51: 63 DU/HA (Dwelling Units per Hectare)

63 DU/HA RESIDENTIAL

STACKED ROW HOUSE

The above image illustrates typical building form, scale and massing only. Building character can vary and will be determined by site context.

Figure 52: 125 DU/HA (Dwelling Units per Hectare)

125 DU/HA RESIDENTIAL

LOW-RISE APARTMENT

The above image illustrates typical building form, scale and massing only. Building character can vary and will be determined by site context.

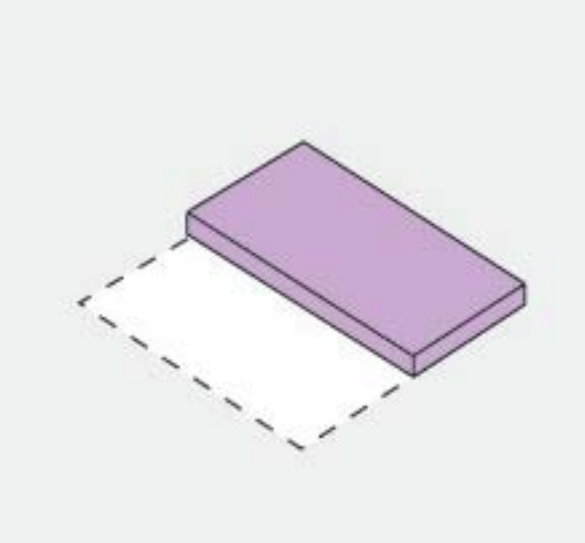
Figure 53: 225 DU/HA (Dwelling Units per Hectare)

225 DU/HA RESIDENTIAL

MID-RISE APARTMENT

The above image illustrates typical building form, scale and massing only. Building character can vary and will be determined by site context.

Figure 54: 0.5 F.A.R. (Floor Area Ratio)

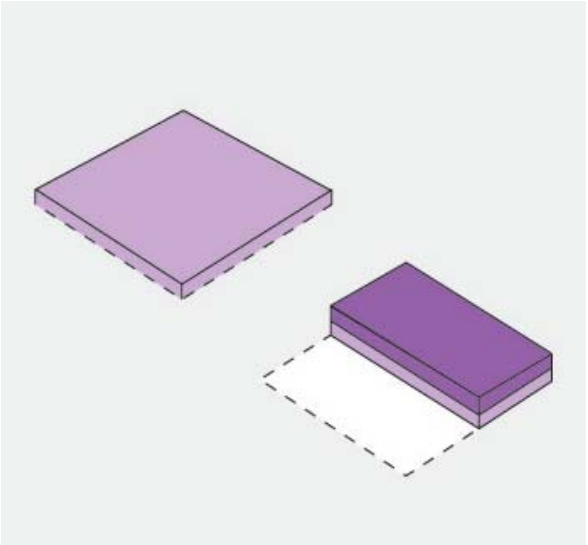


0.5 F.A.R. EMPLOYMENT

The above graphic illustrates an example of 0.5 F.A.R.

The above image illustrates typical building form, scale and massing only. Building character can vary and will be determined by site context.

Figure 55: 1.0 F.A.R. (Floor Area Ratio)

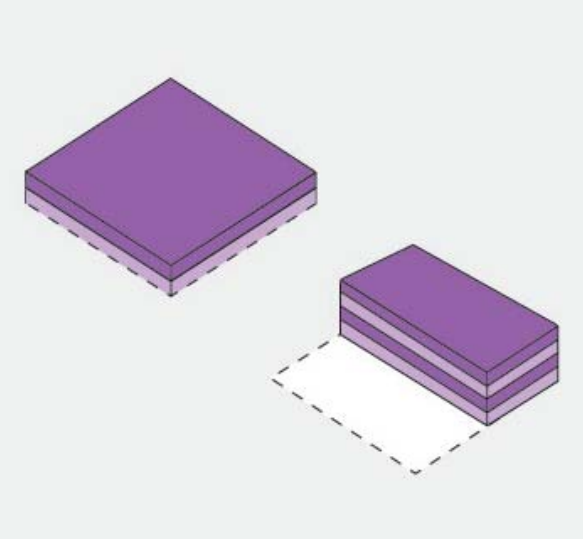


1.0 F.A.R. EMPLOYMENT

The above graphic illustrates examples of 1.0 F.A.R.

The above image illustrates typical building form, scale and massing only. Building character can vary and will be determined by site context.

Figure 56: 2.0 F.A.R. (Floor Area Ratio)



2.0 F.A.R. EMPLOYMENT

The above graphic illustrates examples of 2.0 F.A.R.

The above image llustrates typical building form, scale and massing only. Building character can vary and will be determined by site context.

BUILDING AND SITE DESIGN GUIDELINES

PURPOSE

The guidelines ensure that buildings activate and engage the public realm to contribute to a safe and active street environment. The character of new development should be compatible with surrounding existing uses. Opportunity exists to build upon the area's character or develop unique localities.

For residential uses, private and common amenity areas should be provided that are appropriate to the scale of development. Generally, all units should have some private amenity area. Apartment developments should include an indoor or outdoor common amenity space for use by the residents of the development. In the case of larger developments, a combination of indoor and outdoor common amenity should be provided.

Apartment developments should incorporate family suitable housing, particularly at the ground level where there is a private exterior unit entry and opportunity for a private at-grade amenity area. Apartment development, retail and employment uses should accommodate bicycle parking on site.

Parking requirements in LRT station areas and transit centres should be lower than outside of these areas. The separation of parking for residential land use and shared parking for non-residential land uses should be considered also in these areas.

The tables and diagrams on the following pages describe building and site design elements. These guidelines may be initiated by the City of Edmonton.

Figure 57: **Building and Site Design Guidelines**

ALL STATION AREA TYPES
BUILDING AND SITE DESIGN GUIDELINES

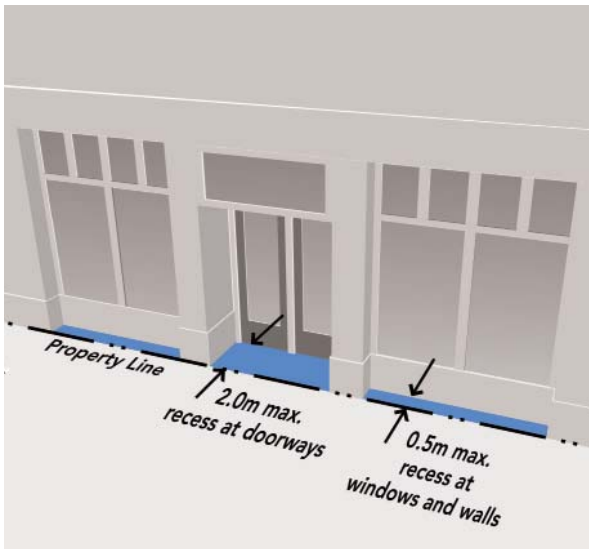
	ALL USES		
Site Design	All buidings should front onto a street. Parking for low, mid and high rise apartments, and commerical office buildings should be located primarily underground. Surface parking should be located away from the street and designed in smaller clusters, separated by landscaped areas. Retail and commercial buildings should be designed to create the appearance of small (10 m) regularly spaced frontages along the street.		
Building Design	Use of sympathetic, quality, contextually appropriate material. Use of compatible roof forms and façade composition. Articulation of building masses and façade to define scale. Use of landscaping to screen parking, mechanical, and garbage areas. Location of windows and entries to maximize privacy for adjacent properties.		
Transition	Development of 4 storeys in height: On sites abutting a single detached, semi detached, or row housing zone, the height of the abutting facade should be stepped down to the maximum height permitted in the adjacent zone so that there is a transitioning of height between the two developments to be more compatible in mass and scale. Development of 5 to 6 storeys in height: On sites abutting a single detached, semi detached, or row housing zone, the height of the abutting facade should be stepped down to the maximum height permitted in the adjacent zone, and additional step backs should be incorporated into the building so that the bulk of the building is located away from the shared property line. Development over 6 storeys in height should only be located where a Station Area Plan has been prepared to accommodate transitions or on a large site of 1 or more hectares so that appropriate transitions can be accommodated on site.		
	RESIDENTIAL USES	**CIVIC/CULTURAL/EMPLOYMENT USES**	**RETAIL USES**
Building Setback from Street	3 metres max. for ground-floor uses.	3 metres max. for ground-floor uses.	0 metres max. for ground-floor uses.
Entries	Ground level units fronting a street to provide a primary street-facing entry. Ground level units fronting accessway or courtyard to provide a primary exterior entry.	Ground level uses fronting a street to provide a primary street-facing lobby entry.	Ground level to provide a primary street-facing entry.
Transparency	50% transparency at street level.	70% transparency at street level.	70% transparency at street level.

Building and Site Design Descriptions are on pages 60 to 65.

BUILDING AND SITE DESIGN DESCRIPTIONS

The graphics on the following pages illustrate the expectations identified on the Building and Site Design Guidelines table. These descriptions should be used in conjunction with the guideline table.

Figure 58: 0 m Building Setback and Exceptions



0 M BUILDING SETBACK

Bringing buildings to the street-fronting property line results in an efficient use of land. Orienting ground-floor uses toward the pedestrian boulevard frames and encloses the public street.

For retail uses, buildings built to the public boulevard provide easy access for pedestrians and essential visibility for those traveling along adjacent roadways.

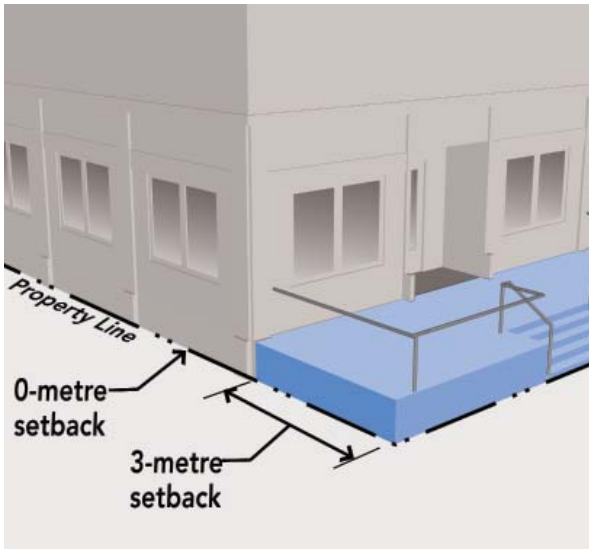
Setbacks apply to ground floors only. Buildings may be set back on any floor above the ground floor.

Exceptions

Within the setback, some door, window and wall recesses are permitted.

Additional setback may be required in the form of an easement to provide space for sidewalks or landscaping to enhance the public boulevard, where the public boulevard is less than 4 metres.

Figure 59: 3 m Building Setback and Exceptions



3 M BUILDING SETBACK

The 3-metre maximum setback encourages buildings to be placed near the street. This results in an efficient use of land. It orients the ground-floor uses toward the pedestrian boulevard, which adds to the vitality and safety of the street. It also provides a semi-private transition and separation between those traveling along public boulevards and those residing in adjacent buildings.

Setbacks apply to ground floors only. Buildings may be setback on any floor above the ground floor.

Exceptions

Within the setback, private or publicly accessible walks, patios, porches, steps, stoops, or terraces are permitted.

Figure 60: **Residential Street Entries**

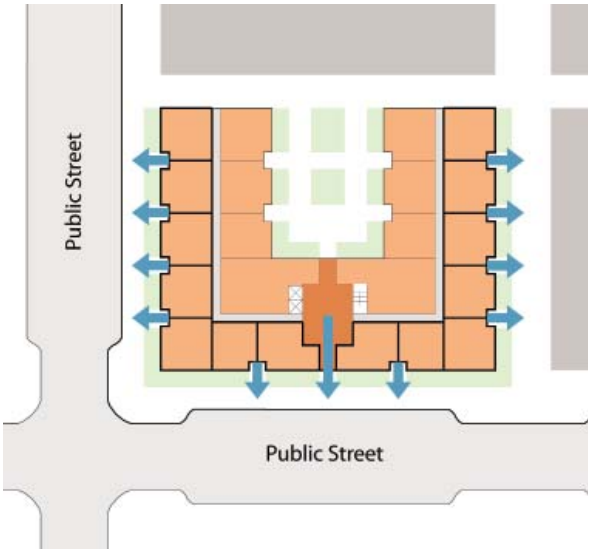
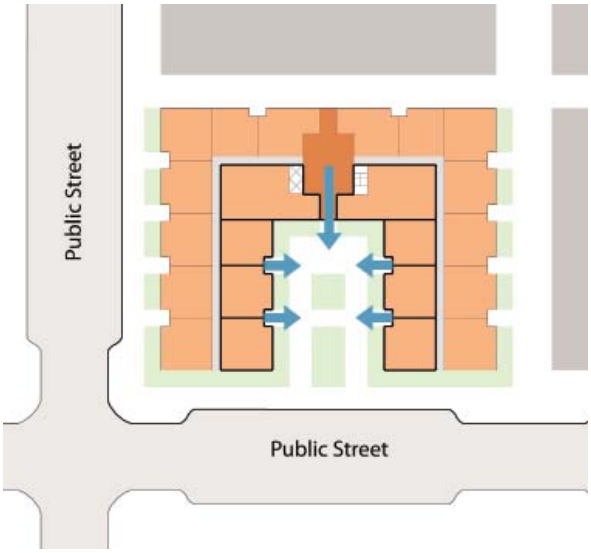


Figure 61: **Residential Courtyard Entries**

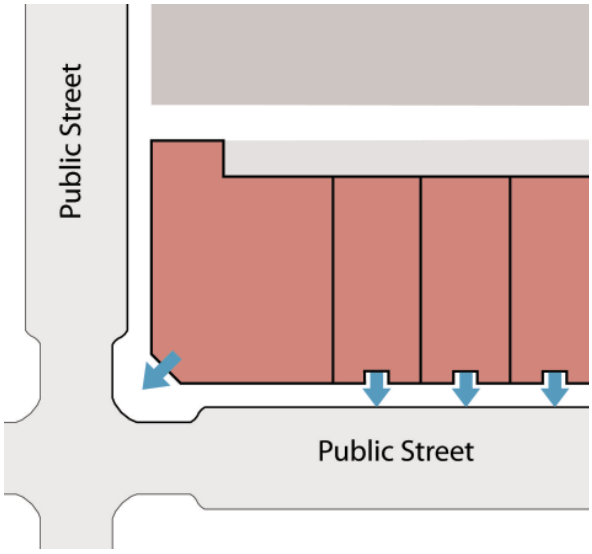


RESIDENTIAL ENTRIES

Ground-floor individual dwelling units and main lobby entries should be oriented to the street or to a street-facing courtyard to contribute to the vitality and safety of station areas through 'eyes on the street' surveillance.

By locating entries facing the street, residents and visitors will enter and exit the building from the public boulevard, thereby activating and animating the public realm.

Figure 62: **Retail Entries**

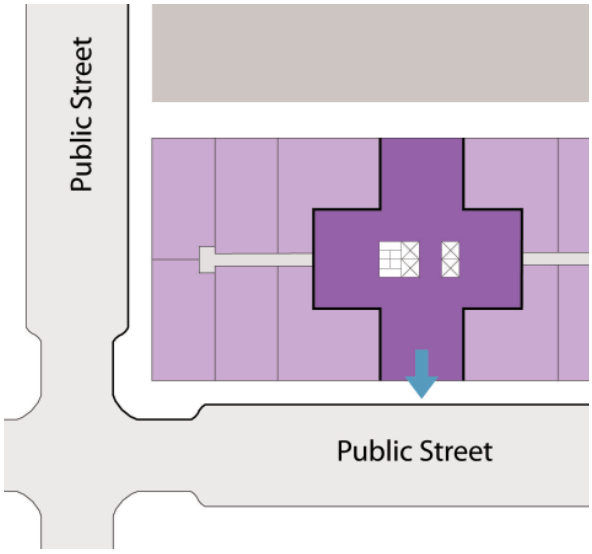


RETAIL ENTRIES

Individual retail shop entries should be oriented to the street to contribute to the vitality and safety of station areas through 'eyes on the street' surveillance and the use of pedestrian boulevards to access these uses.

- Primary business entries should face the street; Secondary entries are permitted along all other frontages.
- Retail entries should have at-grade entries fronting public boulevards; ramps or steps are prohibited.
- All doorway glazing should be transparent; tinted, reflective or other opaque materials or treatments shall be prohibited.

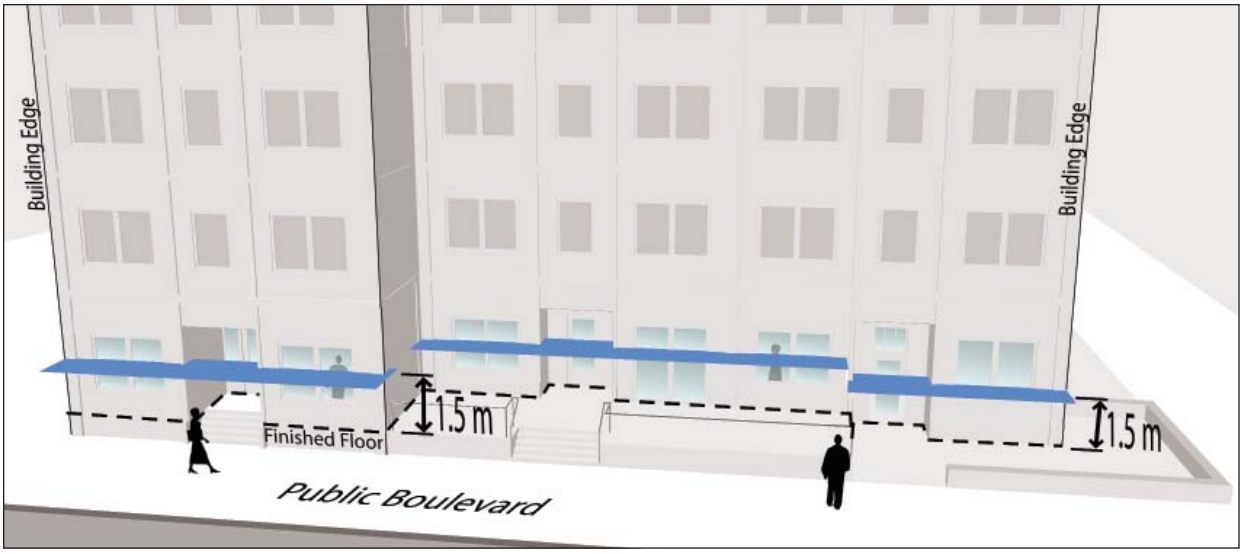
Figure 63: **Employment Lobby Entries**



EMPLOYMENT ENTRIES

Entries to main lobbies of ground-floor employment uses should be oriented to the street to allow direct access from the public boulevard, promoting activity on public streets.

Figure 64: 50% Transparency -Residential

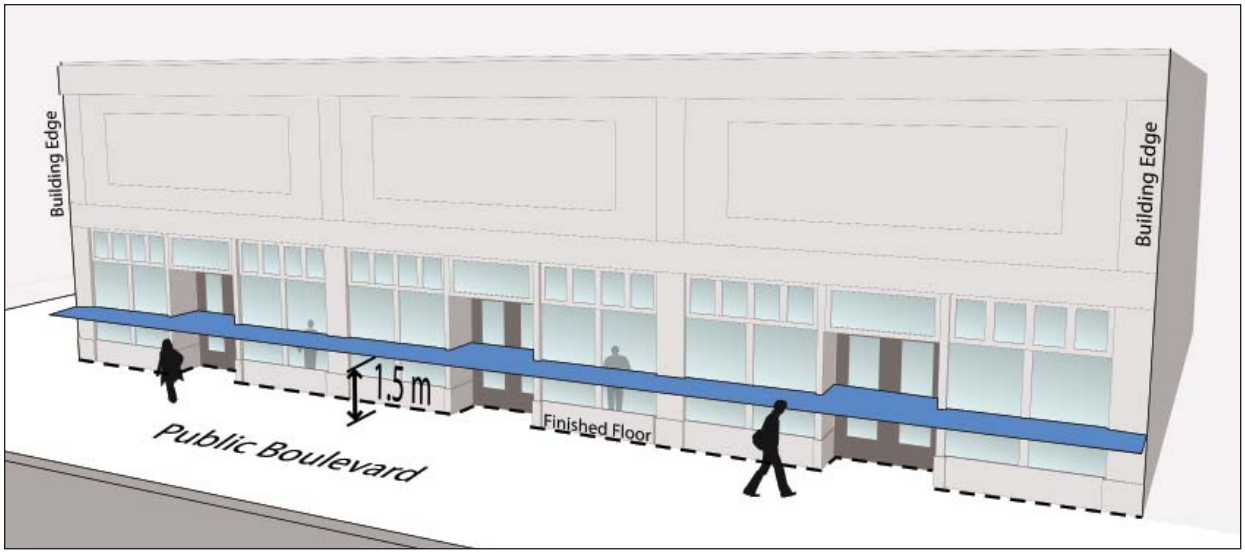


50% LINEAR TRANSPARENCY

A moderate degree of visibility through windows and/or doors is appropriate for all residential uses located at the ground floor.

- The percent of transparency is measured at 1.5 metres above the building's first finished-floor height to account for raised stoops or terraces, which provide privacy, and a transition and separation from the public boulevard.
- Linear transparency measurement encompasses the entire building frontage.

Figure 65: 70% Transparency -Retail and Employment

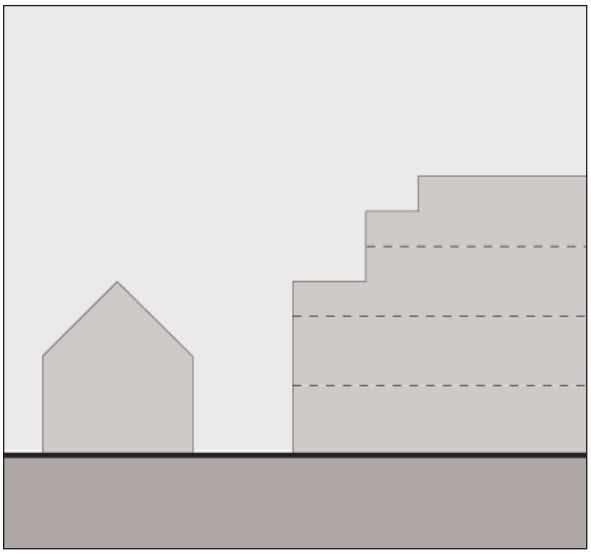


70% LINEAR TRANSPARENCY

A high degree of visibility through building windows and/or doors can support safe and active streets by creating a visual connection between pedestrians and building users. This level of transparency is appropriate for all retail and employment uses located at the ground floor. The opening:

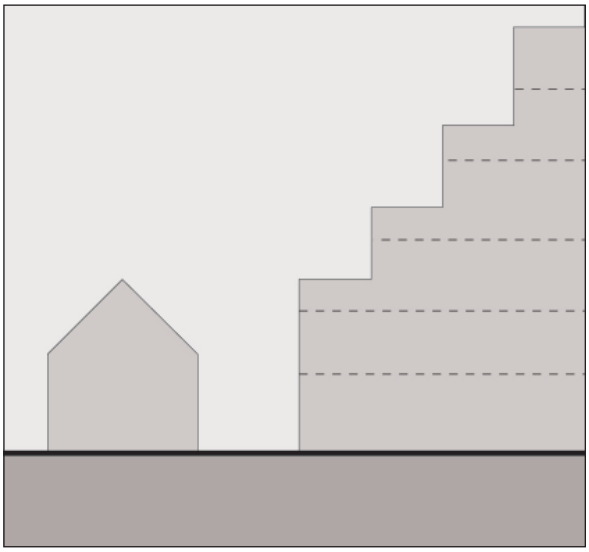
- Is measured as linear metres of total building frontage.
- Should be measured 1.5 metres above the finished grade of the adjacent public boulevard to promote optimum visibility for passers-by.
- Should be entirely transparent with the exception of applied window signs that shall be no larger than 10% of any single opening.
- Should not include tinted, reflective or other opaque materials or treatments.

Figure 66: Transitions



TRANSITION

Single-Family Row Housing / 4 Storey Buildings



TRANSITION

Single-Family Row Housing / 5-6 Storey Buildings

As redevelopment occurs around station areas, there will be some instances where low- and mid-rise apartments develop adjacent to existing smaller scale row housing, duplex and single-family homes. New apartment developments should be designed to create a gradual transition in height, to address both the visual appearance from the street and the potential impacts of shadow and loss of privacy for the smaller scale existing development.

PUBLIC REALM GUIDELINES—BLOCK

Public Realm Guidelines will be applied in the following circumstances:

- Where the site is 1.0 hectare or greater.
- Where a statutory plan that includes an LRT station area or transit centre is created.
- Where a statutory plan within 800 metres from an LRT station or 400 metres from a transit centre is being amended.

The introduction of new blocks into the existing street fabric should be done in a way that affords appropriate connections and respects existing patterns. However, new block patterns must also appropriately address current needs for development types, multi-modal transportation goals, and pedestrian and bicycle access.

Figure 67: All Station Areas–Block Guidelines

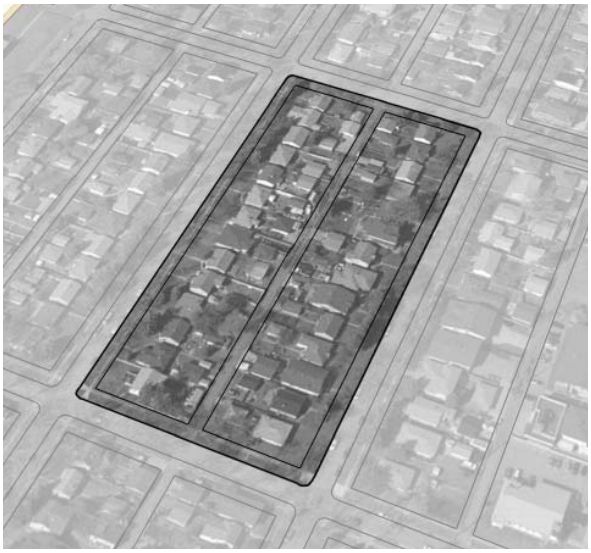
ALL STATION AREAS BLOCK GUIDELINES				
EXPECTATIONS FOR LARGE SITES OR PLANS THAT CONTAIN AN LRT OR TRANSIT CENTRE STATION AREA				
Thresholds	**All new development blocks are encouraged to have:** ▪ One mid-block accessway for block lengths greater than 130 metres or two mid-block accessways for block lengths greater than 200 metres (block lengths of greater than 200 metres should only exist in infill development settings).			
Element	**BLOCK DIMENSIONS**	**MID-BLOCK ACCESSWAYS**	**ALLEYS**	**STORMWATER DETENTION**
Within 400 Metres of Station Platform	▪ 100 m width x 200 m length block size (max) ▪ Rectangular blocks are to be oriented with the width facing the LRT alignment/ corridors and the length perpendicular to the LRT alignment/ corridor.	▪ 10 m width (min).	May be appropriate for blocks 85 m wide or greater. For the Neighbourhood Station Area: ▪ Provide a 6 m (min) alley width, including a 4 m vehicle throughway. For all other Station Areas: ▪ Provide a 6 m (min) alley width, including a 6 m vehicle throughway. ▪ Provide lighting at 50 m max. spacing.	▪ Located in vaults or in bio-swales within curb extensions ▪ Prohibit stormwater detention (bio-swales) adjacent to the station platform

Block Descriptions are on pages 67 to 69.

BLOCK DESCRIPTIONS

The graphics on the following pages illustrate the expectations identified on the Block Guidelines table. These descriptions should be used in conjunction with the guideline table.

Figure 68: Typical Edmonton Block

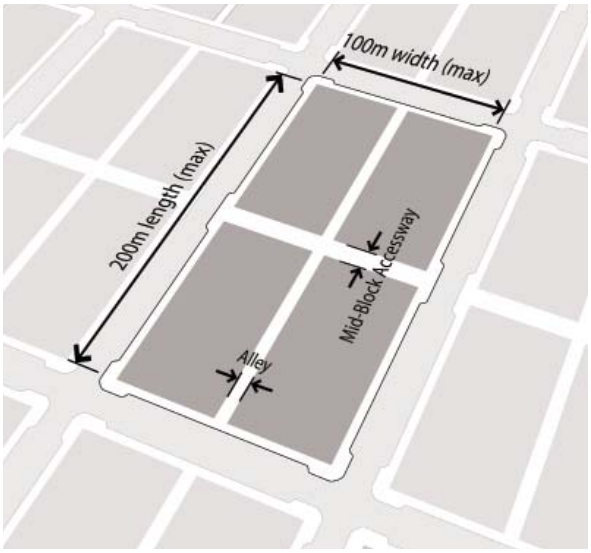


EDMONTON'S BLOCKS

Edmonton's street grid consists of numerous block sizes and patterns, reflective of the time period and topography in which they were built. Like many other cities, a block size was defined for downtown and residential patterns at the City's inception. As the City developed, the initial pattern was typically duplicated, though different eras and conditions led to some variety in block sizes.

Most blocks are rectangular—the shorter side representing the width and the longer side representing the length—and the blocks are roughly twice as long as they are wide. Block sizes vary from 75 to 100 metres in width and up to 250 metres in length. Most residential blocks have a mid-block service alley running the block length.

Figure 69: Maximum Block Size



BLOCK SIZE AND CONFIGURATION

Block guidelines have been developed that:

- Establish appropriate maximum block dimensions.
- Permit the typical alley pattern.
- Introduce mid-block pedestrian/bicycle access ways.

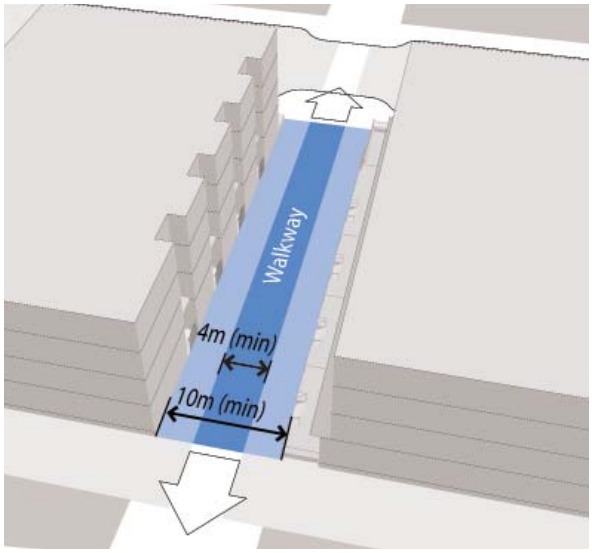
Block dimensions, and the street grid they form, are among the most critical elements in ensuring a walkable and bikeable community. The connectivity established by smaller block dimensions and a greater number of multi-modal linkages will support transit ridership by providing more access routes to the station and disperse vehicle traffic to create livable communities.

Figure 70: **Mid-Block Accessway Example**

MID-BLOCK ACCESS WAYS

Mid-block access ways should be publicly accessible 24-hours a day. This can be accomplished through public ownership or public easement.

Figure 71: **Mid-Block Accessway**



MID-BLOCK ACCESSWAYS

For redevelopment and new development, mid-block accessways are encouraged to break up blocks of 130 metres or more in length and:

- Result in development sites with more pedestrian and bicycle connections, visual permeability, and pedestrian-scaled building footprints.
- Provide attractive linear amenities that serve as passive recreation spaces for adjacent housing, retail and employment uses.
- May include limited vehicle access for vehicle loading, drop-off and deliveries, and on-site private parking facilities.

Figure 72: Alley

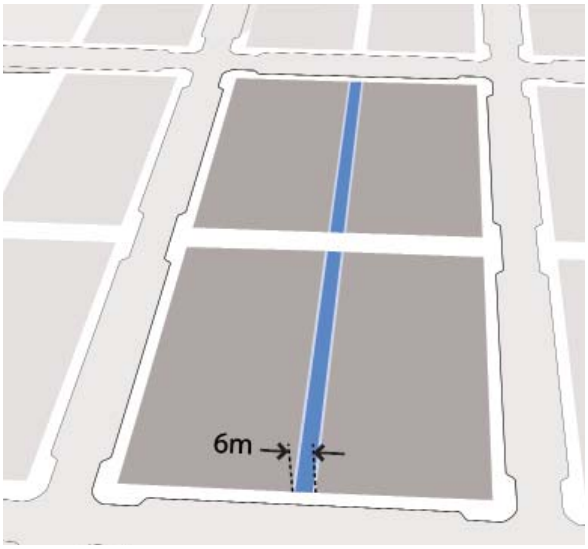


Figure 73: Alley in an Enhanced Neighbourhood

ALLEYS

Typical alleys in Edmonton provide a location for utilities and services that would otherwise be provided at the street. This pattern should continue.

Where appropriate, use of alleys is encouraged to break up development blocks of 85 metres or more in width in order to:

- Reduce the width of development sites to provide more pedestrian-scaled building footprints.
- Allow fewer vehicle access points on local streets and more on-street parking.
- Provide space for unsightly overhead utilities and trash storage and collection.

The 6m width allows two vehicles to pass, while providing a dimension and spatial proportion suitable for pedestrian and bicycle passage. Shallow utilities (i.e. cable and communications utilities) are recommended to be located within alleys to reduce visual clutter on the streets.

Alleys may not be appropriate for all development blocks because land use types and/or intensities may require larger floorplates.

PUBLIC REALM GUIDELINES—PUBLIC BOULEVARD

Properly designed public boulevards contribute to the quality and safety of the pedestrian environment. The Public Boulevards Guidelines define essential elements to best serve these objectives. Adequate dimensioning offers an appropriate space for passage and shopping. Well-scaled furnishing zones separate pedestrians and cars, and allow for the placement of trees, streetlights, benches, landscaping, and other street serving elements. Undergrounding utilities where possible minimizes visual clutter and maintenance. Overhead weather protection creates gathering and viewing places while providing year-round protection from the elements.

Figure 74: All Station Areas–Public Boulevard Guidelines

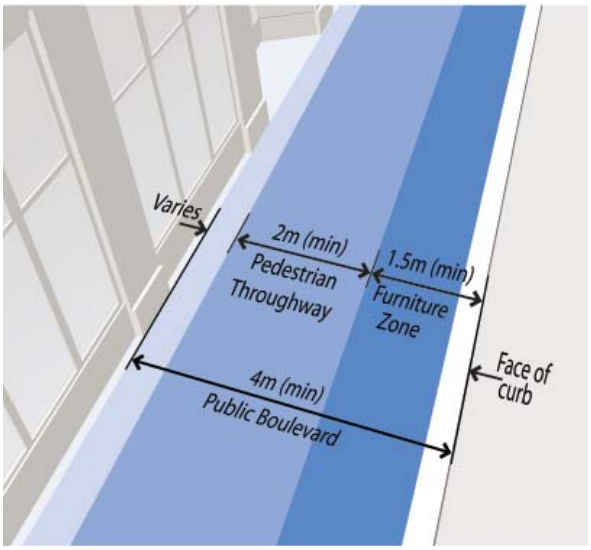
ALL STATION AREAS PUBLIC BOULEVARD GUIDELINES					
EXPECTATIONS FOR LARGE SITES OR PLANS THAT CONTAIN AN LRT OR TRANSIT CENTRE STATION AREA					
Thresholds	**Public boulevard improvements are encouraged for development sites that extend from:** ▪ Block corner to block corner. ▪ Alley to block corner. ▪ Mid-block accessway to block corner. ▪ Mid-block accessway to mid-block accessway.				
Uniform Expectations	**All new public streets should have public boulevards on both sides of the street that:** ▪ Are not less than 4 metres wide (minimum). ▪ Are universally accessible. ▪ Include the boulevard elements described below. **All new development with a 0-metre setback should include overhead weather protection (i.e. awnings) that extends over the public boulevard and meets the following:** ▪ Projection–1.5 m minimum on front building façade. ▪ Internal illumination of the awning should be discouraged. ▪ Fascia signs–25 cm maximum.				
Elements	**PEDESTRIAN THROUGHWAY**	**FURNITURE ZONE**	**LIGHTING**	**STREET TREES**	**UTILITIES**
	▪ 2 m (min) width. ▪ Limit vehicle accesses to 2 per block face. For streets adjacent to ground-floor retail: ▪ Prohibit driveways or vehicle access (except for access to alleys).	▪ 1.5 m width (min). ▪ Paved or landscaped	▪ Pedestrian-scaled lighting should be provided within the station area. ▪ Locate light standard in furniture zone.	For all block faces: ▪ Space trees 8 m apart (max) along block face. ▪ Locate trees in furniture zone within tree wells, grates or planters. For streets adjacent to the station: ▪ Provide canopy-forming street tree varieties.	▪ Locate below grade with the exception of overhead LRT-related utilities.

Public Boulevard Descriptions are on pages 71 to 73.

PUBLIC BOULEVARD DESCRIPTIONS

The graphics on the following pages illustrate the expectations identified on the Public Boulevard Guidelines table. These descriptions should be used in conjunction with the guideline table.

Figure 75: Public Boulevard



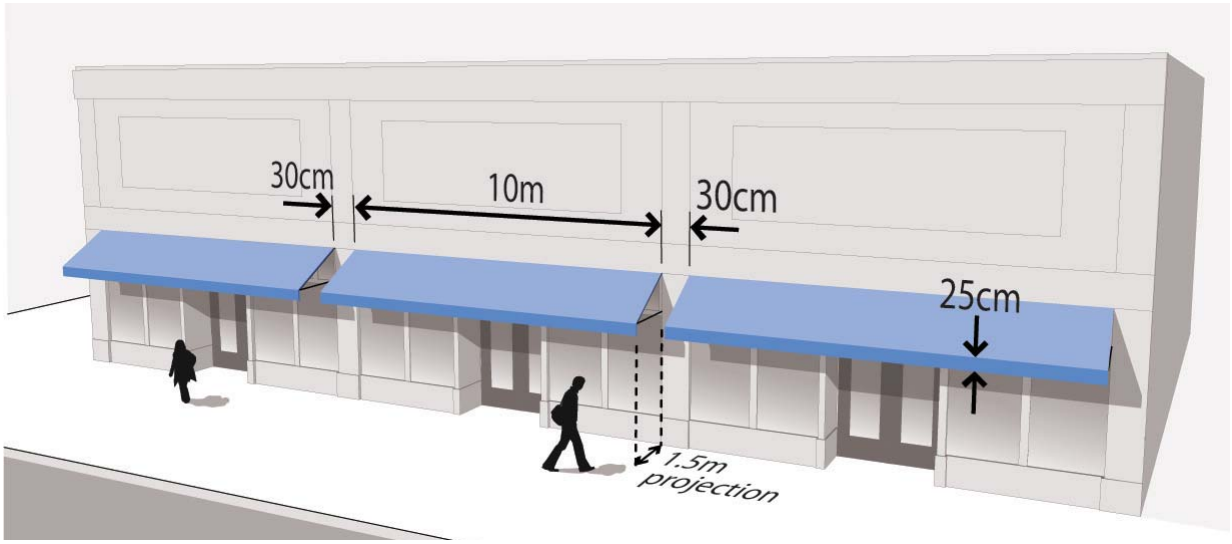
PUBLIC BOULEVARD

To enhance pedestrian safety and comfort and encourage walking as a viable means of transportation in station areas, all new and renovated public boulevards should:

- Consist of unobstructed pedestrian throughway, furniture and curb zones.
- Meet the minimum dimensions for each zone.
- Be universally accessible.
- Consist of well-defined and quality-finished materials.

Adjacent to the station platform, non-LRT serving utilities should be located underground. Whenever possible, utilities should be located underground throughout the station area to prevent visual and physical clutter.

Figure 76: Overhead Weather Protection Example



OVERHEAD WEATHER PROTECTION

Sloped awnings and horizontal canopies provide rain and snow protection along building frontages. They support the attractiveness and success of retail when placed in those active storefront locations.

Figure 77: **Street Trees**

STREET TREES

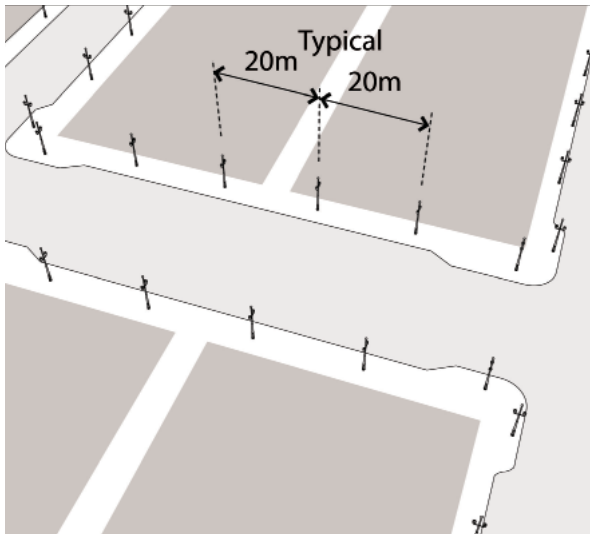
Appropriate tree species, spaced at 8 metres, enhance the quality of a station area's public boulevards. Street trees can:

- Provide a visual softening to the built environment.
- Buffer pedestrians from the auto environment.
- Minimize summer heat gain.

Street trees should be located within the furniture zone on public boulevards.

Street trees should be planted and maintained in accordance with existing City of Edmonton requirements. Street tree selection should conform to the City's approved street tree list.

Figure 78: **Street Lighting Example**



STREET LIGHTING

To contribute to the safety, quality, and vitality of a station area, the spacing, height and lumens of street lights should be considered. This is intended to:

- Ensure pedestrian-scaled lighting of sidewalks and crosswalks.
- Illuminate the public boulevard.
- Prevent auto-oriented street lighting.

Light standards should be located within the furniture zone on public boulevards.

'Dark sky' lighting should be considered. However, lighting can provide a sparkle, festive and even magical street ambiance, especially within retail districts. In no instance should this potential be compromised.

PUBLIC REALM GUIDELINES—URBAN PARK AND PLAZA

Major development projects provide an opportunity and responsibility to incorporate urban parks and urban plazas. Parks and plazas serve as amenities for people of all ages, during all seasons and during all hours of the day. The Urban Park and Plaza Guidelines ensure that such spaces are properly scaled and incorporate the necessary amenities to best contribute to the safety, health, recreation, and economic vitality of the surrounding neighbourhoods.

Figure 79: All Station Areas–Urban Park and Plaza Guidelines

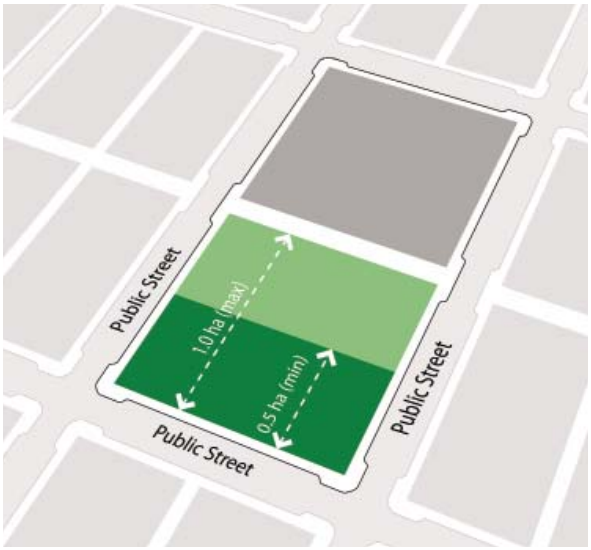
ALL STATION AREAS URBAN PARK AND PLAZA GUIDELINES	
EXPECTATIONS FOR LARGE SITES OR PLANS THAT CONTAIN AN LRT OR TRANSIT CENTRE STATION AREA	
Thresholds in One of the Following Situations	**Urban parks are encouraged on sites within 400 metres of the station platform:** ▪ In stations plans where there are no existing parks within 400 m of the station; or ▪ On large redevelopment sites with area greater than 6 net hectares (excluding streets) or greater than 9 gross hectares (including streets) where multi-family housing is proposed and where 20% or more of the site area is within 400 metres of the station platform. **Urban plazas are encouraged on sites within 200 metres of the station platform:** ▪ In station plans for Enhanced Neighbourhood, Centre, and Downtown station types where there are no existing plazas within 200 m of the station; or ▪ On large redevelopment sites with area greater than 6 net hectares (excluding streets) or greater than 9 gross hectares (including streets) and where 20% or more of the site area is within 200 metres of the station platform.
Urban Parks	0.5 ha area (min) 1.0 ha area (max) When provided may include: ▪ Public art. ▪ 50% turf (min). ▪ 1 public restroom (min). ▪ 10 benches or equivalent wall seating (min). ▪ 90 m^2 covered area/pavilion (min). ▪ Public streets, alley or midblock access way, on 3 sides.
Urban Plazas	0.25 ha (min) area 0.5 ha (max) area When provided may include: ▪ Public art. ▪ 75% paved (min). ▪ 1 public restroom (min). ▪ 40 benches (min) or equivalent fixed/movable seating. ▪ 90 m^2 (min)/ 230 m^2 (max) retail pavilion if no other active edges are present. ▪ Public streets, alley or midblock access way, on 3 sides.

Urban Park and Plaza Descriptions are on page 75.

URBAN PARK AND PLAZA DESCRIPTIONS

The graphics on the following pages illustrate the expectations identified on the Urban Park and Plaza Guidelines table. These descriptions should be used in conjunction with the guideline table.

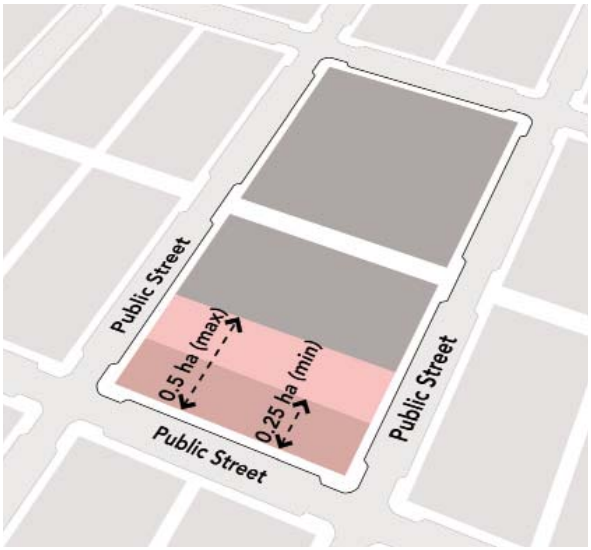
Figure 80: Urban Park



URBAN PARK

- Urban parks are intended to be primarily neighbourhood serving.
- Urban parks are intended to be the focus of adjacent surrounding development; adjacent buildings should be oriented toward the park.
- Parks may be either active or passive.
- View lines from adjacent public streets into and through the park should be maintained to ensure park safety.
- Parks may front or adjoin natural areas or open space.
- Multiple park blocks may be aligned to create promenades or other green corridors.

Figure 81: Urban Plaza



URBAN PLAZA

- Urban plazas are intended to be transit corridor serving.
- Urban plazas shall be allowed only when adjacent parcels have active ground-floor retail or public/civic uses.
- View lines from adjacent public streets into and through the plaza should be maintained to ensure park safety.
- Urban plazas should be designed for multiple use. Permanent and raised stages, amphitheatres, seating or other uses that limit flexibility are not recommended.

PUBLIC REALM GUIDELINES—BICYCLE FACILITIES

BICYCLE FACILITIES GUIDELINES

A complete system of appropriately sized and placed bicycle elements is key to increasing the number and safety of bike riders. Bike routes should be developed in a manner that is sensitive to the area type and roadway type. They should be consistent with connecting bikeway types, and in consideration of the broader bicycle transportation network. Specific bikeway types that will be typical of TOD areas are shared-use paths, separated bicycle lanes, bicycle lanes and shared lanes.

The development of any bicycle facility should be in accordance with the Bicycle Transportation Plan, and appropriate Transportation Association of Canada (TAC) guidelines. Bicycle Parking requirements should be in accordance with the Zoning Bylaw.

Figure 82: All Station Areas -Bicycle Facilities Guidelines

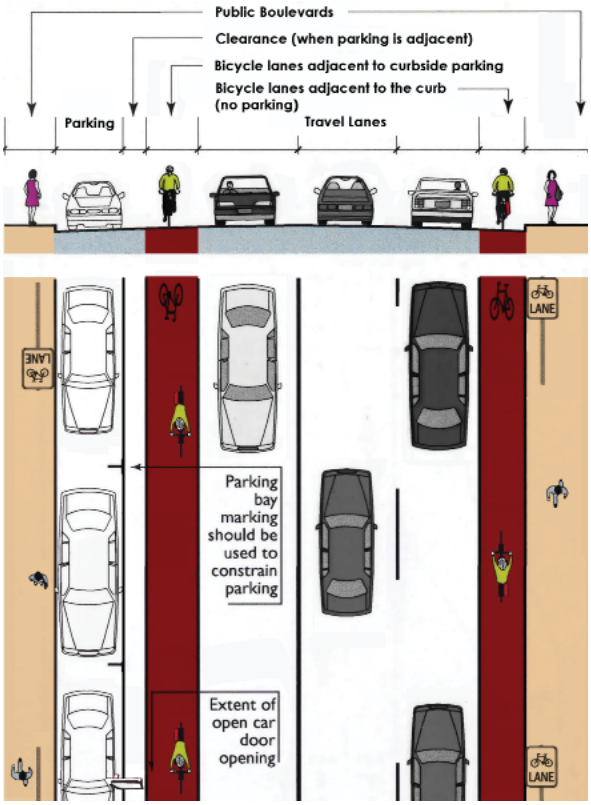
ALL STATION AREAS BICYCLE FACILITY GUIDELINES					
EXPECTATIONS FOR LARGE SITES OR PLANS THAT CONTAIN AN LRT OR TRANSIT CENTRE STATION AREA					
Thresholds	▪ Bicycle facilities are encouraged on roadways that connect directly to the station area. ▪ Bicycle facilities should be continuous within the broader bicycle transportation network. ▪ Bicycle facilities should be suited to the context of the roadway. ▪ Specific attention should be paid to the continuity of facility type within a broader context. ▪ All new construction or major renovation of public streets must include bicycle parking (consistent with the Zoning Bylaw and Bicycle Transportation Plan).				
Uniform Expectations	All major streets leading directly into the station should have a type of bicycle accommodation, and should connect into surrounding bike routes and major destinations. Routes and wayfinding signage should also lead to secure end-of-trip facilities.				
Elements	**SHARED-USE PATHWAY**	**SEPARATED BICYCLE LANES**	**BICYCLE LANES**	**SHARED LANES**	**SELECTED INTERSECTION IMPROVEMENTS**
	▪ One side of the roadway ▪ Require minimal intersection crossings and conflicts with accesses ▪ Application and associated signage in accordance with TAC guidelines	▪ Physically separated bicycle lanes (either along one side of the roadway, or on both sides of the roadway) ▪ Application in accordance with best practices. ▪ Consideration must be given to minimizing intersection conflicts, and continuity of facility type within a broader context	▪ Both sides of the roadway ▪ Application and associated signage in accordance with TAC guidelines	▪ Both directions on roadway ▪ Single file or side-by-side applications ▪ Application and associated signage in accordance with TAC guidelines	▪ Bicycle boxes, bike signals, pavement markings, etc. ▪ May be considered where volumes and intersection characteristics warrant. Used in conjunction with major bicycle routes and applied in accordance with TAC guidelines

Bicycle Facility Descriptions are on pages 77 to 80.

BICYCLE FACILITY (ON-STREET) DESCRIPTIONS

The graphics on the following pages illustrate the expectations identified on the Bicycle Facility Guidelines table. These descriptions should be used in conjunction with the guideline table.

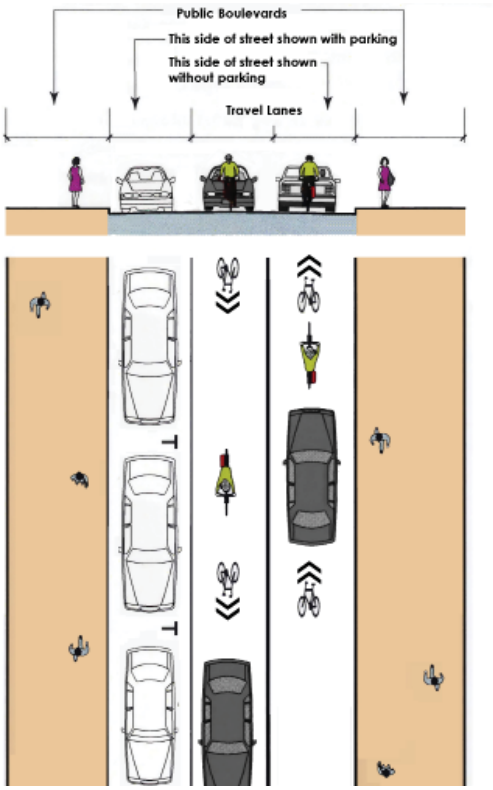
Figure 83: Bicycle Lanes



BICYCLE LANES

Bicycle lanes act as a guide to delineate areas on roadways appropriate for motorists and for cyclists. Bicycle lanes should be between 1.5 m and 2.0 m wide, marked on both sides of the roadway and located adjacent to the curb or parallel to street parking.

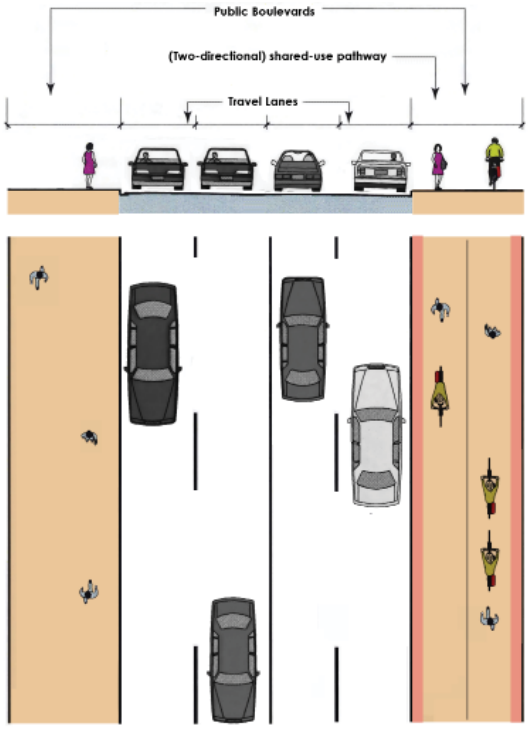
Figure 84: Single-File Shared Lane



SHARED LANES

Shared lanes are shared by motorists and cyclists, marked with sharrows, within the same travel lane either in a single file or side-by-side. Single file shared lanes are appropriate on roadways with a speed limit of 50 km/h or less. Side-by-side shared lanes are appropriate for a greater range of speed limits but are only appropriate for travel lanes between 4.1 m and 4.9 m wide.

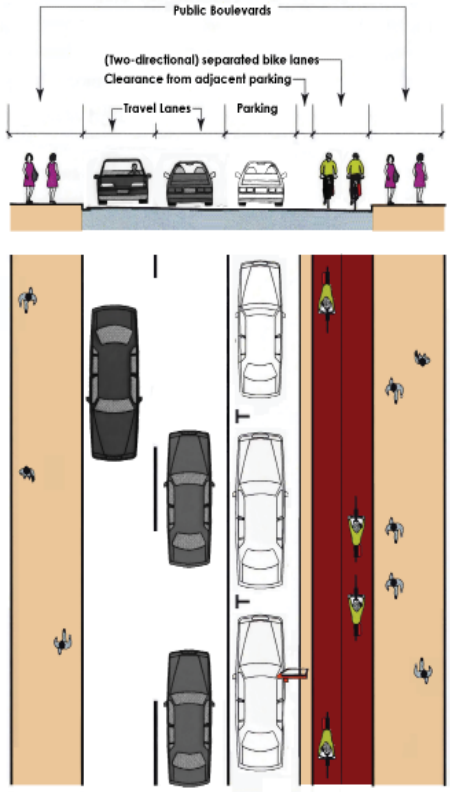
Figure 85: Shared Use Pathway



SHARED-USE PATHWAY

Shared-use pathways are generally open to all types of active mode users. This facility type offers a cycling experience separated from traffic. Cyclists must yield to traffic at roadway and access crossings, unless they dismount and cross the roadway as a pedestrian. Shared-use pathways are typically two-way facilities and at least 3m wide. When placed along roadways, shared-use pathways are typically only constructed along one side of the roadway

Figure 86: Separated Bicycle Lanes



SEPARATED BICYCLE LANES

Separated bicycle lanes restrict the use of the facility to bicycles and exclude use by other modes. The context in which separated bicycle lanes are implemented should be carefully considered. Infrequent crossings or interactions with other modes should be prioritized and parallel facilities for other active modes should be provided and clearly marked. Both experienced and inexperienced cyclists should experience a minimum delay and a high level of service on this type of facility.

BICYCLE FACILITY (PARKING) DESCRIPTIONS

Figure 87: Bicycle Parking Curbside Parking Lane

BICYCLE PARKING

Bicycle parking at the station should be provided at access points to or on the LRT Station or transit platform based on the Guidelines for Urban Style LRT.

When developing Station Area Plans, the amount of bicycle parking within the station area should be based on:

- The land uses contained within the plan
- The Zoning Bylaw
- The Bicycle Transportation Plan.

In the absence of a station area plan, bicycle parking should be addressed in a manner that is consistent with the Bicycle Transportation Plan and Zoning Bylaw. All new construction or major renovation of public streets must include bicycle parking.

Figure 88: Covered Bicycle Parking

COVERED BICYCLE PARKING

A proportion of bicycle parking must be covered, and should be provided at each station to accommodate long-term parking in a variety of weather conditions. Covered parking typically consists of standard bicycle parking racks with overhead and occasionally side coverage. Protection along at least one side of the enclosure may help to shelter the bicycle racks from snow and rain, and minimize the need for winter snow-clearing.

Figure 89: Bike Centre

Photo from Flickr Creative Commons (Matthew Almon Roth).

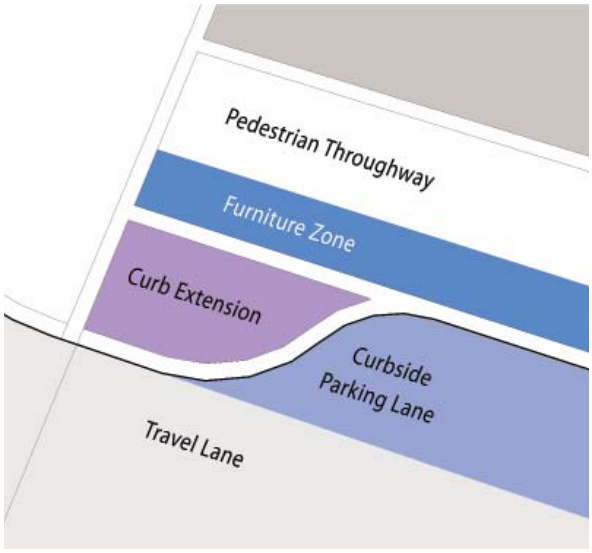
BIKE CENTRE

A bike centre offers users/members secure bicycle parking and related amenities and services. Membership to most bike centres includes:

- 24-hour access to secure bicycle parking
- Bicycle repair equipment
- Snack bars and cafes
- Showers
- Lockers
- Change rooms
- Car-sharing services
- Discounts on retail sales
- Bike-sharing, and other perks.

A feasibility study could be undertaken to explore different opportunities to implement a bike centre (within the vicinity of the station) for areas where Station Area Plans are being developed.

Figure 90: Bicycle Parking Zones



BICYCLE PARKING ZONES

Bicycle parking can occur in one of the following three areas:

- **Curb extensions–**attention must be paid to the precise placement of the bicycle racks to keep the corner clear for pedestrian movements and auto sight lines.
- **Parking lane–**bicycle racks may be provided in lieu of vehicular parking, but should be protected by bollards and well-signed.
- **Furniture zone–**bicycle racks should be placed to ensure that bicyclists do not impede pedestrian passage, and be placed with consideration of adjacent furniture and vehicle access where curbside parking is provided.

PUBLIC REALM GUIDELINES—ROADWAY

Major development will result in the opportunity to establish high quality and TOD supportive streets. The Roadway Guidelines ensure that such streets will contribute to pedestrians' safety and comfort with weather and traffic protections. Curbside parking contributes to safety by buffering pedestrians from traffic while enhancing the vitality of adjacent retail and commercial activities.

Figure 91: All Station Areas–Roadway Guidelines

ALL STATION AREAS ROADWAY GUIDELINES								
EXPECTATIONS FOR LARGE SITES OR PLANS THAT CONTAIN AN LRT OR TRANSIT CENTRE STATION AREA								
Thresholds	**All public streets, where a minimum of one block of street length is under construction or major renovation, should include:** ▪ Curbside vehicle parking ▪ Curb Extensions ▪ Crosswalks							
Road Elements	**CURBSIDE PARKING**	**CURB-EXTENSIONS**	**CURB-EXTENSIONS (BUS STOPS)**	**CROSSWALKS**	**CROSSWALKS (MID-BLOCK)**	**LRT TRACKWAY TREATMENT**	**KISS AND RIDE**	**TRANSIT INTERCHANGE**
Within 400 Metres of Station Platform	Locate on both sides of the street: ▪ 2.5 m (min) parking lane width Where retail is adjacent: ▪ Limit hours for loading zones from 8pm-7am	Locate at all intersections: ▪ 2.5 m x 6 m (min) ▪ 50% (min) landscaped surface area ▪ Prohibit Stormwater Detention (Bio-swales) on streets with retail frontages and adjacent to the station platform	Locate at all bus stops: ▪ 2.5 m x 15 m (min) ▪ 100% paved surface area ▪ Provide weather-protected bus shelters and benches	Provide at each intersection: ▪ 4 m width (min) to match adjoining sidewalk width	Provide between all mid-block accessways ▪ 4 m wide marked walkway (min) ▪ Provide from both ends of the station platform	▪ Prohibit tie-ballast trackway ▪ Provide high-quality paved/embedded trackway	Drop-off of passengers from personal vehicles or taxis should be accommodated without detracting from pedestrian-oriented, development adjacent to the LRT station or transit centre Refer to the *Guidelines for Urban Style LRT.*	Transfer of passengers between buses and LRT should be designed to be convenient and direct without detracting from pedestrian-oriented, development adjacent to the LRT station or transit centre Refer to the *Guidelines for Urban Style LRT.*

Roadway Descriptions are on pages 83 to 84.

ROADWAY PHILOSOPHY

Major private development/redevelopment projects provide opportunities to bring streets up to a higher level of quality, sustainability, safety and functionality. Such improvements contribute to the success of both public and private elements. The guidelines do so by:

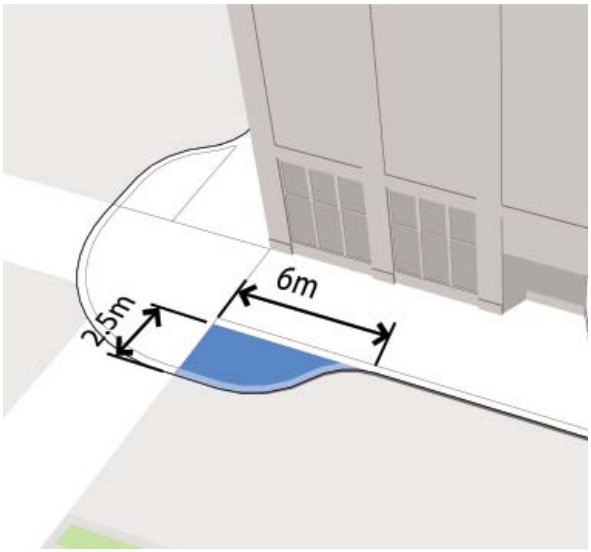
- Providing parking necessary to support commercial activity and separate moving vehicles and pedestrians.
- Including curb extensions and intersection and mid-block crossings which reduce pedestrian road-crossing distances and times.
- Encouraging a more visually integrated trackway.
- Appropriately balancing hardscape and landscape treatments.

Figure 92: Roadway Example

ROADWAY DESCRIPTIONS

The graphics on the following pages illustrate the expectations identified on the Roadway Guidelines table. These descriptions should be used in conjunction with the guideline table.

Figure 93: Curb Extension (Typical)

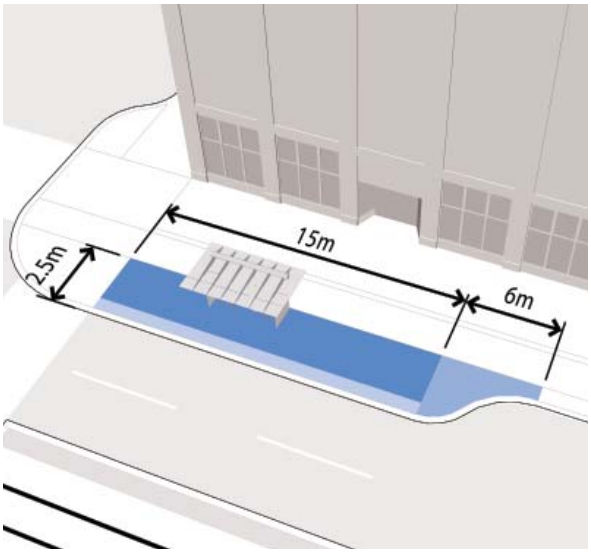


CURB EXTENSIONS (TYPICAL)

Curb extensions protect pedestrians by minimizing roadway crossing distances and serving as a refuge for those waiting to cross streets. They also serve to slow traffic and provide opportunities for streetscape enhancements such as landscaping, bike parking, seating and other street elements.

Corner radii should be minimized to reduce speeds of turning vehicles.

Figure 94: Curb Extension (Bus Stops)

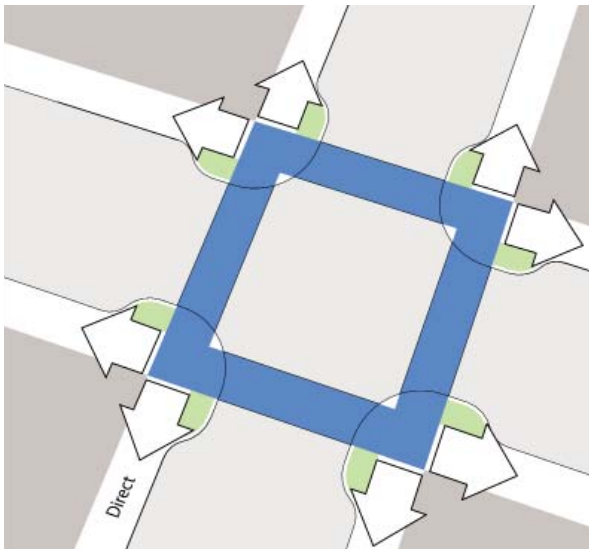


CURB EXTENSIONS (BUS STOPS)

Curb extensions provide in-traffic bus stop locations that will accommodate all ETS bus vehicles. Curb extensions also protect bus riders by providing adequate queuing and exiting areas and affording sufficient space for shelters. Where possible, bus stops should be located to accommodate curbside parking that supports retail uses adjacent to the station.

For more information about bus-to-LRT interchanges, refer to the *Guidelines for Urban Style LRT.*

Figure 95: Intersection Crosswalk

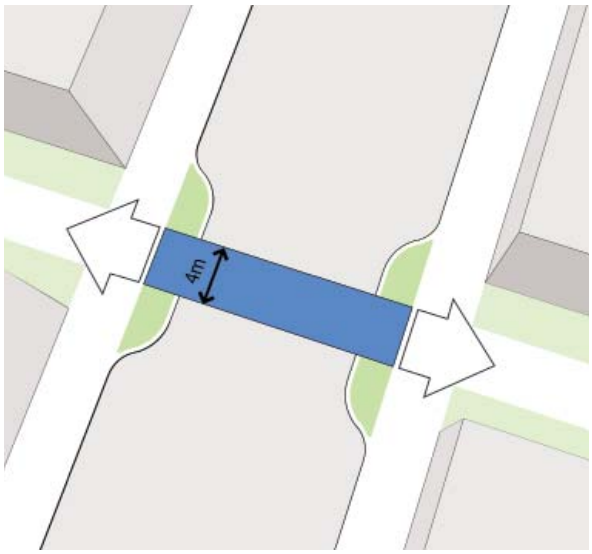


CROSSWALKS

Crosswalks provide for safe and accessible pedestrian passages at intersections through clear markings and a width that matches or is compatible with that of adjoining public boulevards.

Intersections should have a strong pedestrian bias. Crosswalks should be designed as walkways that continue through intersecting roadways. Crosswalks should be directly in-line with adjoining walkways. Offset crosswalks should not be permitted.

Figure 96: Mid-Block Crosswalk



CROSSWALKS (MID-BLOCK)

Mid-block crosswalks provide for safe and accessible pedestrian and bicycle passage at mid-block accessways and at station platforms through clear markings and traffic-slowing ramping.

- Curb extensions that minimize pedestrian crossing distances should be provided wherever curbside parking lanes exist.
- Traffic control stop/yield signs, signals or other vehicle warning techniques should be used where warranted.

URBAN DESIGN AND CPTED PRINCIPLES

Figure 97: All Station Areas–Urban Design and CPTED Principles

ALL STATION AREA AND TRANSIT CENTRE TYPES
URBAN DESIGN PRINCIPLES

ALL USES

Edmonton's Design Committee has established the following principles of urban design that should be applied as guidelines to all LRT and Transit Centre Station Area Types.

Principle A—Urbanism

Strive to create and restore the existing urban fabric within the metropolitan region, create real communities and diverse districts, conserve the natural environment and respect Edmonton's built legacy.

- A1 Creating and enhancing the city.
- A2 Creating and enhancing the neighbourhood, district and corridor.
- A3 Creating and enhancing the block, street and building .

Principle B—Design Excellence

Exemplify design excellence by incorporating, translating and interpreting all three design principles to the greatest extent possible, consistent with best contemporary practices.

- B1 Sustainability is an integral component of the design.
- B2 Integration and encouragement of public arts and culture.
- B3 Celebrate the winter city and Edmonton's climate.
- B4 Durable, permanent and timeless materials.
- B5 Appropriate use of innovation.

Principle C—Scale, Connections + Context

Demonstrate appropriate scale, integration of design elements and fit within the context of the precinct.

- C1 Exemplify neighbourliness: celebrate, engage and enhance the unique context of location.
- C2 Celebrate and respect heritage.
- C3 Enhance and preserve connections.

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) PRINCIPLES

ALL USES

Crime Prevention Through Environmental Design (CPTED) is defined as a multi-disciplinary approach to deterring criminal behavior through environmental design. Designing the built environment with CPTED strategies in mind can increase safety and reduce the potential for crime. CPTED strategies to be applied as guidelines to all LRT and Transit Centre Station Area Types include :

- Surveillance–Create the perception that people can be seen (eyes on the station).
- Access–Create multiple well-defined and highly visible egress options (escape routes).
- Activity–Create and support an active environment that attracts people (year-long and day-round use).

Urban Design and CPTED Descriptions are on page 86.

URBAN DESIGN AND CPTED PRINCIPLES -DESCRIPTIONS

URBAN DESIGN PRINCIPLES

Guidelines such as The Edmonton Design Committee's Principles of Urban Design achieve a number of purposes. They:

- Encourage appropriate design quality.
- Ensure compatibility with surrounding areas.
- Stabilize investment by maintaining consistent quality for all projects.

The Principles are well-conceived and time-tested. Comparable principles have been employed in other cities as the underpinnings of design expectations to establish and maintain a level of design quality consistent with public expectations.

For application to the station areas, the Principles have been tailored to embody Edmonton's values. Their application will help successfully leverage LRT investment.

The Principles are to be applied as additional guidelines for all projects within LRT and Transit Centre Station Area Types. This will ensure that the development of these Station Areas is exemplary.

Figure 98: LRT Design Quality

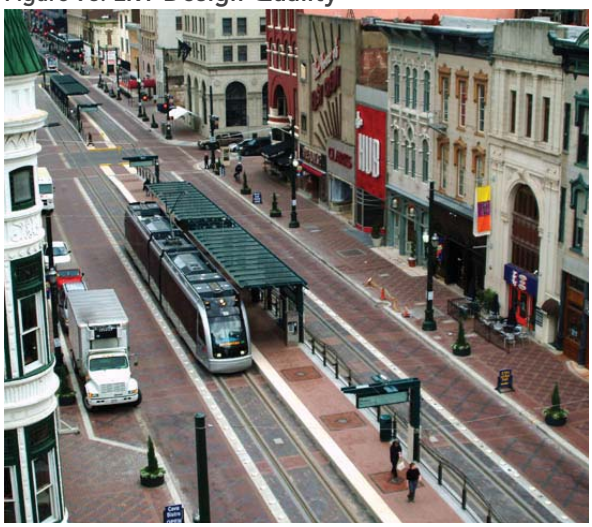


Figure 99: Pedestrian Scaled Streetscape Design

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) PRINCIPLES

Crime Prevention Through Environmental Design (CPTED) is defined as a multi-disciplinary approach to deterring criminal behaviour through enviornmental design. Designing the built environment with CPTED strategies in mind can increase safety and reduce the potential for crime.

The Principles are to be applied as additional guidelines for all major projects within LRT and Transit Centre Station Area Types. This will ensure that the development of these Station Areas has reduced potential for crime.

STATION AREA PLANS

WHAT IS A STATION AREA PLAN?

Station Area Plans (SAP) guide and regulate development, redevelopment, and public realm improvements within 800 metres of an LRT Station area. They may be prepared by the private or public sector, and may be implemented through a statutory plan, such as an Area Redevelopment Plan, a Neighbourhood Structure Plan or a Neighbourhood Area Structure Plan.

Each Station Area Plan establishes a specific vision for transit oriented development. It is specific to the identified land use intentions and sensitive to the character and features of surrounding neighbourhoods. A Station Area Plan guides the transformation of a station area into a vibrant and attractive, higher density, mixed-use, walkable and transit-oriented precinct.

Station Area Plans are specific to the context of the station area that is being planned. An emphasis on residential uses is often appropriate in some station areas while an emphasis on employment uses may be more appropriate in others. The mix of uses identified in the plan will depend on the station area's existing conditions, redevelopment potential, and city-wide context.

Station Area Plans are developed to:

- Increase transit ridership.
- Establish a clear identity.
- Provide transit-supportive land uses and densities, including a mix of employment and retail uses and housing opportunities.
- Ensure safe and convenient pedestrian and bicycle access between uses and stations.
- Establish a comfortable, attractive and vibrant public realm.

Figure 100: Station Area Vision

Station Area Plans:

- Should attempt to meet or exceed the TOD Guidelines, which determines uses, establishes the area character, and identifies minimum and maximum land use expectations to realize the greatest TOD potential.
- Should establish that the TOD Guidelines and other identified expectations will apply to all future development in the area.

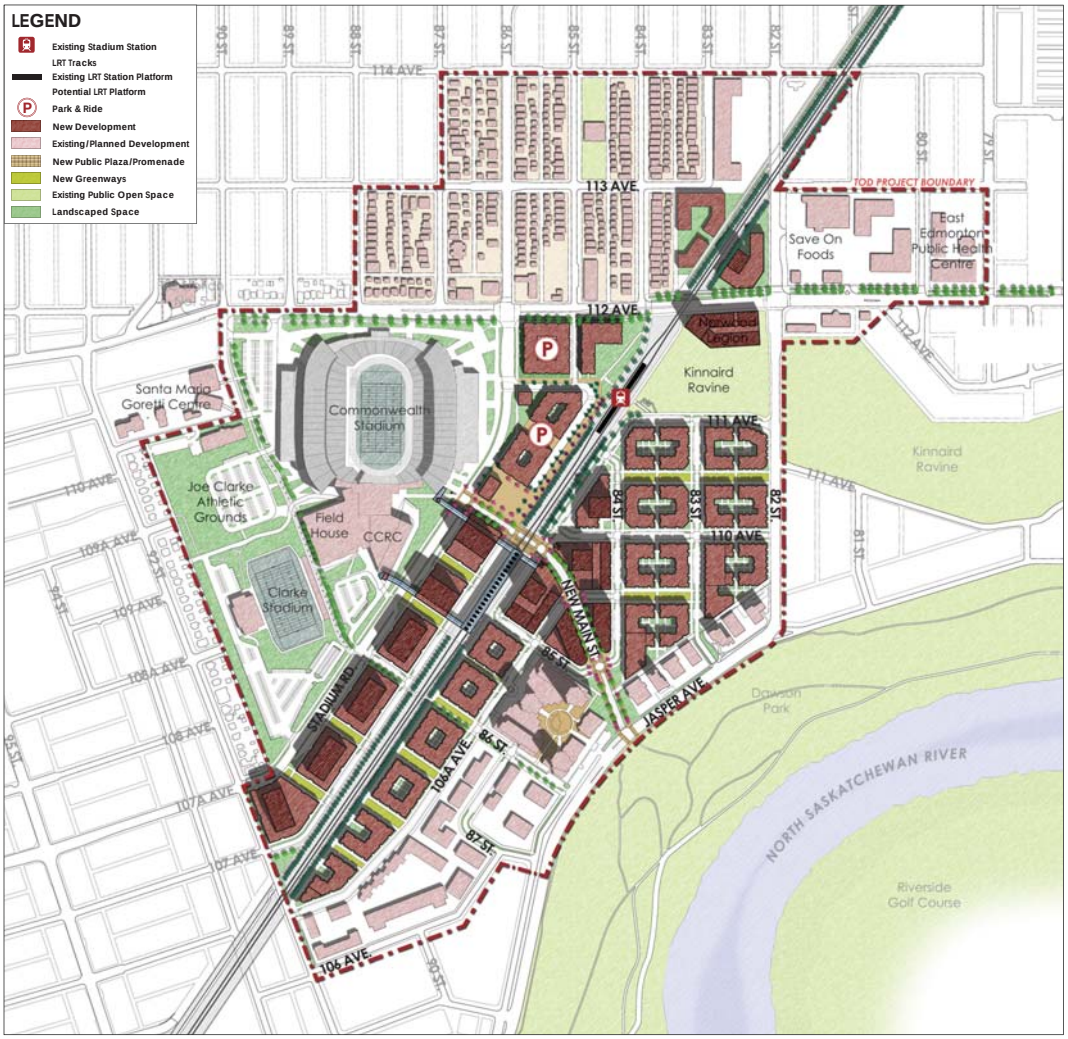
Station Area Plans are not intended to mandate redevelopment. They provide a framework for future development should existing property owners choose to redevelop or make their property available to others.

Where a Station Area Plan has been approved, the TOD Guidelines would no longer apply to the area outside the plan boundary but within 400 m of the station.

STATION AREA PLAN ELEMENTS

Station Area Plans should include, at minimum, **a build out concept, land use and circulation frameworks and an implementation strategy**. The following examples from Edmonton illustrate these key components for explanation purposes only.

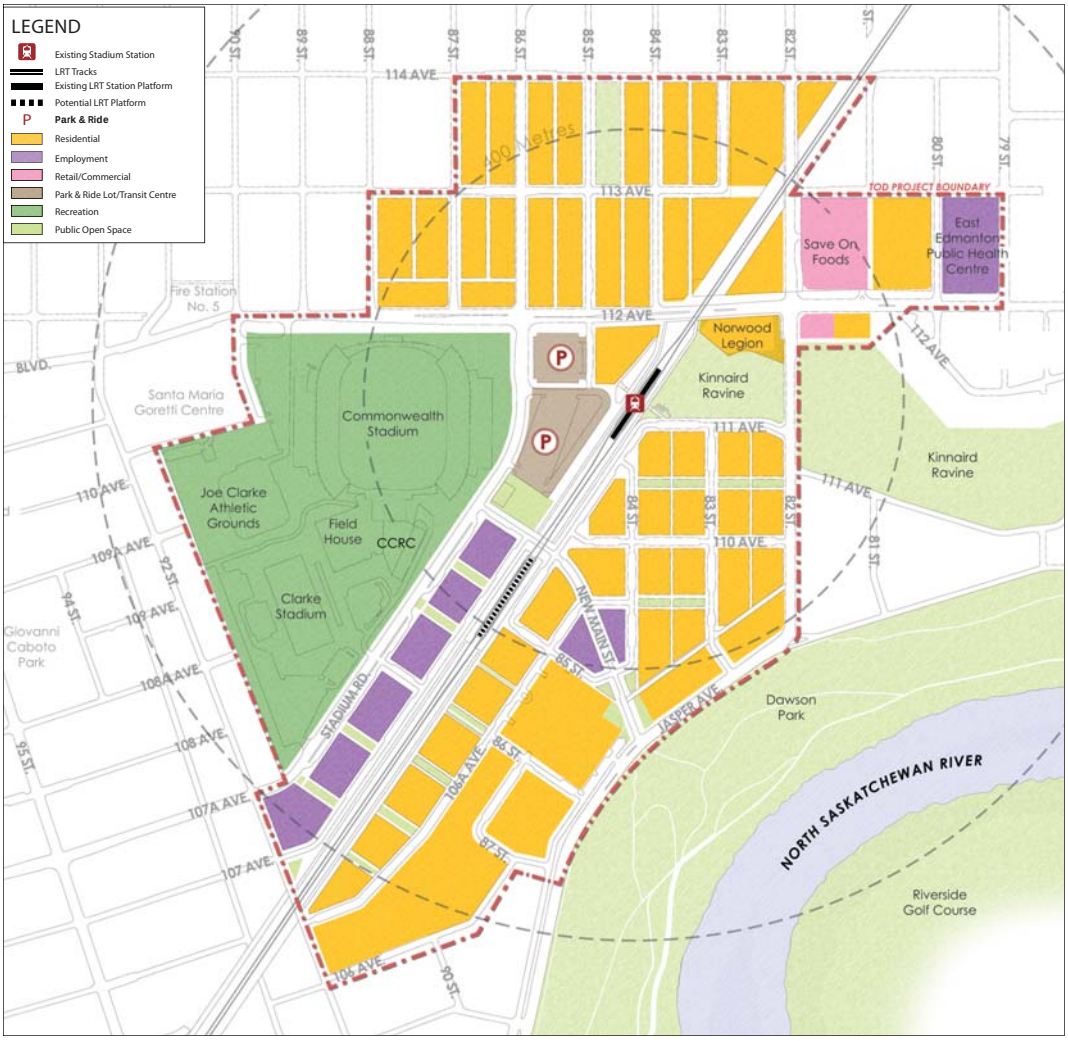
Figure 101: Build Out -Example



BUILD OUT CONCEPT

The build out concept illustrates and describes the vision of the station area should all TOD sites and associated infrastructure be constructed per plan requirements.

Figure 102: Land Use -Example

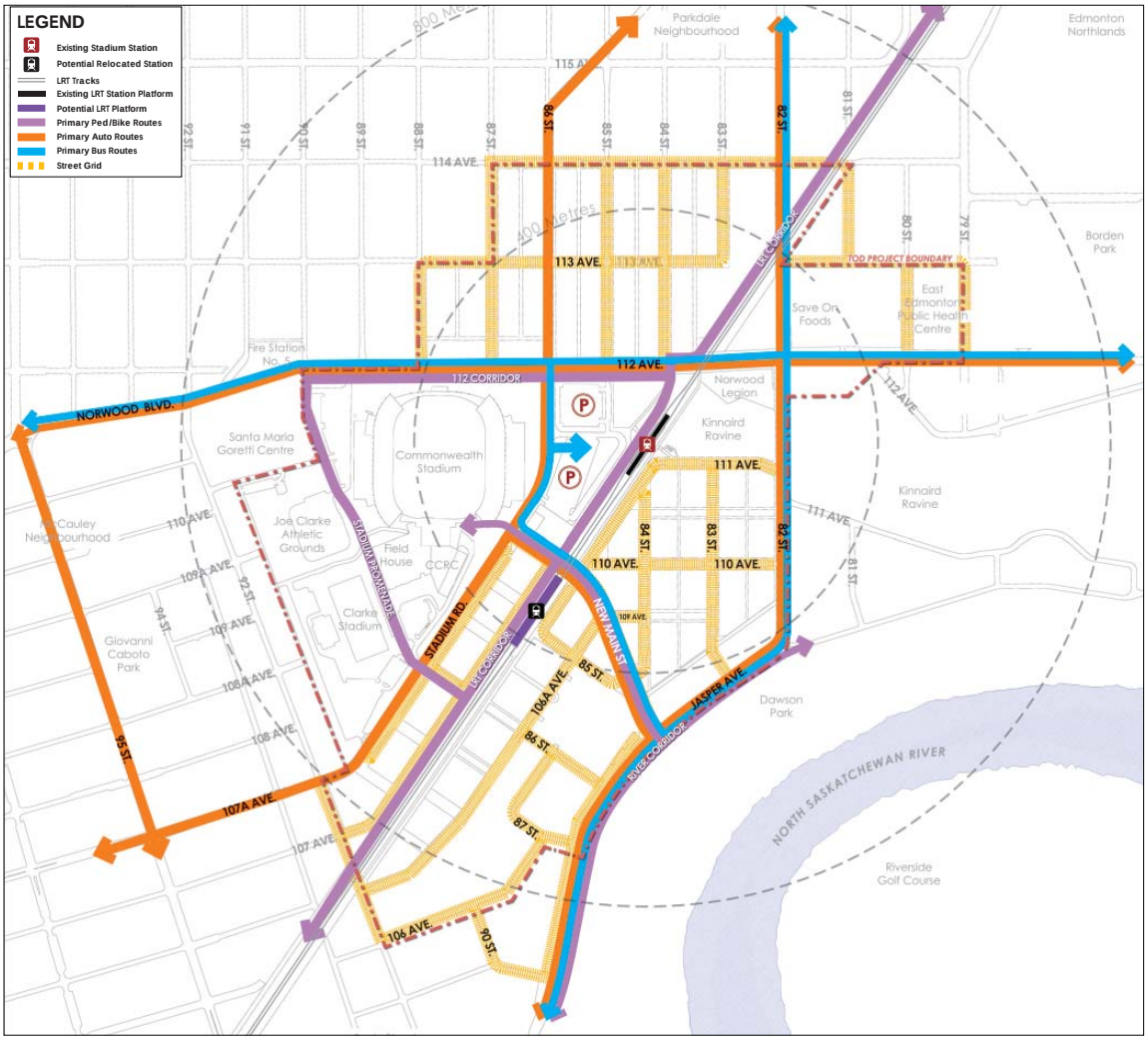


LAND USE FRAMEWORK

Land use frameworks locate a mix of transit-supportive employment, residential, retail and other trip-generating uses and densities within the station area. The focus is on higher-density uses within 400 metres from the station.

Land use frameworks describe primary land uses and, in some instances, alternative or secondary uses, for each development site. Accompanying development tables outline allowable uses, the amount (m^2), densities/intensities (units per m^2/FAR), parking, building area and other pertinent use information. Height, massing and other site planning requirements are provided.

Figure 103: Circulation -Example

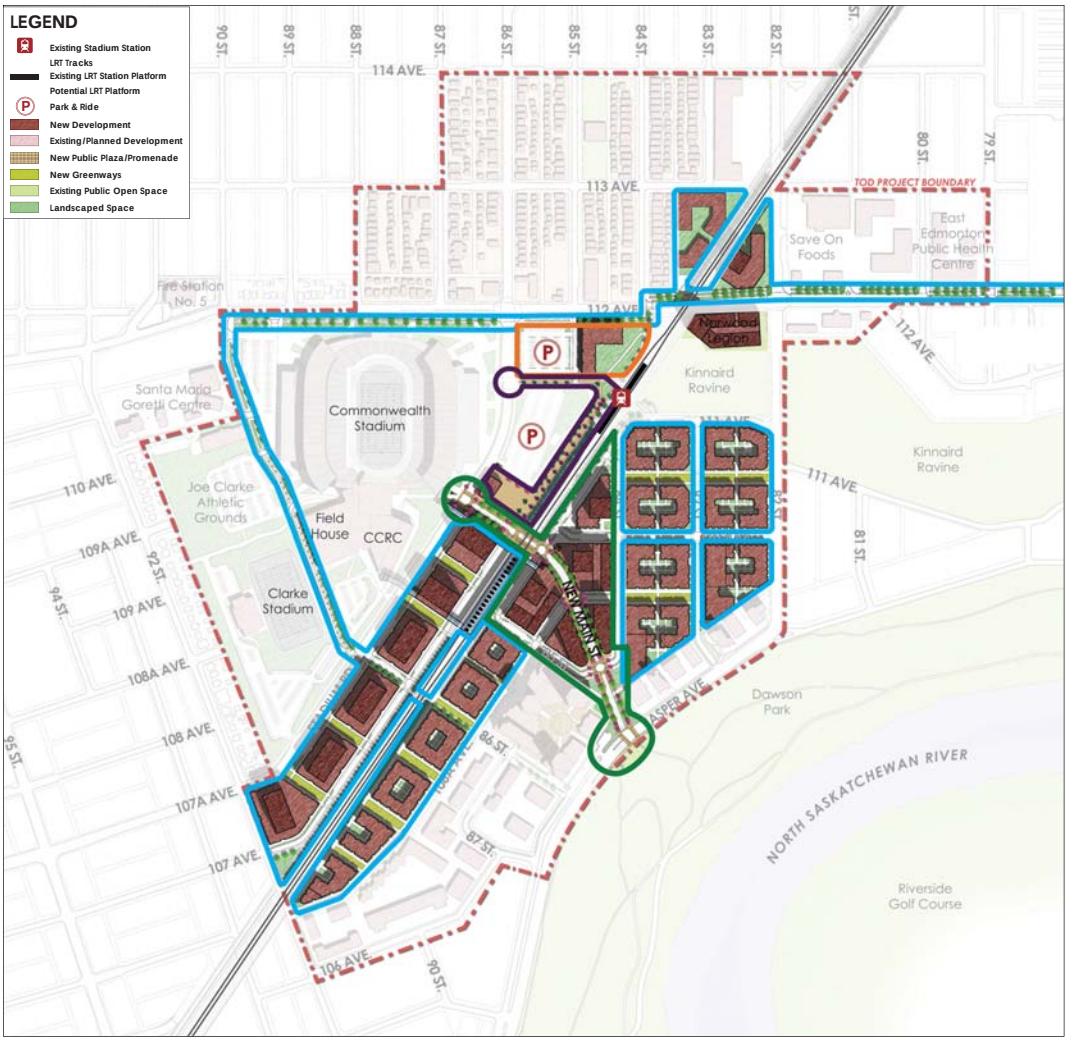


CIRCULATION FRAMEWORK

Circulation frameworks should establish a network of complete streets within the study area. This takes into account pedestrians, bicyclists, public transit patrons, and motorists. This will allow each to move directly, conveniently, and safely throughout the station area and surrounding neighbourhoods.

The circulation framework describes the location/route of all station area transportation modes—transit, auto/truck, pedestrian and bicycle. The framework includes plans and sections of intersections, new roadways, and pedestrian and bicycle infrastructure. The framework includes a traffic study that describes the benefits/impacts to existing and planned infrastructure, and measures to address the impacts.

Figure 104: Implementation -Example



STATION AREA PLAN IMPLEMENTATION STRATEGY

Implementation strategies promote positive change and growth in a station area. They identify the key steps that should be taken to stimulate development momentum.

Implementation strategies describe both public and private actions and projects, responsibilities and schedules. They include financial strategies that prioritize catalytic and key public projects that will result in the greatest return on public investment dollars.

WHY AND WHEN TO DEVELOP A STATION AREA PLAN

WHY DEVELOP A SAP?

A community invests significant amounts of money and political will to build a high-quality transit system. The public should see many returns on this transit investment. The development of Station Area Plans can realize these returns. They include reduced environmental impacts, a healthier population and perhaps the most compelling benefit, a maximization of financial return. Station Area Plans can help increase the public's financial return in the following ways:

- Increased private sector development activity and tax revenues.
- Increased farebox revenues (results from increased ridership).
- Ongoing local economic stimulus.
- Reduced infrastructure costs.
- Job creation.

Station Area Plans should be prepared for those stations that offer the greatest TOD potential within a transit system.

Transit centres are not a priority for independent Station Area Plans. The TOD Guidelines should be applied in statutory plans or plan amendments that contain a transit centre.

Since development of a Station Area Plan requires an investment of time and funds, Station Area Plans will not likely be prepared for every station area. Therefore, stations with the greatest TOD potential should be prioritized to maximize transit-supportive development and increase transit ridership.

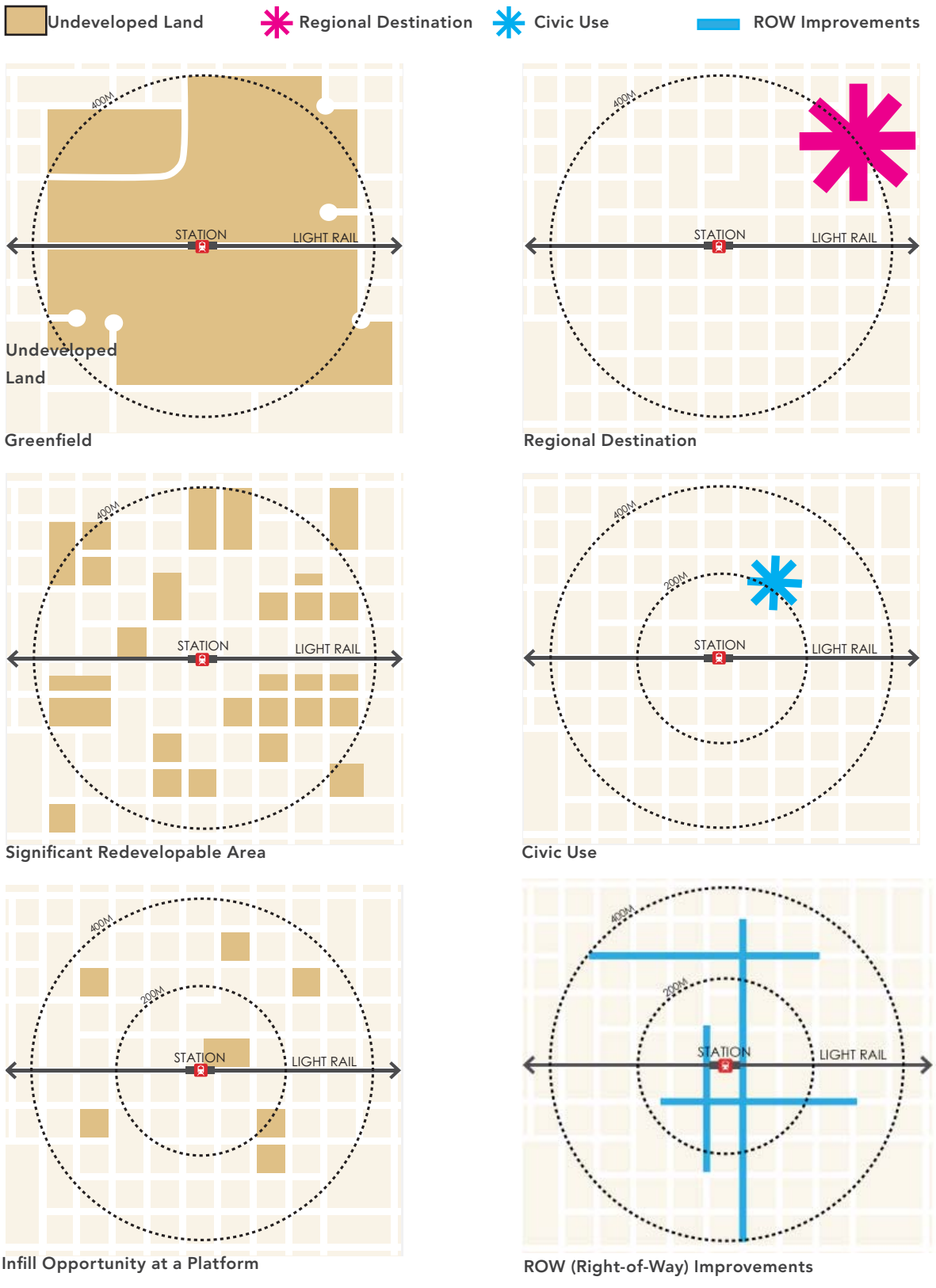
WHERE TO DEVELOP A SAP

Greenfield sites generally represent the best opportunities for TOD implementation. Therefore, a Station Area Plan should be developed for all station areas where at least 80% of the area within 400 metres of the station platform is undeveloped.

Station Area Plans should be considered for station areas that meet one or more of the following scenarios:

- **Significant Redevelopable Area–**at least 40% of the area within 400 metres of the station platform is redevelopable.
- **Infill Opportunity at Platform–**a redevelopable property engages the station platform.
- **Regional Destination–**a planned or existing regionally significant destination located within 400 metres of the station platform.
- **Civic Use–**the station area has a planned or existing public facility that is located within 200 metres of the station platform.
- **Right-of-Way (ROW) Improvements–**the station area is slated for public or private ROW improvements within 200 metres of the station platform.
- **Other–**additional characteristics that make the station area a desirable location for TOD.

Figure 105: Potential Station Area Plan Scenarios



WHAT IS THE GOVERNMENT'S ROLE?

To get TOD right, government agencies should lead and finance Station Area Planning efforts and initiate implementation by investing in public infrastructure, facilities and amenities.

STATION AREA PLANNING

Station Area Planning is best undertaken by the public sector. This ensures that station areas feature the appropriate mix of land uses, densities and amenities that are ultimately intended to increase transit ridership and reduce auto trips.

Station Area Plans should be initiated, led and funded by the public sector but may or may not be wholly prepared by a public agency. Depending on the complexity of a project and the availability of staff, funding, and technical information the preparation of a Station Area Plan may include the following personnel:

- **Agency staff–**conduct background research, prepare technical analyses, organize and facilitate stakeholder involvement, prepare Station Area Plan and Implementation Strategy (may be in collaboration with design consultant).
- **Primary design consultant–** facilitates public and stakeholder involvement and develops the Station Area Plan and implementation strategy.
- **Subconsultants–**develop technical reports, such as market analysis, transportation impact assessment, infrastructure assessment, environmental and geotechnical analysis.

Station Area Plans typically take 12 to 15 months to complete.

STATION AREA IMPLEMENTATION

Upon completion of the Station Area Plan, government agencies must be willing to invest public dollars to implement the public projects identified in the Plan. This investment can:

- Spur immediate development momentum.
- Demonstrate a commitment to station area redevelopment.
- Attract developer interest.

Projects that have the most potential to create significant change and spark widespread sustainable reinvestment in the station area should be prioritized. To maximize a community's return on investment, public expenditure should be made in one or more of the following categories:

- Land acquisition
- Re-subdivision
- Rezoning
- Relocation of utilities
- Streetscape improvements
- New local streets
- New or improved pedestrian and bike facilities, including bike lanes, bike parking and changing facilities at the transit station
- New rail track crossings and signalization
- Urban park and plaza development

DEMONSTRATION MODELS

MODELING THE TOD GUIDELINES

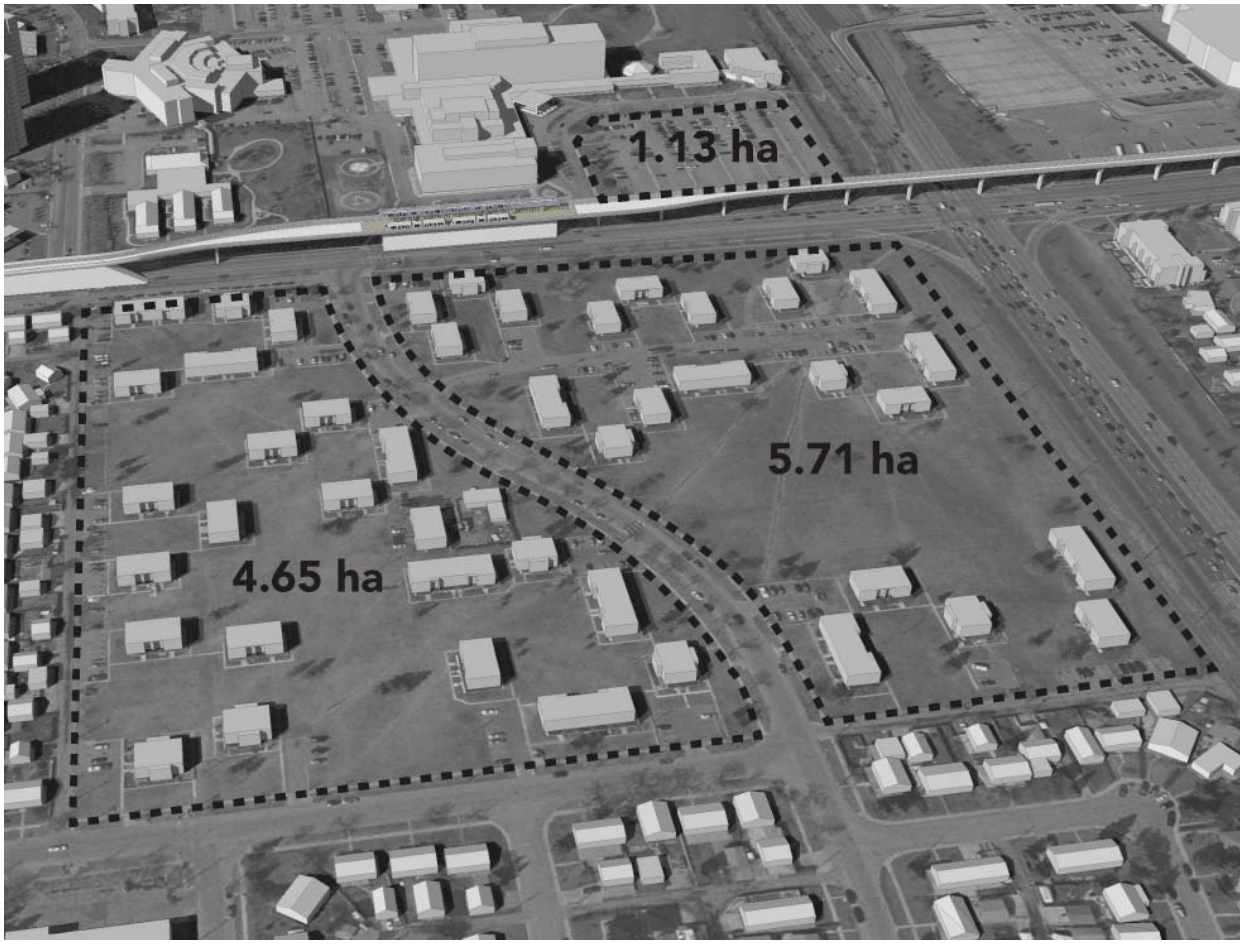
The following pages illustrate the application of the TOD Guidelines through the modeling of two generic LRT station area types.

- Employment Station Area
- Enhanced Neighbourhood Station Area

This exercise provides an opportunity to test the Guidelines' viability as planning and design requirements, as well as demonstrate the potential outcome of their application.

GENERIC EMPLOYMENT STATION AREA

Figure 106: Generic Employment Station Area–Before TOD Guidelines Application



Before TOD Guidelines

An existing low-density residential redevelopment site of approximately 10 hectare has the capacity to absorb a significant amount of new development.

After TOD Guidelines

The demonstration plan shown on the following page identifies new retail, housing, and a public urban park to complement and support the primary station area use—employment. The site is well oriented for office uses capitalizing on high-levels of drive-by traffic and visibility from nearby streets.

The plan illustrates a development concept that meets the minimum requirements for employment intensity and ground-floor retail with parking provided on surface lots and one level below grade. Higher-intensity employment with structured parking should be encouraged. Residential uses shown on the plan are parked below-grade.

The redevelopment plan also features a protected bikeway on the station area's central street linking existing adjacent neighbourhoods.

Figure 107: Generic Employment Station Area–After TOD Guidelines Application

Development Potential

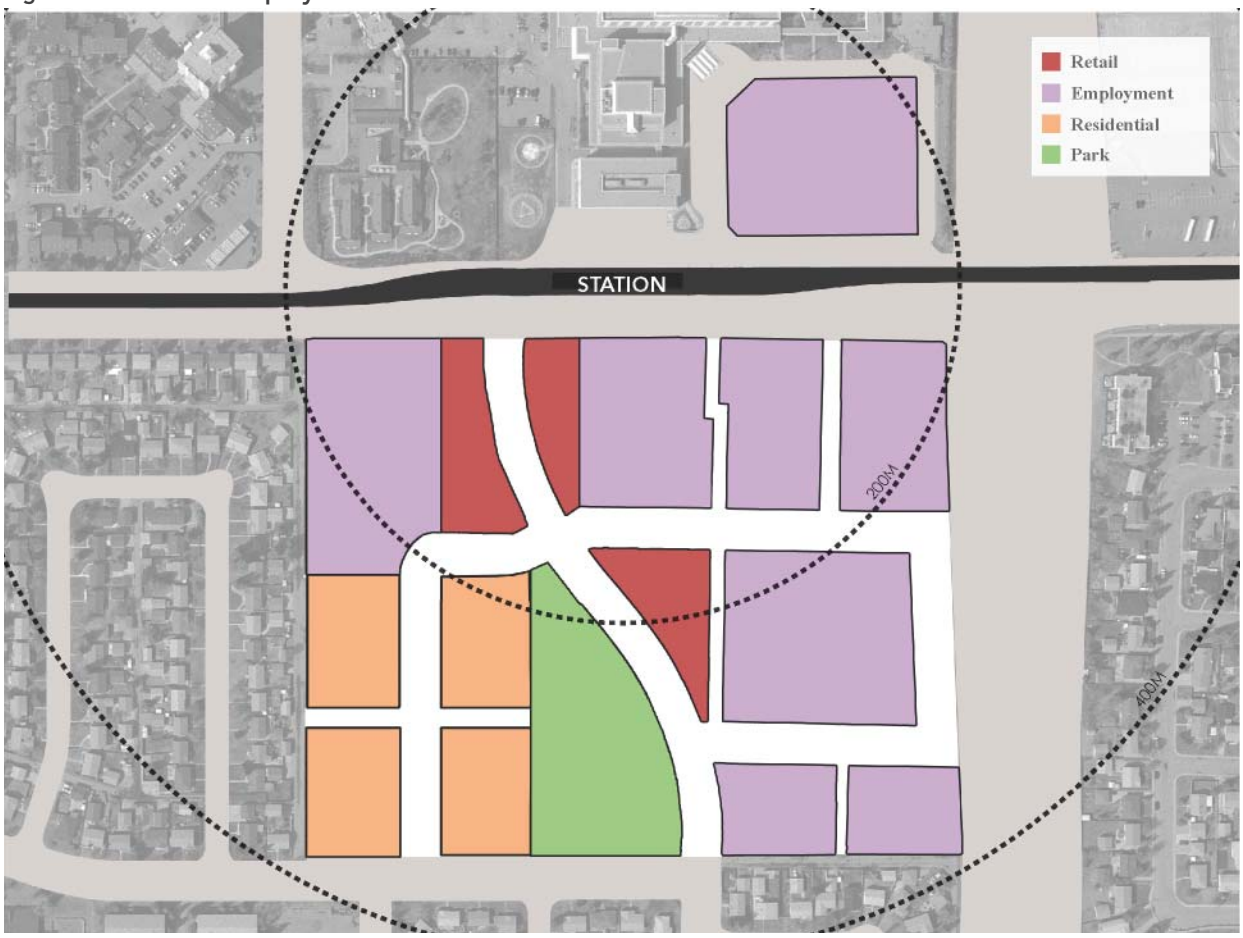
The development summary below identifies the potential quantities and intensities of new uses, and the associated parking that result from application of the TOD Guidelines.

Figure 108: Generic Employment Station Area–Development Summary

EMPLOYMENT STATION AREA - DEVELOPMENT SUMMARY TABLE				
LAND USE	TOTAL SITE AREA	DWELLING UNITS (du) OR BUILDING AREA (m^2)	DENSITY / INTENSITY / PARKING RATIO	OFF-STREET PARKING SPACES
Employment	6.6 ha	66,000 m^2	1.0 F.A.R.	—
Employment Parking Surface/Structure	—	70,990 m^2	2.5 spaces per 100 m^2	2,119 spaces
Residential	1.55 ha	504 du @ 93m^2 per unit	250 du/ha	—
Residential Below-Grade Parking	—	16,428 m^2	1 space per unit	504 spaces
Retail	—	4,170 m^2	—	—
Retail Surface Parking	—	2,940 m^2	2.0 spaces per 100 m^2	79 spaces
Urban Parks	1.0 ha	—	—	—
DEVELOPABLE AREA **TOTAL AREA**	**9.15 HA** **11.49 HA**			

* Parking ratio's based on Edmonton's draft parking regulations

Figure 109: Generic Employment Station Area–Land Use

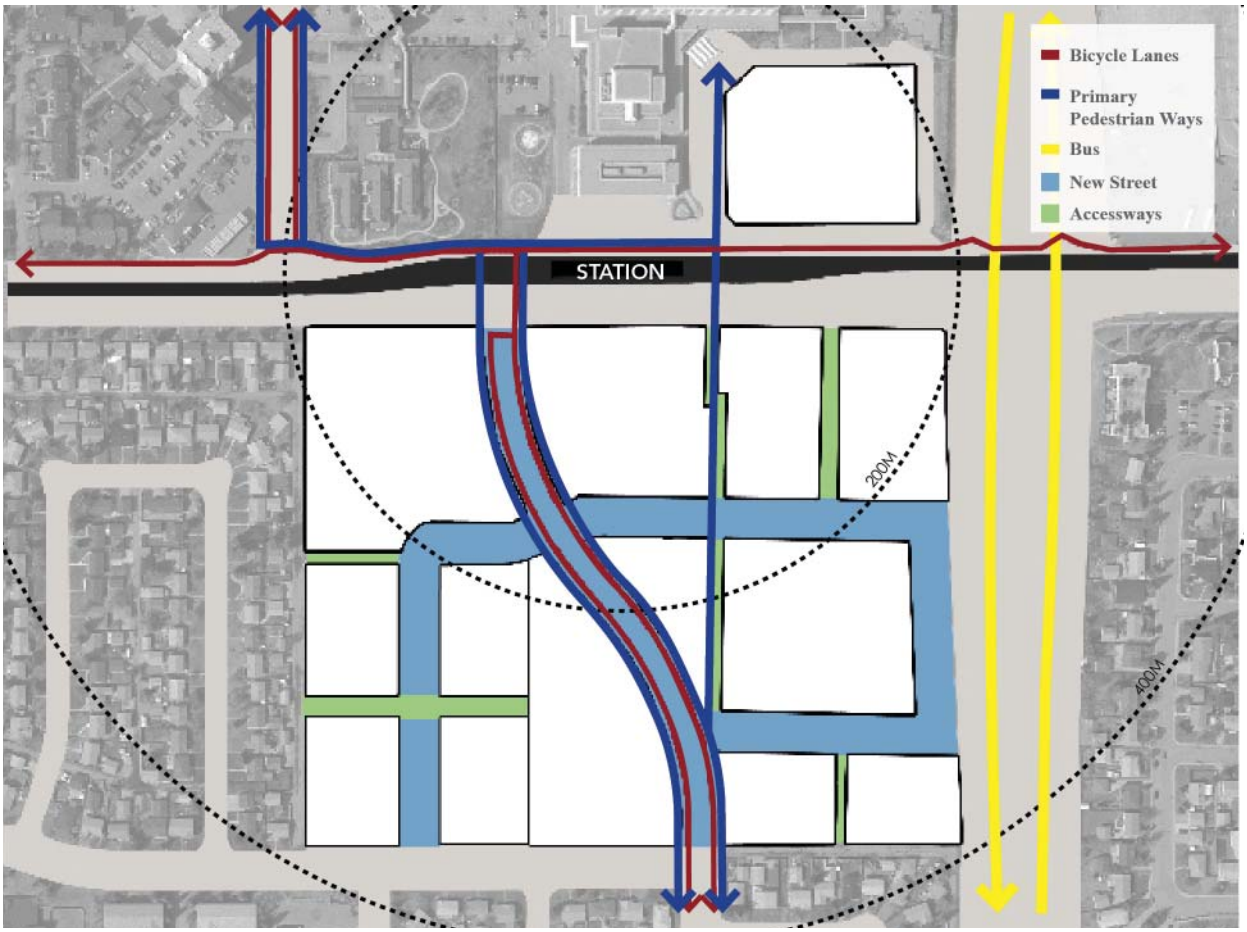


LAND USES

The land use framework for the generic Employment Station Area is consistent with the Employment Station Area Land Use and Intensity Guidelines, and Urban Parks and Plaza Guidelines. The land use frameworks consists of:

- **Employment–**1.0 F.A.R and 3 m maximum building front setback with street-oriented entries to lobbies
- **Ground-Floor Retail–**0m building front setback oriented to roadway and curbside parking
- **Residential–**250 du/ha and 3m building front setback (max) with street-oriented entries to lobbies
- **Urban Park–**meets 1.0 ha area maximum

Figure 110: Generic Employment Station Area–Circulation



CIRCULATION

The circulation framework for the generic Employment Station Area complies with the requirements established in the Public Realm Guidelines for blocks, public boulevards, bicycle facilities, and roadways. The circulation framework consists of:

- **Block Dimensions–**maximum 100 m width x 200 m length block size. (Exception: A mid-block accessway has been provided in lieu of a public street to break up the development block length directly south of the transit alignment. Additional street connections onto the primary east-west street in this area are precluded due to insufficient intersection spacing. All mid-block accessways provided at 10 metres wide (minimum).
- **New roadways and public boulevards**
- **Bicycle parking and bicycle lanes (one-way on each side of the central station access street)**

GENERIC ENHANCED NEIGHBOURHOOD STATION AREA

Figure 111: Generic Enhanced Neighbourhood Station Area–Before TOD Guidelines Application

Before TOD Guidelines

The low-density aging mall site, located on an approximately 13 hectares, includes some neighbourhood-serving retail uses that should be maintained, but in a more dense, urban form.

After TOD Guidelines

The demonstration plan shown on the following page identifies new retail, housing, and public parks. Retail and higher-density residential uses are organized around a set of linear parks which serve as an amenity for the residential and an organizing feature for the retail. The site is well suited for higher-density residential and street-oriented retail use easily accessible from a primary east-west roadway corridor.

The plan illustrates a development concept that meets the minimum requirements for residential density and maximum requirements for urban parks, but exceeds the ground-floor retail expectations established for Station Area Plans. Residential parking shown on the plan are below-grade.

The redevelopment plan also features a protected bikeway on the primary north-south street in the station area located east of the planned LRT right-of-way.

Figure 112: Generic Enhanced Neighbourhood Station Area–After TOD Guidelines Application

Development Potential

The development summary below identifies the potential quantities and intensities of new uses, and the associated parking that result from application of the TOD Guideline requirements.

Figure 113: Generic Enhanced Neighbourhood Station Area–Development Summary

ENHANCED NEIGHBOURHOOD STATION AREA - DEVELOPMENT SUMMARY TABLE

LAND USE	TOTAL SITE AREA	DWELLING UNITS (du) OR BUILDING AREA (m^2)	DENSITY / INTENSITY / PARKING RATIO	OFF-STREET PARKING SPACES
Residential	4.8 ha	1200 du @ 93m^2 per unit	250 du/ha	—
Residential Below-Grade Parking	—	42,250 m^2	1.08 spaces per unit*	1300 spaces
Retail	1.7 ha	20,115 m^2	—	—
Retail Surface Parking	—	3720 m^2	2 spaces per 100 m^2	100 spaces
Retail Structured Parking	1.2 ha	9425 m^2	2.5 spaces per 100 m^2	290 spaces
Urban Parks	1.0 ha	—	—	—
DEVELOPABLE AREA **TOTAL AREA**	**8.7 HA** **12.62 HA**			

* Parking ratio's based on Edmonton's draft parking regulations

LAND USES

The land use framework for the generic Enhanced Neighbourhood Station Area is consistent with the Enhanced Neighbourhood Land Use and Intensity Guidelines, and Urban Parks and Plaza Guidelines.

The land use frameworks consists of:

- **Residential–**250 du/ha and 3m building front setback (max) with street-oriented entries to lobbies
- **Ground-Floor Retail–**0m building front setback oriented to roadway and curbside parking
- **Urban Park–**meets 1.0 ha area maximum

Figure 114: Generic Enhanced Neighbourhood –Land Use

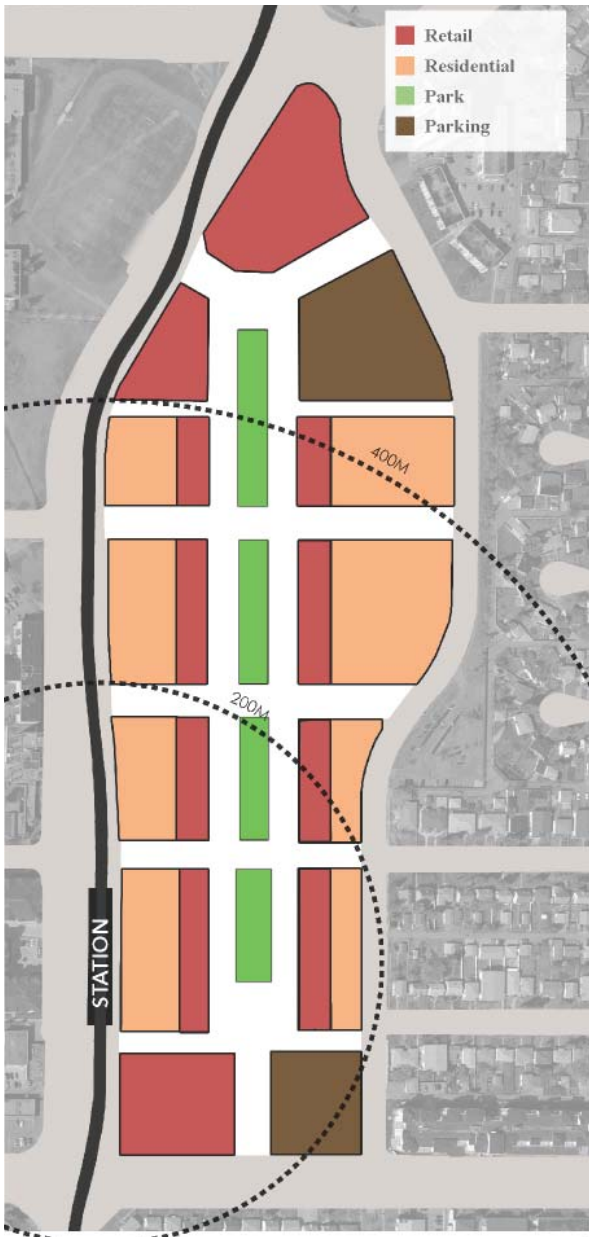
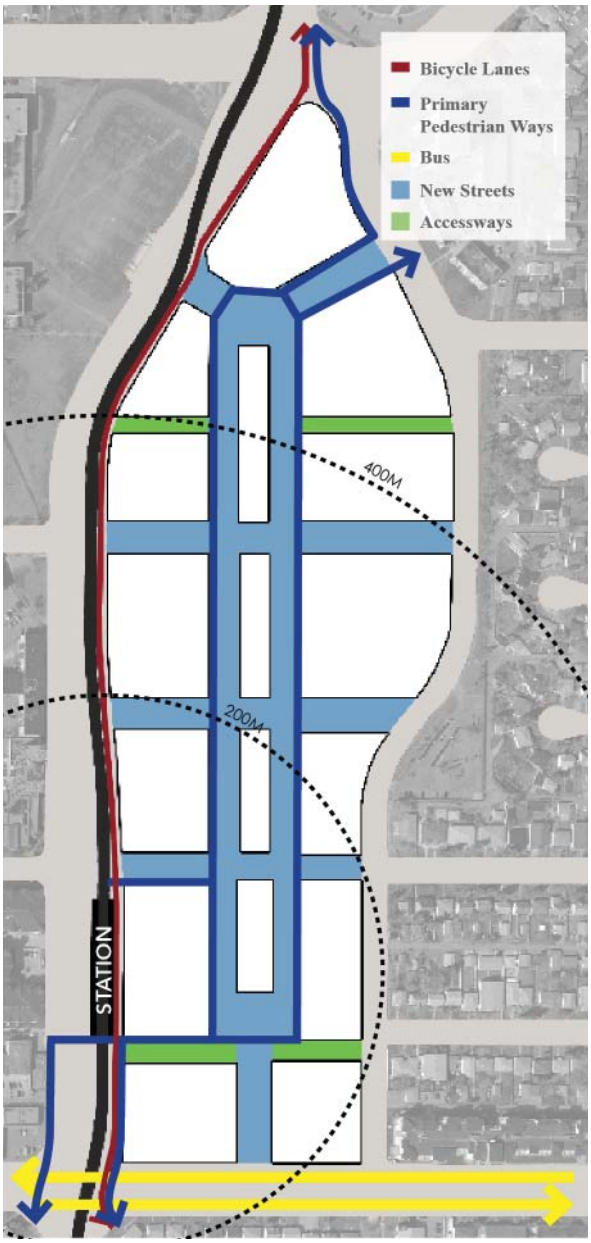


Figure 115: Generic Enhanced Neighbourhood -Circulation



CIRCULATION

The circulation framework for the generic Enhanced Neighbourhood Station Area Plan complies with the requirements established in the Public Realm Guidelines for blocks, public boulevards, bicycle facilities, and roadways.

The circulation framework consists of:

- **Block Dimensions–**maximum 100m width x 200m length block size; Mid-block accessways at 10 metres wide minimum
- **New roadways and public boulevards**
- **Bicycle parking and bicycle lanes (two-way bikeway adjacent to the LRT Line)**

IMPLEMENTATION

IMPLEMENTATION

Edmonton has a number of guidance documents, plans, and studies that are supportive of TOD and the City Vision. These include, but are not limited to:

- *The Way Ahead*
- *The Way We Move*
- *The Way We Grow*
- *The Way We Live*
- *The Way We Green*
- LRT Design Guidelines
- Guidelines for Urban Style LRT
- Walk Edmonton: Steps to a Walkable City
- Great Neighbourhoods Initiative
- LRT Expansion Plan System Design Report
- Smart Choices Program
- Capital City Downtown Plan
- Residential Infill Guidelines
- The Quarters Downtown Urban Design Plan
- Bicycle Transportation Plan
- Long Term Public Transportation Strategy

Further implementation of the TOD Guidelines will require planning, regulation and ongoing City actions.

PLANNING & REGULATION ACTIONS

On the planning and regulation side, there are various mechanisms to implement and explore:

- Undertake Station Area Planning
- Ensure capital funding is provided for strategic property purchases for the provision of key amenities in tandem with Station Area Plans
- Investigate and design appropriate regulatory approaches, that may be implemented through the Zoning Bylaw, such as parking reductions, zone revisions or other mechanisms

CITY ACTIONS

To support Edmonton's significant financial investment in transit infrastructure and get people to the stations, the City's guidelines, standards and approaches should be re-examined to ensure they support the TOD Guidelines. Areas of influence include:

- Standards for street layout, Level of Service (LOS)
- Street-Based Architectural Design Guidelines
- Transit Interchange
- Urban Parks and Plazas
- Drainage
- Funding Mandates
- Utilities
- Public Art Integration
- TOD Education and Communication

To further implement the TOD Guidelines, a TOD Implementation Strategy will be prepared. This will identify actions to be taken at the City's corporate, policy, program and plannning level that are necessary to facilitiate successful transit oriented development in Edmonton.

The Guidelines will be reviewed every five years to ensure they are still applicable as Edmonton's LRT system expands and the city grows.

GLOSSARY

GLOSSARY

The following definitions clarify terms used in this document.

Accessway—a path or a route that provides access to a specific destination or property

Adjacent—immediately preceding or following, in close proximity, without anything of the same kind in between

Amenities (On-site)—aesthetic or other features of a development that increase its marketability or usability to the public

Area of Influence—area between 400 and 800 metres from the transit station (may contain unique amenities, medium-intensity uses and other transit-related features)

Arterial Roads—Intended to carry large volumes of traffic between areas ("through" traffic) with fewer access opportunities to adjacent properties and are defined by the Transportation System Bylaw

Articulation—creating variations in the exterior walls of a building, such as placing windows and doors, changing the plane of the façade, or adding bays, to add to visual interest

Auto Oriented Site Design—an area where the location and arrangement of buildings, parking and loading facilities are designed to maximize access, egress and visibility toward the motorized vehicle rather than the pedestrian

Auto Oriented Uses—includes uses such as car sales, car wash/service stations and drive through businesses

Bike Box—delineated areas where cyclists, at a red light, can advance ahead of stopped vehicles while waiting for the light to turn green. Cyclists are therefore more visible to vehicles and are prioritized higher as road users

Bike Station—a covered or enclosed facility where bike lockers, bike storage, changing rooms and/or repair facilities are located

Bikeability—The extent to which the built environment allows people to bike to get to everyday destinations for work, shopping, education and recreation

Bio-Swales—landscape elements designed to remove silt and pollution from surface runoff water

Block—the land area bounded by public rights-of-way

Build-Out Concept—the illustration and/or description of a vision for a station area should all TOD sites and associated infrastructure be constructed per plan requirements

Building Area—total square metres of floor area in a building

Circulation Framework—a plan and approach for a network of complete streets within the study area that allows pedestrians, bicyclists, motorists and public transit patrons to move directly, conveniently, and safely throughout the district and between the station, surrounding neighbourhoods and adjacent uses

Collector Roads—Provide neighbourhood travel between local and arterial roads and direct access to adjacent lands. Buses generally operate on collector roads within neighbourhoods

Compatible—design or approach that is comfortably related to other surrounding elements or areas

Connectivity—the directness of routes between origins and destinations and the density of connections in a pedestrian or road network. A connected transportation system allows for more direct travel between destinations, offers more route options, and makes active transportation more attractive

Curb-Extension—widened sidewalk areas at intersections or mid-block, often in place of parking, thereby narrowing the pedestrian crossing distance when crossing a right-of-way

Density—the number of dwelling units, square metres

Development—the transformation of an area from being undeveloped or underdeveloped. Development includes all improvements on a site, including buildings, other structures, parking areas, landscaping, hardscaping, and areas modified from their existing condition to support any kind of activity

Development Capacity—the total amount of development that may be built in an area

Employment Uses—land uses that are designated for office or commercial use

Façade—the outside of any exterior wall of a building

Finished Floor—the elevation of the final floor covering inside a building

Flanking—to be situated at the side of

Floor Area Ratio (FAR)—the total floor area of all buildings or structures on a given site divided by the total area in square metres (m^2)

Fronting—the part or side of a building that faces forward, typically referring to the face along a right-of-way

Furniture Zone—an area, typically between the public boulevard and the street, for furniture such as seating, lighting poles, and trash receptacles

GHGs (Greenhouse Gas)— gases in the atmosphere that absorb and emit thermal infrared radiation. Greenhouse gases in the Earth's atmosphere include water vapour, carbon dioxide, methane, nitrous oxide, ozone, hydrofluorocarbons, perfluorinated carbons, and halogenated fluorocarbons

Greenfield—land that is undeveloped except for agricultural use, especially one considered as a site for expanding urban development

Greenfield Station Area—a station area that is comprised of predominantly Greenfield sites

Ground-Floor—the level of a building that is accessible from the public boulevard

Implementation Strategy—a prescriptive guide that identifies the key steps that should be taken to stimulate development momentum and describes both public and private actions and projects, responsibilities and schedules

Infill—development in the existing areas of a city, occurring on vacant or underutilized lands, or behind or between existing development and which is compatible with the characteristics of the existing area

Intensification—the development of a site at a higher density than currently exists. Intensification can be achieved through: redevelopment (including brownfield and greyfield sites), development of vacant/underutilized lots, the conversion of existing buildings or through infill development in previously developed areas

Intensity—determined by dividing the square metres (m^2) of building floor area dedicated for commercial or employment use by the net area in square metres (m^2) of the site

Land use framework—a descriptive plan identifying a mix of transit-supportive employment, residential, retail and other trip-generating uses and densities within the station area, focusing higher-density uses within 400 metres from the station

Large Format Retail—Development for the purpose of retail sales that is intended to attract business and satisfy consumer retail demand for a wide area encompassing several residential neighbourhoods, and provides higher order goods and services that are not required on a day to day basis to a large geographic area

LRT (Light Rail Transit)—electrically powered rail transit running on light gauge rail and operating in exclusive rights-of-way or dedicated running ways below, above, or at grade in trains of multiple articulated cars.

Major Project—projects with a site area 1 hectare or larger. New neighbourhoods, enhanced neighbourhoods, or centre of employment projects with a site area 0.25 ha or larger.

Massing—the combined effect of the height, bulk, and silhouette of a building or group of buildings

Mid-Block Accessways—linkages that are provided in the middle of a development block to break up larger block sizes and provide pedestrian/bike circulation between two streets

Mixed-Use—a mix of land uses within a building, site, or area (for example a residential use with ground-floor retail)

Mode Split—the number of trips or (more common) percentage of travelers using a particular type of transportation

Multi-Family Residential—attached units, such as semi-detached dwellings and duplexes, as well as low and high-rise apartments/condominiums

Multi-Modal Transportation—use of different means of transport, such as train, bus, car, walking and cycling to arrive at a destination

MUT (Multi-Use Trail)—a multi-use trail, also known as a Shared Use Path, serves as part of a transportation circulation system and supports multiple non-motorized transportation and recreation opportunities, such as walking, bicycling, and inline skating

Neighbourhood-Serving—commercial uses, scaled and programmed to meet the basic needs and services of an immediate neighbourhood area

One-Stop Destinations—a compact urban centre providing a comprehensive selection of goods or services at close proximity in order that an individual may arrive once and walk to respective destinations

Park & Ride—parking facilities that are built to formalize and make readily available the option of multimodal travel (particularly automobile and transit) and allows the transfer to a high-occupancy mode; Park & Ride facilities are typically located at transit centres or rail transit stations and can range from surface lots to multi-storey parking structures

Parking, Curbside—on-street parking spaces that are located parallel and adjacent to the street's curb

Parking, Surface—parking which is provided at ground level

Pedestrian Boulevard—an area dedicated to pedestrian movement, typically between buildings/lots and a street

Pedestrian-Oriented (Walkable)— an environment designed to make travel on foot convenient, attractive, and comfortable for people of various ages and abilities. Considerations include the directness of the route, safety, amount of street activity, separation of pedestrian and auto circulation, street furniture, surface material, sidewalk width, prevailing wind direction, intersection treatment, curb cuts, ramps and landscaping

Pedestrian Throughway—continuous path for pedestrians clear of furniture or other objects

Planned LRT Station—an LRT station that has been identified in a Council approved Concept Plan or in a Council approved corridor in the Transportation System Bylaw

Primary Entrances—entries into buildings that will most typically be used by residents, users, and visitors

Promenades—progression of open walk areas, typically including landscaping and viewing opportunities

Protected Bikeway—a path of travel dedicated to bicycles which has a barrier between the path and adjacent motor vehicle lanes

Public Realm—all lands such as streets, parks and plazas that are owned by or accessible to the public

Redevelopable—undeveloped or underutilized land

Redevelopment Capacity—amount of redevelopment

Redevelopment (reuse) Sites—sites that have previously been developed and are slated to be developed again

Retail—businesses that engage in the sale of merchandise or that are restaurants

Retail Anchor—can be a single retail use or a cluster of similar use, high traffic generating uses tha foster and lead to the combination ('chaining') of additional shopping activities along a retail street or within a shopping centre during a single shopping trip. A retail anchor may range from 930 m^2 to 13,900 m^2. Typically retail anchors in a TOD setting range from 2,790 m^2 to 5,575 m^2.

Rezoning—the process of establishing a new zoning designation for a site or area

Right-of-Way (ROW)—a strip of land, including the space above and below the surface that is platted, dedicated, condemned, established by prescription or otherwise legally established for the use of pedestrians, vehicles, or utilities

Roadways, Arterial—Intended to carry large volumes of traffic between areas ("through" traffic) with fewer access opportunities to adjacent developments and are defined by the Transportation System Bylaw.

Roadways, Collector—Provide neighbourhood travel between local and arteial roads and direct access to adjacent lands. Buses generally operate on collector raodas within neighbourhoods.

Screening—to block from view or limit visibility

Setback—the minimum distance from the property line at which a building must be built

Site—an area considered for the purpose of zoning, rezoning, development, or planning. A site can consist of a parcel or multiple parcels, or one ownership or multiple ownerships Station Area—the area defined by a circle with an 800 metre radius (1,600 metre diameter) that is centered on a fixed-alignment station platform

Station Area Plan—a framework for private sector redevelopment and public sector improvements within 800 metres of an LRT station

Station Area Type—a set of categories for LRT station areas, each category describing different land use and intensity expectations, and establishing unique characteristics that will guide development and redevelopment within a station area; one category or "type" is assigned to each station area

Statutory Plan—a plan adopted by municipal bylaw under the authority of the Municipal Government Act. Examples of a statutory plan are: a Municipal Development Plan, Area Structure Plans and Area Redevelopment Plans

Suburban Fringe—areas that exist on outer edge of existing suburban development

Sustainable (Design/Planning)—practices that protect and enhance the human and natural resources that will be needed by future generations to enjoy a quality of life equal to or greater than our own; able to be sustained for long periods of time with minimal harm to the environment

Thresholds—the conditions under which certain requirements apply

TOD Guidelines—a set of guidelines that identify design expectations for the area within 400 metres of each existing or planned LRT station area. They define expectations, determine uses, establish the area character, and identify minimum and maximum expectations for many area aspects

Transit Avenue—Linear corridors served by one or more bus routes that provide all day service and connect major trip generators, LRT stations and transit centres. The bus routes serving these areas operate with at least 15 minute frequency during peak, weekday miday periods, Saturday midday periods and Sunday midday periods, seven days a week. Land uses along these corridors (residential, commercial, and/or employment) are oriented toward the street, have existing or planned higher density, pedestrian orientation and design and may have existing pedestrain traffic.

Transit Centre—a major focal point or activity centre specifically designed and developed for ETS services. Transit Centre locations often coincide with other major activity nodes such as shopping centres and spectator sports venues to promote multi-purpose trips and provide convenient route interchange facilities. Transit Centres are the interfaces between "main line" and express service routes and local feeder and community bus services.

Transit Oriented Development (TOD)—urban development that is planned and integrated with an LRT station at its core. In a TOD, housing, shopping and employment are concentrated along a network of walkable and bikeable streets within 400 metres of the transit station

Transit Ridership—the number of riders who ride a public transportation system such as a bus and/or LRT system

Transition (Heights)—the tapering of building heights as a way of achieving compatibility of built forms and mitigating impacts (views, sunlight, etc.) of shifts from areas of one character (i.e. low-rise) to another (i.e. high rise)

Transparency—the degree of visibility through a building façade

Trip Generator—an activity or use that requires vehicular travel, regardless of the form of travel (LRT, bus, bicycle, car)

Underutilized Parcels—land that is currently developed or was at one time developed and that is insufficiently utilized or is serving below its full potential, e.g. old strip mall, surface parking lot

Undeveloped Land—land (vacant) that has not previously been developed

Universally Accessible—design of the built environment in a way that increases the accessibility, safety, mobility, and independence for people of all ages and abilities

Urban Parks—predominantly landscaped parks within an urban setting that primarily serve the local community

Urban Plaza—predominantly hardscaped plazas within an urban setting that primarily serve the local community

Vehicle Throughway—a path of dedicated travel intended primarily for cars and trucks

View Lines—an area that is visually unobstructed to allow pedestrians and vehicles clear views in order to maximize safety

Walk-Up Ridership—riders of transit who have arrived by foot to enter the transit system

Walkability—The extent to which the built environment allows people to walk to get to everyday destinations for work, shopping, education, and recreation, and can be affected by street connectivity, mix of land uses, destinations, and pedestrian infrastructure.

APPENDICES

APPENDIX 1—TOD SUPPORTIVE COMPONENTS

LAND USE

Land use and community character policies and regulations clearly influence the City's potential to create a sustainable community. Several important elements needed to create a transit supportive environment include land use mix and development intensity. The most important land use elements promote the creation of walkable communities. This will allow the community to efficiently change into transit supportive communities over time and preserve established residential neighbourhoods.

Preferred Uses

Land uses influence the number of trips, the time of each trip, and the mode(s) of travel used differently. Office, medical, institutional, educational (high school and post secondary), seniors housing and high density residential uses provide the highest potential for transit ridership. Large format retail, industrial, and low density residential land uses generate higher dependency on vehicle trips. Automobile dependant land uses such as auto-oriented and drive-thru commercial should be discouraged within 800 metres of LRT Stations.

Seniors' housing should be encouraged within the area of influence. LRT and transit provides a cost effective, convenient and efficient means of transporting persons with reduced ability or desire to drive.

NEIGHBOURHOOD CHARACTER

Block Dimensions

Block dimensions, and the street grid they form, are the most critical elements in ensuring a walkable and bikeable community. Guidelines and standards must require a fine-grain street grid around LRT stations and other transit facilities.

Transitions between New and Existing Neighbourhoods

In North America, many communities are focused on high density around transit, the transit initiative itself is jeopardized by adjacent neighbourhoods' rejection of proposed land use intensifications. Every effort should be made to intensify development while respecting the existing residential communities.

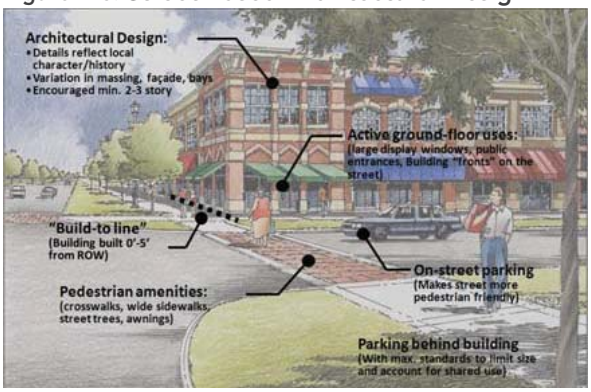
Building Heights

The tallest buildings do not always facilitate the most walkable environments. The most recognized walkable communities in the world, such as Paris, Rome, and Washington D.C., limit densities through building height restrictions yet still have very successful transit systems.

Street-Based Application of Design Guidelines

As design guidelines are being applied, they should encourage development to specifically address street hierarchy or street types. The resulting development will reflect the desired pedestrian environment that will best serve the development and the community. The street types should reflect the expected quality and quantity of pedestrian activity on various streets.

Figure 116: Street-Based Architectural Design



Building Mass / Scale

Public and private realms are distinguished by architectural details. Pedestrian activity can be encouraged and discouraged by the quality of architecture. Building design requirements should not dictate architectural style; rather, they should inform fundamental architectural form based on the quality of the pedestrian experience at the street level.

Off-Street Parking

Parking is an important development issue influencing transit ridership. Therefore it may be appropriate to establish parking minimums and maximums in LRT Station, transit centre, and Transit Avenue areas.

Environmental and Sustainability Standards

In an age of limited energy options and known increasing human impacts on the natural environment, it is important to build environmentally appropriate buildings and neighbourhoods. One example is Leadership in Energy and Environmental Design (LEED) criteria. This measurement system designed for rating commercial, institutional, and residential buildings, may be applied to the design of neighbourhoods. LEED criteria, based on accepted energy and environmental principles, strike a balance between known and established practices and emerging concepts. It evaluates environmental performance from a life cycle perspective, providing a definitive standard for what constitutes a "Green Building" or "Green Neighbourhood".

TRANSPORTATION

Transportation infrastructure dictates land use by the access it provides and the context appropriateness of its design. The design quality of roadways and transit infrastructure influences the development possibilities of adjacent land use. High speed roadways designed without on-street parking, minimum sidewalk dimensions, and wide building setbacks will not attract a "Main Street" retailer. Similarly, if rail transit requires separate right-of-way and is isolated from streets, the development opportunities around LRT stations will be limited by the lack of interconnectivity and proximity to adjacent development.

Street Design Guidelines

Street design guidelines should provide guidance for low speed urban environments conducive to the high-volume pedestrian-friendly environment anticipated within transit station areas. Flexible level of service (LOS) standards allow for greater congestion in areas served by LRT because residents have better travel options. In addition, they can improve the pedestrian network and accessibility of transit.

Public Boulevards (including sidewalks)

Public boulevards are the backbone of a balanced transportation system. Better pedestrian network design improves the convenience of transit service and encourages alternative modes of transportation.

Transit Interchange

The quality of the interface between bus transit and rail transit is critical to ridership. The design of these interchanges can either promote development adjacent to transit or discourage it. The placement and design of transit interchanges at LRT stations should be guided by the surrounding context. Flexibility should be enabled by the City's design criteria. This allows inventive solutions that encourage private development adjacent to the LRT stations.

Station Amenities

Station amenities include shelter, heating, benches, and ticketing. For system identification and customer comfort, station amenities should remain constant between the transit area-types within Edmonton.

Grade Crossings

In an ideal transit operator's world, there would be no grade crossings with surface streets. In an idealized urban design world, transit would cross surface streets at grade with post mounted signals. Clearly neither side would create a transit supportive environment. Edmonton transit should reevaluate its design criteria to allow additional at-grade street crossings in appropriate high density pedestrian environments. This would allow the flexibility for both gated and signalized crossings within existing LRT station areas.

On-street Parking

On-street parking provides a buffer between vehicles and sidewalks, creating a safer place for pedestrians. More importantly, on-street parking activates the ground floor of buildings and creates an active street front environment for pedestrian use.

Bicycle Facilities

Bicycle facilities are an important component of a balanced transportation system.

Bicycles provide an alternative form of transportation which has four times the speed and sixteen times the coverage area of other non-motorized travel. Early consideration in the community planning process coupled with effective facility design will establish the bicycle as a viable transportation mode in a balanced transportation system.

Bicycle infrastructure to and from LRT stations and transit centres is essential and should include shared-use paths, off-street bicycle paths, and bicycle lanes. Bicycle amenities, such as secure bicycle parking, should be provided at LRT stations.

Transit Passenger Drop-off

One way for transit passengers to get to transit is to be dropped off by a friend, partner or taxi. Drop-offs can happen infrequently due to weather or convenience or more regularly due to the coordinated schedules for members of a household. This transfer of people from personal vehicles or taxis to transit should be accommodated through the design of the LRT station or transit centre and the adjacent roadways. This should be done in a way that enhances TOD rather than detracts from it and respects the people living, working, and shopping near the LRT station or transit centre.

PARKS, PUBLIC SPACES, CIVIC INFRASTRUCTURE, COMMUNITY CHARACTER

The community investments of parks, amenities and civic infrastructure have a profound impact on the adjoining land uses. Access to quality parks and public space is a critical element in urban living, particularly in higher density cities. To provide appropriate facilities in urban areas, all higher density residences should be within 3 blocks of a public park, square, or plaza.

Urban Plazas

Plazas serve as an amenity for people of all ages, during all seasons and during all hours of the day. To keep plazas animated and safe, they must be surrounded by buildings with active ground floor uses.

In a station area, urban plazas should be located adjacent the station platform and have large paved areas for public events, and public assembly. Plazas may also serve as surge space for transit platforms. Urban plazas are an essential component of regionally significant station areas, such as those with stadiums or arenas.

Schools

Existing schools and outdoor play areas can be integrated within station areas. Whenever possible, schools should be placed within areas served by transit. Schools and outdoor play areas that can be integrated into the urban form, such as the ground floor of a mixed use building, are encouraged within 400 metres of an LRT station to accommodate families. Land-consumptive designed schools, such as schools with associated field uses, are more appropriate within 400 to 800 metres of an LRT station.

Affordable Housing

Affordable housing is perhaps the most difficult issue facing the urban planning, design, and development community. Because improving a neighbourhood leads to higher housing values and potential displacement of long-time residents, affordable housing should be considered. The Municipal Development Plan defines affordable housing as housing that requires no on-going operating subsidies. It is targeted for occupancy by households who are income challenged (earn less than the median income for their household size and pay more than 30% of that income for housing) and require no in-situ support services.

Family-Oriented Housing

Any neighbourhood, particularly one that is transit oriented, benefits from demographic diversity. A variety of residents with different household types, incomes, and ages contributes to the stability, safety, and character of an area. A wide range of housing options is encouraged in station areas to support this diversity and accommodate people through all stages of their lives.

Family-oriented housing is an important component of such a mix. This type of housing is characterized by units with multiple bedrooms and private outdoor spaces (porches or yards), as well as common open areas that are visible from family dwellings. It is best located close to schools and open spaces to capitalize on and support existing child-friendly amenities

Public Art

Public art integrated into a station environment offers a number of opportunities and benefits. It contributes to the sense of public invitation. It serves as a gateway element. It enhances the visual qualities of the area. It adds to the uniqueness of each respective station's neighbourhood. And it serves as to denote the quality and character of the time in which it was crafted, chosen and placed.

Ideally public art will be selected through an appropriate public process, and selected based on its appropriateness for the specific site. The least successful rail-oriented art is "plop art", chosen and placed after the fact in remainder locations. A more successful approach is to fund and begin early the process of identifying artists and art locations, and allowing the artist, the system designers, and the neighbourhood to identify neighbourhood themes in order to integrate the themes and the art into the station design. Refer to the City Policy C458B, Percent for Art to Provide and Encourage Art in Public Areas.

OTHER CONSIDERATIONS

Development Incentives

Development incentives can have tremendous value in ripe development markets with land scarcity. They can help direct augmented densities to particular locations through density transfers. They can reward projects through additional development capacity and other flexibilities in exchange for public and other amenities provided by a project.

Another arena of incentives that might have value would be procedure-based incentives. For example, streamlined review tracks that simplify and expedite the approval of projects in exchange for the forwarding of particular policy-supportive elements.

Development incentives can be site-specific. For example, as higher density development in Edmonton is most likely to occur incrementally, development incentives should be concentrated in a few key station areas. Those station areas would presumably be identified as those that have stronger markets, significant opportunity sites for development, with the potential to leverage public incentive into private investment.

Parking Standards

Generally, the intention of LRT and appropriate TOD is to achieve densities and locate transit-accessible services and housing that will maximize ridership and most effectively leverage public investment. Maximizing ridership equates to a lesser reliance on the automobile, and a need for fewer vehicles per capita. The wisdom and success of this intention has been demonstrated in comparable systems elsewhere. Additional benefits of this decrease in cars include: development savings due to more efficient land utilization, construction savings as a result of minimized structured parking, a lowering of infrastructure maintenance costs, and greater per capita disposable income due to lower real estate costs and fuel savings.

One way in which to allow the market to naturally recalibrate is to lower or eliminate or further lower parking minimums. This is equally true for both residential and commercial development. By allowing development to consider lower minimums, it encourages development to otherwise innovate in order to allow yet lower development costs while ensuring marketability and project success. A simple example would be looking to developments elsewhere that directly subsidize or incent transit usage, as well as incorporating other transportation alternatives (shared vehicles, bicycle facilities) in order to accommodate a lower parking count.

Public/Private Partnering

One way to best foster the meeting of public goals and the needs of private development is through public/private partnerships. Such partnerships can work creatively together to best-develop appropriate and visionary catalytic projects around transit. This is particularly so when working to manifest projects that are atypical and/or addressing unusual challenges.

For example, the City of Edmonton could consider partnering with local developers to build example projects, such as mixed-income housing or mixed-use buildings, which fit this development type. In addition to familiarizing the development community with this approach, these projects could act as catalysts to the creation of mixed-income, mixed-use, transit-oriented communities.

Strategic Public Investment

Public investment offers the opportunity for the City to catalyze development and lead the direction and quality of private development. Well-targeted investment in infrastructure and placemaking initiatives can support the transformation of key station areas. For example, investments in neighbourhood amenities such as parks and streetscape improvements have a direct impact on property values, and therefore, development feasibility. Investing in infrastructure and placemaking in key station areas, such as bike lanes, streetscaping and open space will allow the City of Edmonton to advance the creation of livable communities around transit. This will leverage public funds to encourage private investment.

Investigate Innovative Job Attraction Approaches

Many jobs will naturally come to Edmonton. There may be others that are desirable that need to be specifically encouraged to locate here rather than going elsewhere. Strategies can be developed to attract specific jobs and/or industries to specific locations. Policies and programs may be developed which can attract and direct future employment growth to the Downtown and high-density job centres. The City could consider developing programs to attract, retain and develop higher-density industries that support transit. Approaches might include:

- tax rebates
- grants to fund commercial improvement and redevelopment
- and concerted recruitment efforts to bring new businesses to the city.

APPENDIX 2—MARKET AND ECONOMIC ANALYSIS

MARKET OVERVIEW

An economic and market analysis was undertaken by Strategic Economics to test various underlying assumptions and aspects of the TOD Guidelines. The analysis considered:

- The context of the Edmonton market
- Local and regional demographic trends
- Analysis of Transit Oriented Development throughout North America
- The specific regulatory approaches embodied in the TOD Guidelines

The purpose of the testing was principally to ensure that identified development opportunities were being best utilized, and that identified densities are appropriate.

The assessment also provided related recommendations for additional policy and implementation approaches to help ensure, and further support, successful TOD in Edmonton.

The analysis has confirmed that the densities, and associated building types, are fitting for the Edmonton context.

ECONOMIC PRINCIPLES OF TOD

Transit-oriented development offers a range of economic, social and environmental benefits for individual residents and the region as a whole. Households in transit-rich locations have increased access to jobs, services, educational and health institutions, social networks, and most of all, can reduce their cost and variability of cost of living by paying less for transportation. At the regional level, development linked with transit has the potential to deliver a variety of benefits, including:

- Cost savings to communities
- Improved connections among regional employment opportunities
- diverse, mixed income neighbourhoods
- Environmental benefits (e.g. reduced greenhouse gas emissions)

A new rail line, however, cannot create a market for development on its own. This section examines the economic principles behind TOD, including a look at the factors which are known to shape development around transit.

Transit alone cannot create a new market for development, but it can accelerate an existing market.

Transit is most effective in accelerating the market in places where new transit creates greater accessibility to desirable locations (such as employment or other activity centres), and those which have development opportunity sites.

Transit-oriented development can take many forms. A range of higher density development types, from townhomes to mid- or high-rise buildings, can support transit ridership and walkable, transit-oriented communities. In mature communities that are unlikely to experience increased density in the short- or mid-term, efforts should focus on increasing access to transit and promoting walkable communities.

Proximity to employment concentrations and downtowns are critical factors driving development along transit lines. A forthcoming Centre for Transit Oriented Development (CTOD) study of development patterns around recently-built transit in the United States indicates that the majority of transit-oriented development is occurring in and around downtowns and other employment centres. While the improved transit service provided by the light rail was an important amenity, the impetus for development was more strongly related to longer-term efforts to revitalize the centre cities, as well as shifting market demand favoring central locations with urban amenities, shopping and entertainment.

The scale of development around transit is directly related to the size of the system. Extensive systems (such as those in New York, Boston, Chicago and Philadelphia) typically attract a disproportionately

large share of jobs and housing. With 57 stations at build-out, Edmonton's rail system will be classified as medium.

Certain industries benefit the most by locating near transit. CTOD research has shown that office- and knowledge-based industries are most likely to locate around transit. These include:

- Government
- Finance and insurance
- Business services
- Real estate
- Information
- Professional, scientific and technical services
- Management of companies and enterprises

Low intensity jobs (jobs per square metre) in manufacturing, wholesale trade and transportation and warehousing, which benefit from low land costs, large parcels and access to freeways, are less likely to locate around transit.

Industries that benefit from agglomeration should be clustered around existing employment. The professional and service industries; research and development industries; state and federal government; and manufacturing industries frequently locate in close proximity to other businesses within their industry. In planning for employment growth, these industries should be located around existing employment centres in order maximize the benefits of agglomeration.

RESIDENTIAL GUIDELINES

Existing Residential Market

This section provides an overview of the existing residential market in Edmonton.

The predominant market niche in Edmonton has been families. Therefore production has focused on single family homes in the suburbs. Nearly half of all development in the Edmonton metro area consists of low density residential development in the suburbs. However, this trend often masks demand from other segments of the market, including:

- Single person households
- Young adult households looking for a non-auto oriented lifestyle
- Households with older members who are cutting back on driving.

According to CTOD research, these households will generate an increasing demand for TOD over the next real estate cycle, in addition to other households looking to live in urban areas with accessible and convenient services, amenities and jobs.

High-density development faces significant challenges in the context of Edmonton's residential market and development community. Edmonton currently absorbs approximately 200 units of high-density residential growth per year, typically in areas close to the city centre and overlooking the River Valley. There are presently thousands of high-density residential units proposed in the City of Edmonton, many of which are not located near future LRT corridors. New high-density residential development will have to compete with these locations. In addition, some forms of high-density development may be too expensive for most Edmontonians: price points for high-rise (concrete and steel construction) condominium units range from $4300 to $4850 per square metre, while wood frame construction is closer to $2700 per square metre. However, proximity to transit and other amenities may render new higher-density development more viable than higher-density housing products being marketed today.

New development is attracted to suburban, greenfield locations. Given the abundance of development opportunities on the City's edges, most developers find it easier to build on greenfield sites in order to avoid the higher construction costs associated with high-density, infill development. In addition, many residents prefer to live in the suburbs, in order to be closer to jobs that are

also located on the City's periphery. In this way, residential demand for housing near employment contributes to the market for suburban development

Changing Demographics

Edmonton's changing demographics will likely result in increased demand for TOD. The government of Alberta projects that 25 percent of Edmontonians will be over the age of 65 by 2050, compared to only 11 percent today. CTOD research indicates that individuals aged 65 and over will generate a disproportionate share of demand for TOD by 2025, which suggests that Edmonton's shifting demographics will support transit-oriented development. In addition, households headed by young adults (ages 15 to 34) are more likely to take transit, resulting in additional demand for transit-oriented development. Design guidelines for development around transit should take these demographic markets into account.

The shift to higher density housing will happen more slowly in Edmonton due to the relatively low cost of single family housing. Higher density, infill development is more costly than the construction of single-family homes in greenfield sites on the City's edges. Given the relatively low absorption of high-density residential units into the Edmonton market, care should be taken to establish densities that both support transit ridership and are likely to be feasible when the market returns.

Creating development capacity through TOD zoning can help facilitate construction of higher density product types, but other market conditions must also be present for latent capacity to translate into actual development. Although Edmonton may want to proactively zone for higher density buildings around all of its transit stations, the total amount of potential development under these regulations could exceed demand for the foreseeable future. Therefore, the City may have to take other kinds of proactive measures to help shape and concentrate market forces in a limited set of locations, at least in the near to mid-term.

Growth projections for the Edmonton region indicate that the proposed TOD guidelines will require consistent implementation strategies, coupled with additional policy support, to maximize TOD potential.

The Edmonton region is expected to gain approximately 600,000 residents by 2043 (Table 1). Residential development around transit will account for a share of this growth. Table 1 also illustrates the share of regional growth likely to be captured

Table 1: Projected Household Growth and TOD Capture, Edmonton CMA, Canada, 2043

2008 population	1,094,105
2043 population (expected)	1,708,779
Expected growth increment	614,674
Average household size	2.5
Expected regional household growth	245,870
Conservative capture rate, medium system (10 percent, units)	24,587
Aggressive capture rate, medium system (25 percent, units)	61,467

Sources: Capital Region Population and Employment Projections Report; 2006 Census of Canada, Statistics Canada; Strategic Economics 2010

under both conservative (10 percent) and aggressive (25 percent) TOD capture rates. These capture rate assumptions are based on experience in the US with the impact transit systems have on real estate markets depending on system size and connectivity to a range of regional destinations. According to the U.S. market, the Edmonton system would be characterized as a medium transit system, based on the number of stations. As a "medium" system, TOD demand could be expected to account for about 10 percent of total household demand. However, despite the number of stations, the Edmonton system would actually function more like an extensive system, the largest system size, because the way the Edmonton lines are laid out, they would actually connect up many of the City's major existing and proposed employment concentrations, as well as serving a high percentage of existing and potential new residential neighbourhoods. Using this range of capture rates, TOD demand through 2042 could be between 24,587 and 61,467 housing units.

Recommendations for Residential TOD Guidelines

Establish a minimum density in 'Enhanced Neighbourhood', 'Centre' and 'Employment' station areas of 250 units per hectare. A density of 250 units per hectare has the potential to support transit ridership and contribute to a livable community. However, this density is significantly higher than that which the market is currently delivering (typically 125-150 units per hectare). As discussed, public action may be necessary to ensure the feasibility of this product type around transit. Strategies for public action are discussed in the Policies and Incentives section of this memorandum. Establishing and supporting an appropriate minimum residential density would make development more attractive. It would enable stations with higher-density residential uses to compete more successfully with development sites elsewhere.

Limit the number of stations planned for higher-density residential development. Concentrating the limited demand for higher-density housing in a few key station areas would allow the City to be strategic in planning for new growth, improve the chances of successful higher-density development in selected station areas, and reduce the scale of growth captured around transit to a more likely scenario.

Identify key stations areas for high-density residential growth. Stations that currently support the highest land values (and therefore have the strongest markets), have significant opportunity sites for development or redevelopment. They are located in or around the downtown or other major employment centres are most likely to support higher-density residential development and transit ridership. Because higher density development in Edmonton is most likely to occur incrementally, the initial stages of planning should focus short- to mid-term development closer to downtown. This will be followed by other station areas with high concentrations of employment or institutional use in the longer term. Station areas with strong concentrations of high-density employment in industries such as government, finance, insurance and other office-based jobs are most likely to support nearby residential development.

Minimum densities in Residential station areas should allow for 4-storey, stick-built construction.

COMMERCIAL GUIDELINES

Citywide employment growth projections suggest that proposed guidelines will require additional policy support to ensure successful implementation.

Based on forthcoming CTOD research on the capture rate of different employment types around transit, Strategic Economics estimates demand for approximately 1,700,000 sq. metres of new employment-related development around transit in Edmonton by 2043 (Table 2). The guidelines offer a capacity of 2,400,000 sq. metres of employment-related development. As with residential development, public action may be necessary to bring the demand for employment-related development in line with the capacity created in the TOD guidelines.

CTOD research indicates that office- and knowledge-based industries, which typically locate in higher-density employment centres, are most likely to locate around transit. These businesses account for 45 percent of employment in Edmonton, and comprise the "Finance and real estate," "Business services" and "Other services" business categories. Table 2 also shows the projected demand for these higher-density employment types in the City of Edmonton in 2043, as a subset of the total demand. These industries are projected to generate demand for approximately 890,000 sq. metres of higher-density office space by 2043, or 52 percent of the total demand for transit-oriented commercial and industrial development.

Recommendations for Commercial TOD Guidelines

Establish TOD guidelines that can accommodate industries and building types that benefit the most from transit-oriented locations. CTOD research has shown that office- and knowledge-based industries are most likely to locate around transit. These include:

- Government
- Finance

Table 2 Projected Employment Growth and TOD Demand, City of Edmonton, 2043

2008 Employment	428,890	
Employment projections	**Low**	**High**
2043 employment (jobs, expected)	617,170	620,370
Expected increment of growth (jobs)	188,280	191,480
SE estimate of new employment around transit (jobs)	30,442	30,959
SE Estimate of demand for new employment-related development around transit (sq.meters)		
Other services	565,321	574,929
Business services	217,674	221,374
Finance and real estate	89,674	91,198
High Density Employment Subtotal	872,669	887,501
Total demand for new employment-related development around transit	**1,693,013**	**1,721,288**
Capacity for employment-related development created in TOD guidelines (sq. meters, average FAR of 1.0)	2,428,114	

Sources: 2006 Census of Canada, Statistics Canada; Transit-Oriented Development and Economic Growth (CTOD); City of Portland 1999 Employment Density Study; Strategic Economics 2010.

- Insurance
- Business services
- Real estate
- Information, professional, scientific and technical services
- Management of companies and enterprises

Jobs in manufacturing, wholesale trade and transportation and warehousing are less likely to locate around transit.

When possible, industries that benefit from agglomeration should be clustered around existing employment. The professional and service industries, research and development industries, state and federal government, and manufacturing industries frequently locate in close proximity to other businesses within their industry. In planning for employment growth, these industries should be located around existing employment centres in order maximize the benefits of agglomeration.

Centres should accommodate smaller nodes of employment with FARs of 0.5 or 1.0.

Many businesses do not require high-density office buildings, and would be unlikely to pay a premium for this type of office space. Permitting lower-density commercial development in mixed-use nodes would accommodate a range of employment types around transit, including:

- Retail and food service businesses
- Small professional firms
- Arts and cultural businesses.

These types of businesses also contribute to walkable, livable communities by enabling residents to complete errands and commute trips by foot or by bicycle.

Policies and Incentive Recommendations

As discussed, public action may be necessary to ensure the feasibility of the development capacities suggested in the TOD guidelines. This section includes recommendations for key policies and suggestions to support new development around transit.

Higher density development should be allowed only in TOD zones, downtown Edmonton and other strategic locations. Concentrating higher density zoning in strategic parts of the City would allow transit zones to compete more effectively for compact development, and discourage density in inappropriate locations.

Leverage public/private partnerships to develop catalytic projects around transit. The City of Edmonton should consider partnering with local developers to build example projects, such as mixed-income housing, which fit this development type. In addition to familiarizing the development community with these approaches, these projects can act as catalysts to the creation of higher density, transit-oriented communities.

Identify key stations areas for development incentives. Because higher density development in Edmonton is most likely to occur incrementally, development incentives should be concentrated in a few key station areas. Those station areas that have stronger markets, significant opportunity sites for development and are located in or around the downtown are good candidates, and have the potential to leverage public incentive into private investment.

Invest in infrastructure and placemaking initiatives to support the transformation of key station areas. A growing body of research suggests that investments in neighbourhood amenities such as parks and streetscape improvements have a direct impact on property values, and therefore, development feasibility. By investing in infrastructure and placemaking, such as bike lanes, streetscaping and open space, in key station areas, the City of Edmonton can contribute to the creation of livable communities around transit while leveraging public funds to encourage private investment.

APPENDIX 3—THE CASE FOR TOD: MODEL ASSUMPTIONS

NO TOD

MODEL ASSUMPTIONS

- LRT alignment and 5 stations are in place
- Average household occupancy is 2.6 persons per household
- Daily household trips average 10 per days (5 trips to and from various destinations)
- There are no plans requiring specific land uses or development densities.
- Residential densities are 15 units per hectare
- Transit ridership (10% of all trips) comes from residential development within a 400 metre radius of the station – a 5 minute walk
- Average LRT trip is $2 per ticket

QUANTITIES FOR 1 STATION AREA
(Within 400m radius)

▪ Land area less 40% for public facilities, open space and streets	30.7	Net Hectares
▪ Households: [30.7 net ha x 15 average households per hectare] =	460	Households
▪ Population: [460 households x 2.6 persons per household] =	1,196	Population
▪ Job Demand: [1,196 population x 55% of population employed] =	657	Job demand
▪ Employment Area Demand: [657 job demand x 25m^2 (average employment area per person)] =	16,425	m^2 Employment Area

RIDERSHIP

(Within 400m radius)

- Daily LRT trips generated by residential uses:
  [460 Households x 10 trips per day x 10% mode split] = 460 Daily Residential LRT trips
- Daily LRT trips generated by employment uses:
  [16,425m^2 employment area x 16 trips per 100m^2 x 10% mode split] = 263 Daily Employment LRT trips
- Total Daily LRT trips:
  [460 residential LRT trips + 263 employment LRT trips] = 723 Total Daily LRT trips
- **Total annual LRT trips for 5 station areas:**
  [723 x 312 days* x 5 stations] = 1.1 Mil. Annual LRT Trips

FAREBOX REVENUE

(Within 400m radius)

- **Annual Farebox Revenue:**
  [1.1 million x $2 average trip cost] = $2.2 Mil. Annual Farebox Revenue

ECONOMIC STIMULUS FROM REDUCED AUTO USE

(Within 400m radius)

Fewer auto trips from transit availability

- Annual fuel cost per household: assuming 34,000km driven per year/
  per household at 8.5km/litre = [4,000 litres x $1.056 per litre] = $4,224 Annual Fuel Cost
- If 10% of annual household auto trips were switched to transit trips:
  [$4,224 x 10%] = $422 Annual Fuel Savings
- **Annual stimulus from fewer auto trips:**
  [$422 fuel savings x 460 households (400m)
  x a multiplier of 3] = $0.58 mil. savings per station x 5 stations = $2.9 Mil. Total Annual Stimulus

* Reflects 5 days (Mon-Fri) at 20% transit ridership and 2 days (Sat-Sun) at 10% ridership, or the equivalent of 6 days of 20% ridership. [6 days x 52 weeks in a year] = 312 days

TOD

MODEL ASSUMPTIONS

- LRT alignment and 5 stations are in place
- Average household occupancy is 2.0 persons per household within 400 metres of the station
- Average household occupancy is 2.6 persons per household between 400 and 800 metres of the station
- Daily household trips average 10 per days (5 trips to and from various destinations)
- TOD plans were developed requiring specific land uses and development densities within 400 metres of the station
- Residential densities average 125 units per hectare within the 400 metre radius
- Residential densities average 15 units per hectare between 400 and 800 metres of the station
- Retail uses, sufficient to serve the TOD population, are concentrated within 400 metres of each station
- Employment uses, sufficient to serve the TOD population, are concentrated within 400 metres of each station
- Average LRT trip is $2 per ticket
- Residential development located in a highly walkable and bikable environment within a 400 metre radius of the station —a 5 minute walk—results in 20% fewer auto trips annually (Stimulus A)
- Every dollar spent locally yields an 'economic multiplier' that enables additional cycles of spending in the community. To represent these additional cycles of spending, a multiplier of 3 has been applied to the economic stimulus calculations.
- Average auto trip length is shortened by 30% for all households within a 800 metre radius of the station due to the concentration of trip-generating uses (work, shopping, business) around the station (Stimulus B)
- 20% mode split

QUANTITIES FOR 1 STATION AREA

Within 400m radius

▪ Land area less 40% for public facilities, open space and streets	30.7	Net Hectares
▪ Households: [30.7 net ha x 125 average households per hectare] =	3,800	Households
▪ Population: [3,800 households x 2.0 persons per household] =	7,600	Population
▪ Job Demand: [7,600 population x 55% of population employed] =	4,180	Job demand
▪ Employment Area Demand: [4,180 job demand x 25m^2 (average employment area per person)]	104,500	m^2 Employment Area

Between 400m - 800m radius

▪ Households: [89.9 net ha x 15 average residential units per hectare] =	1,350	Households
▪ Population: [1,350 households x 2.6 persons per household] =	3,510	Population

RIDERSHIP

(Within 400m radius)

- Daily LRT trips generated by residential uses:
  [3,800 Households x 10 trips per day x 20% mode split] = 7,600 Daily Residential LRT trips
- Daily LRT trips generated by employment uses:
  [104,500m^2 employment area x 16 trips per 100m^2 x 20% mode split] = 3,344 Daily Employment LRT trips
- Total Daily LRT trips:
  [7,600 residential LRT trips + 3,344 employment LRT trips] = 10,944 Total Daily LRT trips
- **Total annual LRT trips for 5 station areas:**
  [10,944 x 312 days* x 5 stations] = 17.1 Mil. Annual LRT Trips

FAREBOX REVENUE

(Within 400m radius)

- **Annual Farebox Revenue:**
  [17.1 Million x $2 average trip cost] = $34.1 Mil. Annual Farebox Revenue

ECONOMIC STIMULUS FROM REDUCED AUTO USE

(Within 800m Radius)

A: Fewer auto trips from transit availability

- Annual fuel cost per household: assuming 34,000km driven per year/
  per household at 8.5km/litre = [4,000 litres x $1.056 per litre] = $4,224 Annual Fuel Cost
- If 20% of annual household auto trips were switched to transit trips:
  [$4,224 x 20%] = $845 Annual Fuel Savings
- Annual stimulus from fewer auto trips (Stimulus A):
  [$845 fuel savings x 3,800 households (400m)
  x a multiplier of 3] = $9.63 mil. *savings per station* x 5 stations = $48.2 Mil. Annual Stimulus A

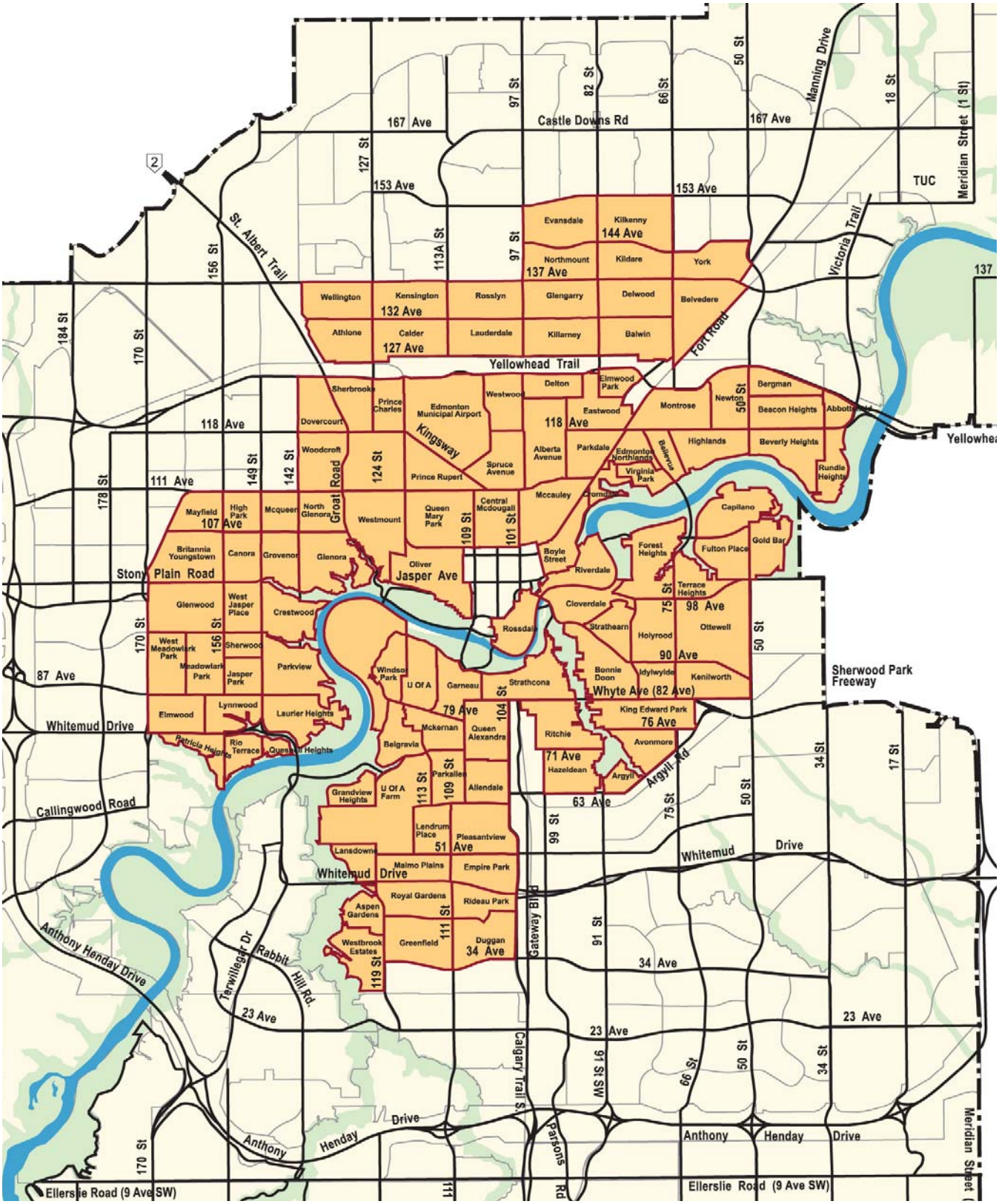
B: Shorter auto trips from retail/employment concentration at station

- All households in 5 station areas
  [3,800 + 1,350 households] = 5,150 households x 5 stations = 25,750 Total Households
- If 30% of annual household auto trips were shorter:
  [$4,224 fuel cost - $845 fuel savings] = $3,379 new fuel cost x 30% = $1,014 Annual Fuel Savings
- Annual stimulus from shorter auto trip (Stimulus B):
  [$1,014 fuel savings x 5,150 households ___
  x a multiplier of 3] = $15.66 mil. *savings per station* x 5 stations $78.3 Mil. Annual Stimulus B
- **Total Annual Stimulus**
  [$48.2 mil. (Stimulus A) + $78.3 mil. (Stimulus B)] $127 Mil Total Annual Stimulus

* Reflects 5 days (Mon-Fri) at 20% transit ridership and 2 days (Sat-Sun) at 10% ridership, or the equivalent of 6 days of 20% ridership. [6 days x 52 weeks in a year] = 312 days

APPENDIX 4—EDMONTON'S MATURE NEIGHBOURHOODS

Figure 117: Map of Edmonton's Mature Neighbourhoods



THE CITY OF Edmonton