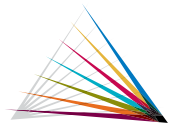




THE WAY WE MOVE

TRANSPORTATION MASTER PLAN
SEPTEMBER 2009





SUMMARY OF TMP DIRECTIONS

Transportation and land use integration

An integrated approach to planning and developing the transportation system and land uses supports the creation of an efficient, sustainable, compact and vibrant city that maximizes the effectiveness of its investment in transportation infrastructure.

Public transportation as a cornerstone

A comprehensive public transportation system supports a sustainable, livable city where more people use transit as a preferred transportation choice.

Encouragement of active transportation

A walkable, cycle-friendly city supports the creation of a healthy, barrier-free, age-friendly and safe city where active modes are a preferred transportation choice.

Manage the transportation system more effectively

A comprehensive strategic approach to roads balances the objectives of the transportation system by focusing roadway expansions to improve the efficiency of goods, services and transit movements while using transportation operation, supply and demand management strategies to manage roadway congestion.

Roadway improvements focus on efficient goods movement

An efficient network for goods and services movements incorporates integrated multimodal and regional approaches to support commercial transportation needs.

Regional interface

A comprehensive, coordinated and integrated transportation system supports regional mobility, accessibility and economic vitality.

Well-maintained and managed infrastructure

A holistic approach to infrastructure investments supports the fiscal sustainability of the transportation system by considering life-cycle costs, adhering to a service life based asset management program and providing a robust operational maintenance program to facilitate year round transportation.

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TRANSPORTATION MASTER PLAN
EXECUTIVE SUMMARY



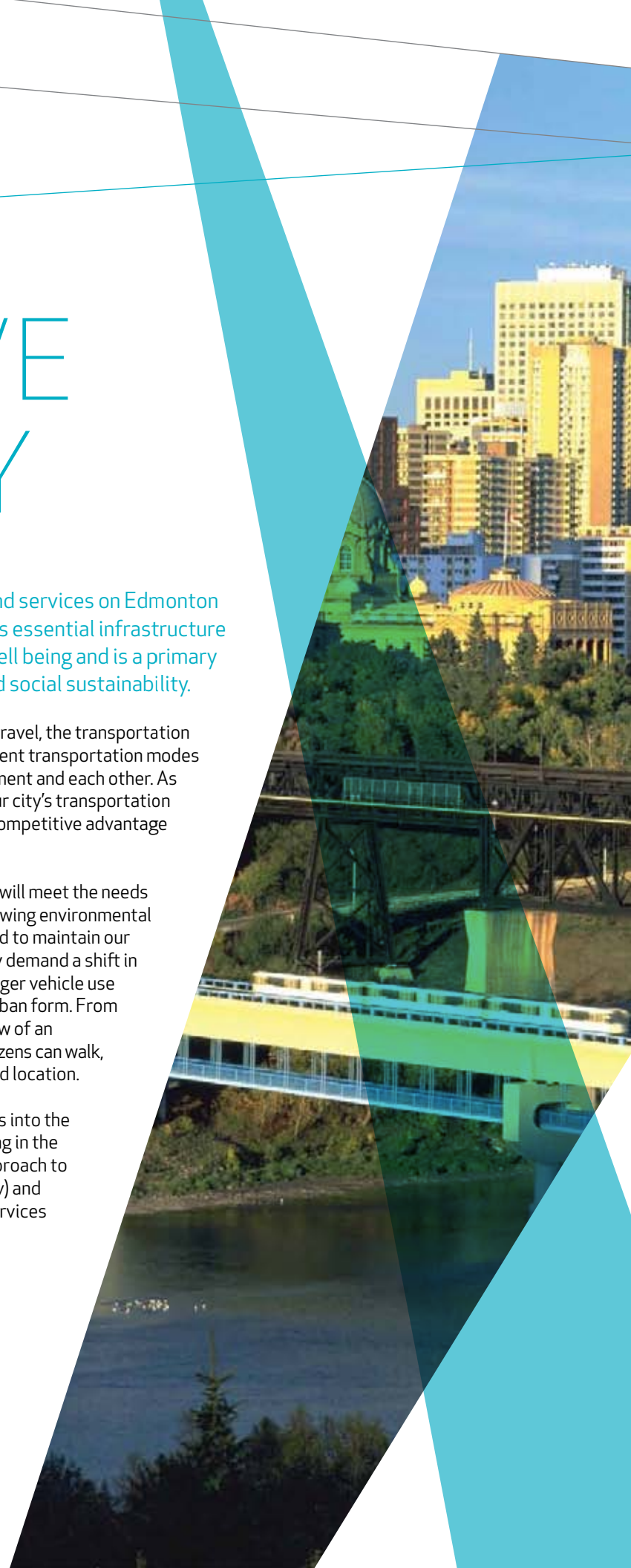
EXECUTIVE SUMMARY

Transportation is more than moving people, goods and services on Edmonton roads, rails, buses, sidewalks, and light rail transit. It is essential infrastructure that shapes our urban form, impacts our economic well being and is a primary determinant of our city's environmental, financial and social sustainability.

How easily we move through our city, the distances we must travel, the transportation choices we have and how readily we can move between different transportation modes profoundly affects our relationship with the city, the environment and each other. As the major urban centre of regional industrial development, our city's transportation system is a contributing factor to the economic vitality and competitive advantage of Edmonton and the Capital Region.

We are building a 21st century city, shaping an Edmonton that will meet the needs of our diverse and growing urban and regional population. Growing environmental concerns, acknowledgment of the ongoing investment needed to maintain our transportation infrastructure and the rapid growth of our city demand a shift in transportation priority setting. It is a shift from single passenger vehicle use to more public transit; from building outward to a compact urban form. From an auto oriented view of transportation to a more holistic view of an interconnected, multi-modal transportation system where citizens can walk, bike, bus and train efficiently and conveniently to their desired location.

In 2007, Edmontonians offered their experiences and insights into the kind of city they envisioned Edmonton to be by 2040, resulting in the City Vision. Edmontonians also offered their views on our approach to land use (The Municipal Development Plan, *The Way We Grow*) and on transportation and the movement of people, goods and services (The Transportation Master Plan, *The Way We Move*).



To achieve the City Vision, City Council has identified six 10-year Strategic Goals that are outlined in The City of Edmonton's 2009-2018 Strategic Plan, *The Way Ahead*: Preserve and Sustain Edmonton's Environment; Improve Edmonton's Livability; Transform Edmonton's Urban Form; Shift Edmonton's Transportation Mode; Ensure Edmonton's Financial Sustainability; and Diversify Edmonton's Economy. The Transportation Master Plan (TMP) is consistent with and supportive of these goals.

The Transportation Master Plan is guided by and intended to achieve the City Vision. It establishes the framework for how the City of Edmonton will address its future transportation needs and is aligned with the Municipal Development Plan, *The Way We Grow*, to acknowledge that land use and transportation are inextricably linked. The Transportation Master Plan is based on seven Transportation Strategic Goals that define a vision for the transportation system. Each of these goals embodies the four guiding principles (integration, sustainability, livability, innovation) of *The Way Ahead*. These will guide City policies and direction on how best to manage the transportation system to contribute to the City Vision. Together these goals contribute to creating the kind of safe, vibrant, economically robust, culturally active and environmentally sustainable city Edmontonians said they envision.

TRANSPORTATION STRATEGIC GOALS: (CHAPTER 2)

Transportation and Land Use Integration

The transportation system and land uses/urban design complement and support each other so that the use of transit and transportation infrastructure is optimized and supports best practices for land use.

Access and Mobility

The transportation system is interconnected and integrated to allow people and goods to move efficiently throughout the city and to provide reasonable access with a variety of modes for people across demographic, geographic, socio-economic and mobility spectrums.

Sustainability

Transportation decisions reflect an integrated approach to environmental, financial and social impacts thereby creating sustainable, livable communities that minimize the need for new infrastructure and increase quality of life.

Health and Safety

The transportation system supports healthy, active lifestyles and addresses user safety and security including access for emergency response services, contributing to Edmonton's livability.

Transportation Mode Shift

Public transportation and active transportation modes are the preferred choice for more people making it possible for the transportation system to move more people more efficiently in fewer vehicles.

Well-Maintained Infrastructure

The transportation system is planned and developed so that the city is able to keep it in a good state of repair and future growth is accommodated in a fiscally responsible and sustainable manner.

Economic Vitality

Efficient movement of goods, convenient mobility of the labour force and access to a vibrant city centre are features of the transportation system that enhances the economic vitality and competitive advantage of Edmonton and the Capital Region.

CURRENT AND FUTURE CONDITIONS (CHAPTER 3)

In 2009, Edmonton is home to approximately 750,000 people and by 2040 will grow by 400,000 people. Edmonton's 2005 Household Travel Survey showed that of the 2.5 million trips made each day, Edmontonians traveled by car (77%), walking (11%), public transportation (9%), and bicycle (1%). This is one of the highest car dependence rates in Canada.

Edmontonians are spending more time in their cars, driving longer distances and dealing with increasingly congested streets. Between 1994 and 2005, Edmonton's population increased 13%. At the same time, the total amount of kilometres traveled by automobile in the city increased 32%. This shows that the amount of automobile travel is increasing at a much faster rate than the population. The result is increased roadway congestion that impedes the efficient movement of people, goods and emergency response services.

This car dependence contributes to a cycle of increased kilometres traveled, increased road congestion and the perceived need to build more roadways which will require more taxpayer dollars for operation and maintenance.

This is a fiscally and environmentally unsustainable cycle. In addition, there are major health risks associated with long trip distances and automobile dependence such as physical inactivity, air pollution, motor vehicle collisions and mental health effects.

TRANSPORTATION AND LAND USE INTEGRATION (CHAPTER 4)

The City will integrate land use planning and transportation decisions to create a compact and efficient urban form.

Transportation provides access to land, thereby affecting its desirability and value, while the mix and intensity of land uses results in activities that generate demands on the transportation system. Building communities around effective transit service will decrease the need for other public infrastructure investment throughout the region, and provide viable alternative transportation modes that lower Edmonton's carbon and ecological footprint and lessen demand on energy and natural resources.

Focusing industrial developments in close proximity to goods and services movement corridors is efficient, adds to the economic vitality of the city and Capital Region and reduces goods and services movement traffic through residential areas.





PUBLIC TRANSPORTATION (CHAPTER 5)

Developing and expanding the existing public transportation system while capitalizing on new opportunities for public transportation within the greater Edmonton area are cornerstones of the Transportation Master Plan. To make public transportation the preferred choice of more people, Edmonton must make a large series of improvements to the transit system as well as to its physical, social and economic context. A comprehensive public transportation system made up of a variety of service strategies, including premium transit, bus service and disabled adult transit service (DATS) is a key to achieve the City Vision and Strategic Goals.

To achieve this, the City will:

- 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.
- Pursue implementation of an expanded, city-wide premium transit network which will provide faster, more reliable service with direct connections to major destinations.
- Develop an efficient, effective, accessible and integrated bus, premium bus and LRT network to serve Edmonton with connections to the Capital Region. The network will include services for persons with mobility challenges.
- Use technology such as transit priority, passenger information systems and ITS to improve the reliability, efficiency and passenger information systems to make transit a more competitive mode of travel.

ACTIVE TRANSPORTATION (CHAPTER 6)

Active transportation is any mode of transportation by which people use their own energy to power their motion such as biking or walking. Some of the benefits of active modes of transportation are that it builds health and exercise into one's daily routine, helps to create a strong sense of community, and reduces the greenhouse gas emissions related to transportation by reducing vehicle volumes and maximizing the effective use of existing infrastructure.

To encourage more active transportation, the City will create a more walkable environment, a cycle-friendly city and an integrated network of multi-use trail facilities.

Active transportation should be viewed as being year round and available for all citizens; therefore the city must have a robust maintenance policy for all seasons.

ROADS (CHAPTER 7)

Roads are the foundation of Edmonton's transportation system. Roads significantly affect the economic vitality and competitiveness of Edmonton and the Capital Region, as they facilitate the movement of goods and services, emergency response services, and people using public transit, vehicles, taxis, bicycles and active modes. As Edmonton evolves from a mid-size prairie city to a large metropolitan area, it is inevitable that congestion levels will increase, particularly during peak periods. Physical, financial and community constraints in many areas make it unfeasible or even undesirable to build or expand roads to alleviate congestion. As such, the City of Edmonton will need to place greater emphasis on strategies to optimize the use of the existing road system.

These strategies include:

- Land use development strategies
- Promoting use of transit and active transportation modes
- Managing existing roadways more efficiently
- Transportation Demand Management (TDM)
- Selectively adding more roadway capacity

The City will attempt to maintain or improve the level of service for transit and goods and services movement by giving priority to roadway projects that enhance these movements. Adding roadway capacity to serve commuter traffic will not be a priority for major road projects. The focus of improvements for commuter traffic will be on optimizing the existing roadway operations.

GOODS AND SERVICES MOVEMENT (CHAPTER 8)

The Capital Region, including Edmonton, is a major manufacturing, logistics and distribution centre. It is essential to the economy that commercial transportation is able to move freely throughout the Region. Safe, efficient and effective movement of people, goods and services is essential to supporting and fostering the economic vitality and competitive advantage of Edmonton and the Region. An efficient system is cost effective in terms of time, energy consumption and infrastructure needs.

Key corridors for the movement of goods and services are:

- Outer Ring Road – Anthony Henday Drive
- Inner Ring Road – Consists of Yellowhead Trail, 170 Street, 75 St/Wayne Gretzky Drive, Whitemud Drive
- Highway Connectors – Yellowhead Trail, Whitemud Drive, Calgary Trail, and others

In addition to these corridors, rail and air transport are important components of the regional transportation network. The City of Edmonton will work with other jurisdictions to ensure that Edmonton has a safe and efficient goods movement network that connects well with other transportation modes and facilities.

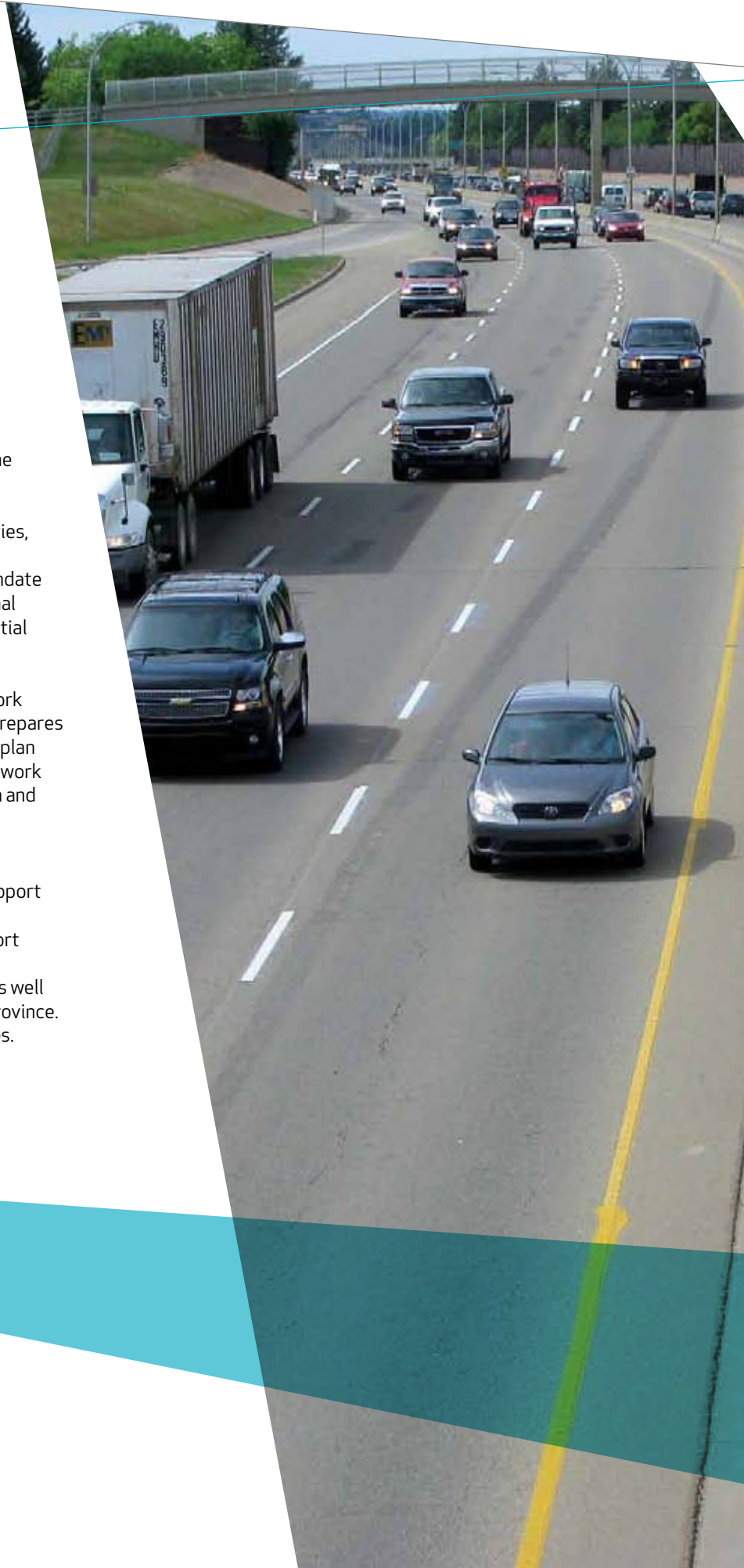


REGIONAL INTERFACE (CHAPTER 9)

As Alberta's capital city and the major urban centre within the Capital Region, Edmonton has become the focus of complex issues that demand a regional perspective. The Capital Region Board, made up of Edmonton and twenty-four surrounding municipalities, is a decision making body that was established by Provincial legislation in April 2008. The Board's mandate is to create a comprehensive plan to manage regional growth, the Capital Region Growth Plan, with the initial phase having been completed in June 2009.

The City, as part of the Capital Region Board, will work constructively with the Capital Region Board as it prepares the Capital Region Growth Plan and conform to the plan once it is formally adopted. In addition, the City will work with the Capital Region Board to cooperatively plan and implement system improvements such as:

- Region-wide system of inter-municipal transit
- Region-wide land use planning principles to support compact growth
- Inter-modal facilities and connections to support rail and air transportation
- Roads of regional significance within the city as well as highway facilities with cooperation of the Province.
- Regional multi-use facilities and TDM initiatives.



ASSET MANAGEMENT AND MAINTENANCE (CHAPTER 10)

City-owned infrastructure, valued in the billions of dollars, include significant transportation assets that are in continuous need of maintenance, repair, rehabilitation or replacement. With limited budgets and increasing demands on the transportation network, the City is challenged to manage its assets in a way that minimizes total life-cycle costs yet sustains expected levels of service and safety. The City will use best asset management practices to preserve infrastructure and minimize total life cycle costs.

Operational maintenance of the transportation system such as cleaning and snow plowing are critical to maintaining system safety and accessibility, particularly for active modes. The City will have robust maintenance practices to facilitate year round transportation.

IMPLEMENTATION (CHAPTER 11)

The Transportation Master Plan and its policies are strategic in nature. An Implementation Plan that outlines plans, program and actions will be developed to bring the policies into reality. The Implementation Plan, to be updated every three years, will outline the specific projects, programs and initiatives that will be carried out to achieve the Transportation Strategic Goals.

Progress measures will be developed and reported yearly to create an effective monitoring framework for the TMP that closely considers the Transportation Strategic Goals and Objectives. Emphasis will be placed on progress measures that track system-wide, long-term changes and that are easily understood by the public.

1.0 INTRODUCTION

1.1 What is *The Way We Move*?

The Way We Move is the Transportation Master Plan (TMP) that establishes a framework for how the City of Edmonton will address its future transportation needs. Edmonton is the fifth largest of Canada's municipalities with a population of approximately 750,000 people in 2009. It is at the heart of a thriving region which currently includes over one million people in the Census Metropolitan Area (CMA).

Over the next 30 years, the City of Edmonton's population is expected to exceed one million people, while the CMA will exceed 1.6 million people. This growth will bring about enormous levels of change and challenge as the City delivers services to many new people, businesses and industries.

The TMP reflects citizens' values and directs appropriate decision making while considering the long term and often indirect impacts of those decisions. Its Strategic Goals, Objectives and Actions give direction for the management of the transportation system, and provide a basis for making strategic planning and budgetary decisions.

1.2 Context

Provincial

The Province of Alberta's *City Transportation Act* requires the City of Edmonton to prepare a comprehensive report (TMP) for an integrated transportation system to serve the city's needs.

The Capital Region Plan

On April 15, 2008, the Alberta Government created the Capital Region Board and gave it the mandate to prepare a comprehensive Regional Growth Plan. The board consists of 25 participating municipalities of the Capital Region. On April 2, 2009, the Capital Region Board submitted the *Capital Region Growth Plan: Growing Forward* to the Alberta Government. The Growth Plan includes four components: a Land Use Plan, an Integrated Transit Network Plan, a Geographic Information Services (GIS) Plan and a Housing Plan.

The plan contains 22 detailed policies that fall under the following six principles. *The Way We Move* is consistent with these principles and policies.

- I: Protect the Environment and Resources
- II: Minimize Regional Footprint
- III: Strengthen Communities
- IV: Increase Transportation Choice
- V: Ensure Efficient Provision of Services
- VI: Support Regional Economic Development





1.3 Achieving the City Vision

This plan is guided by and meant to achieve the City Vision, which is a creative description of Edmonton's future. The vision guides our decisions, helps us set direction and encourages us to align our priorities as we work to make Edmonton the city we want it to become in 2040. The City Vision is included in Appendix 1.

City of Edmonton 10-Year Strategic Plan

The City of Edmonton Strategic Plan gives direction for the next ten years towards achieving the City Vision. It provides a focus to the City's efforts to deliver the greatest value of services and infrastructure that are most important to Edmontonians, while managing the opportunities and challenges of our rapidly growing and changing city.

Four principles underpin the development and implementation of the City of Edmonton Strategic Plan (see Appendix 1 for elaboration):

- Integration
- Sustainability
- Livability
- Innovation

To further focus the City's efforts on achieving the vision, Council identified six 10-year Strategic Goals. These goals will direct long term planning for the City and help set priorities for the delivery and improvement of services, programs and infrastructure.

The 10-year Strategic Goals are (See Appendix 1 for elaboration):

- Preserve and Sustain Edmonton's Environment
- Improve Edmonton's Livability
- Transform Edmonton's Urban Form
- Shift Edmonton's Transportation Modes
- Ensure Edmonton's Financial Sustainability
- Diversify Edmonton's Economy

1.4 Aligning with Edmonton's Other Strategic Plans

The City of Edmonton is currently aligning its strategic planning processes to ensure an integrated and holistic approach toward city building over the next three decades (See Appendix 1 for more details). The Transportation Master Plan aligns with:

- *The Way We Grow: The Municipal Development Plan* - This plan establishes Council's policy direction for future land development and redevelopment decisions. It parallels the 30 year timeframe of the TMP.
- *The Way We Green: Edmonton's Environment Plan* - An update of the EcoVision Edmonton Plan which outlines Edmonton's vision for an environmentally sustainable city. It includes the Environmental Strategic Plan and the Natural Connections Strategic Plan.
- *The Way We Live: Edmonton's People Plan* - Guides future sustainable investment in people services and programs that contribute to Edmontonians' health, safety and social well-being.
- *The Way We Prosper: Edmonton's Plan to Diversify and Maximize the Economy* - To be developed
- *The Way We Finance: Edmonton's Financial Sustainability Plan* - To be developed
- *Infrastructure Strategy* - A comprehensive and sustainable long term financial strategy that allows the City of Edmonton to address its increasing infrastructure gap. The plan will identify the infrastructure demand for the next 30 years and estimate the associated costs including renewal, asset operation, maintenance and service delivery.

The Transportation Master Plan and the Municipal Development Plan have been developed concurrently in acknowledgment that land use and transportation are inextricably linked. The preparation of both statutory plans must be approached in an integrated manner and be informed by the Infrastructure Strategy to successfully achieve the City's goals.

1.5 How Was *The Way We Move* Prepared?

This document is an update and replaces the 1999 Transportation Master Plan; it responds to the rapid growth and changes the city has experienced over the last decade. It has been developed with a 30 year view into the future to a horizon year of 2040. The TMP is informed by:

- The comments, experiences and insights expressed by Edmontonians in public focus groups and stakeholder workshops.
- A review of best practices from other municipal jurisdictions.
- An evaluation of best practices for use in the local context.

This plan has its roots in the City of Edmonton Vision and Strategic Plan. The Transportation Strategic Goals are designed to achieve the City Vision. The TMP is a strategic document that conveys intent and direction. Individual projects, cost estimates, schedules and other key and specific details will be outlined in a separate Implementation Plan.

1.6 Next Steps

After the TMP is approved by Council, a TMP Implementation Plan will be developed and updated on a three year cycle. The Implementation Plan will outline the specific projects and actions to achieve the Strategic Goals. In addition, progress measures that determine achievement towards the TMP Strategic Goals will be reported annually. For more information on implementation and progress measures please see Chapter 11 - Implementation.



2.0 STRATEGIC GOALS

The TMP Transportation Strategic Goals were specifically developed to express the intent for the future of Edmonton's transportation system. These seven goals express the holistic, city-wide, long term vision for the future of the transportation system. They support and align with the City Vision and the City of Edmonton's 10-year Strategic Goals.

The seven Transportation Strategic Goals are:

- Transportation and Land Use Integration
- Access and Mobility
- Transportation Mode Shift
- Sustainability
- Health and Safety
- Well-Maintained Infrastructure
- Economic Vitality

The Transportation Strategic Goals were developed in coordination with *The Way We Grow's* Municipal Development Strategic Goals to ensure the goals of the TMP and MDP were mutually supportive toward achievement of the City Vision.

The eight Municipal Development Strategic Goals are:

- Sustainable Urban Form
- Integrated Land Use and Transportation
- Complete, Healthy and Livable Communities
- Urban Design
- Supporting Prosperity
- Natural Environment
- Working within our Region
- Managing Land and Resources

The Transportation Strategic Goals have been applied to each mode of transportation, as outlined in Chapters 4 through 8, to create Strategic Objectives that the City will use to direct and enhance current and future policies.

The Transportation Master Plan and Municipal Development Plan's Strategic Objectives will guide and shape the transportation system and land use patterns to achieve the sustainable, livable city that Edmontonians envision.

Each Transportation Strategic Goal is described in the remainder of this chapter.

Strategic Goal: Transportation and Land Use Integration

The transportation system and land use / urban design complement and support each other so that the use of transit and transportation infrastructure is optimized and supports best practices for land use.

Transportation and land use are inextricably linked and impact Edmonton's environmental, financial and social sustainability. New approaches to land use planning and development will allow people to live closer to where they want to go and closer to the high quality transit service they need to get there. Building communities around major transit infrastructure helps encourage transit use, develops a compact city, maximizes public infrastructure return on investment and minimizes Edmonton's carbon and ecological footprint.

This goal encompasses the following ideas:

- Designing complete communities - where citizens can work, live and access services, entertainment and recreation - reduces the need for automobile travel.
- Ensuring regional coordination of public transportation contributes to labour force mobility.
- Focusing business and industrial developments in close proximity to corridors that move goods and services is efficient, adds to the economic vitality of Edmonton and Capital Region and reduces goods movement traffic through residential areas.





Strategic Goal: Access and Mobility

The transportation system is interconnected and integrated to allow people and goods to move efficiently throughout the city and to provide reasonable access with a variety of modes for people across demographic, geographic, socio-economic and mobility spectrums.

Edmontonians' ability to move efficiently through the city helps define the city's livability. The economic prospects of both Edmonton and the Capital Region are affected by the efficient movement of people, goods and services.

Edmonton's continuing role as a distribution and logistics centre is contingent upon an accessible and highly mobile transportation system. It is essential to the economy that commercial transportation vehicles are able to move freely throughout the Capital Region.

An accessible transportation system addresses the transportation needs of a diverse urban population regardless of mobility challenges or vehicle ownership. A twelve year old who needs to travel alone, a person living with physical or cognitive challenges, or a senior citizen should feel confident that their city's transportation system meets their needs. The ability of the growing senior population to age in place is dependent upon a transportation system that offers them a full range of options that are connected and integrated with each other.

Creating more livable complete communities where jobs, retail, medical, recreational, cultural and entertainment services are integrated within residential areas will help minimize the need to travel greater distances, increase the viability of all transportation modes and will help reduce overall vehicle traffic volumes.

Strategic Goal: Transportation Mode Shift

Public transportation and active transportation are the preferred choice for more people making it possible for the transportation system to move more people more efficiently in fewer vehicles.

Encouraging fewer single occupant vehicle trips reduces the pressure on the roadway system and reduces the need for increased roadway investment. Moving more people in proportionately fewer vehicles adds to overall transportation system efficiency, minimizes environmental impacts and maximizes the effectiveness of financial investments in the transportation system. It also increases the efficiency of goods movement.

Mode shift will be incremental. For example, more families could choose to own one automobile instead of two because they will be confident that other transportation modes will enable them to move conveniently throughout the city. Shifts in transportation modes will yield a significant benefit to personal and urban health and to environmental sustainability.





Strategic Goal: Sustainability

Transportation decisions reflect an integrated approach to environmental, financial, and social impacts thereby creating sustainable, livable communities that minimize the need for new infrastructure and increase residents' quality of life.

The way a city grows and how its population moves impacts its future livability and its environmental, financial and social sustainability. The most effective way to minimize the transportation system's environmental impact is to reduce the scope and scale of that system so it is easier to make sustainable transportation mode choices. How a city designs its transportation facilities, how the transportation system and land uses are integrated and the way people choose to travel affects a city's air, water, and land quality and impacts the natural environment.

Capital construction is the beginning of an ongoing financial commitment to operate and maintain a transportation system. A compact city requires a smaller and less costly transportation system. Integrating land uses and transit planning maximizes the effectiveness of taxpayer investment in infrastructure.

Completing and servicing communities in succession rather than in parallel is a more efficient method of providing city infrastructure and services. Promoting the reuse and redevelopment of underutilized facilities that already exist will rejuvenate our neighbourhoods and help to optimize use of infrastructure, including investments in the transportation system.

Creating livable, complete communities where people of all ages and abilities have access to social, educational, recreational, employment and medical opportunities reduces the need to travel outside the community and adds to the social sustainability of individual neighbourhoods and the city as a whole.

Strategic Goal: Health and Safety

The transportation system supports healthy, active lifestyles, and addresses user safety and security including access for emergency response services, contributing to Edmonton's livability.

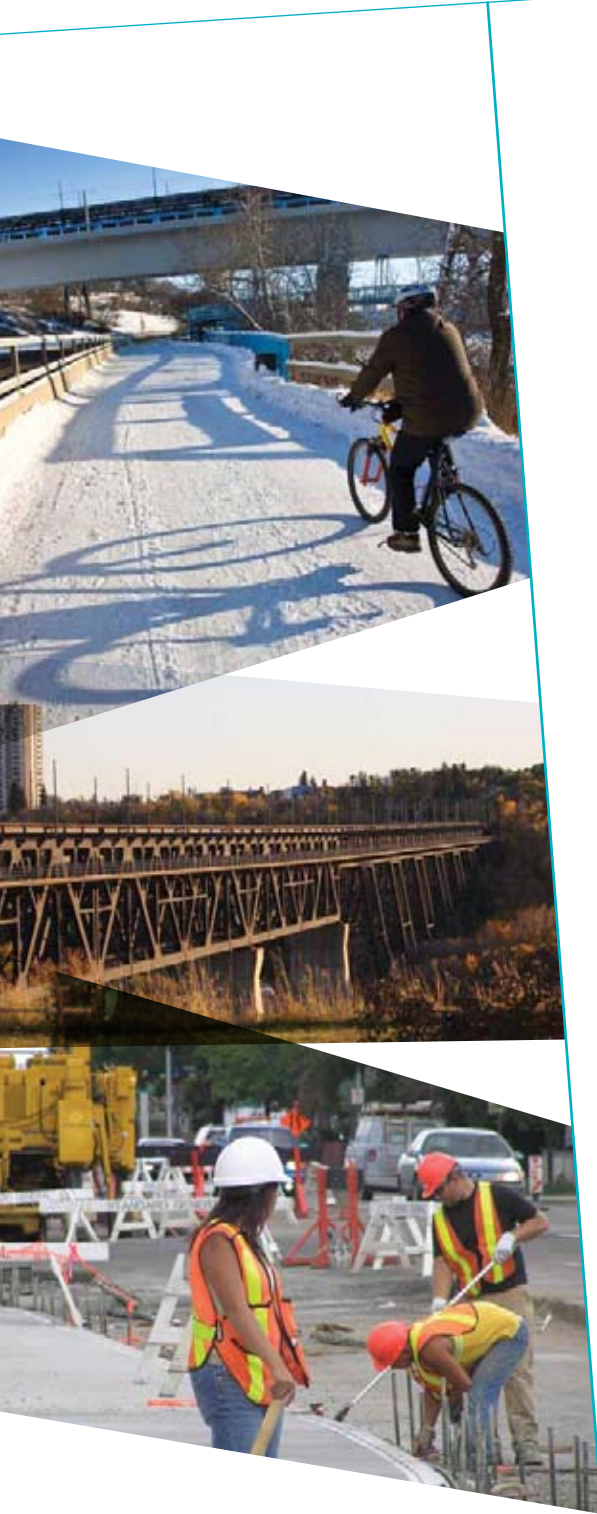
Community design, access to transportation opportunities and a transportation system that enables effective emergency response services affects individual, community and environmental health. Providing opportunities to safely incorporate physical exercise into daily activities in all four seasons contributes to improved livability and environmental sustainability.

Creating a city conducive to active transportation contributes to a strong sense of community. Increasing density and creating human scale, walkable communities increases citizen security by adding more eyes on the street. Walkable communities also appeal to people from a broad range of ages and abilities, thereby enhancing social health.

Over the past several decades the number of children who walk to school has declined significantly. Creating and keeping more walkable, complete communities will encourage healthy, active lifestyles for future generations.

Edmonton's transportation system is one of its largest assets. The transportation system is a public amenity, and when it is designed to promote the movement of people rather than just vehicles, our transportation system can add to the enjoyment of urban living and have a positive impact on health and safety.





Strategic Goal: Well-Maintained Infrastructure

The transportation system is planned and developed so that the city is able to keep it in a good state of repair, and future growth is accommodated in a fiscally responsible and sustainable manner.

A transportation system that is well-maintained in all seasons promotes economic vitality and a positive city image. Maintenance of our transportation system means keeping buses, roads, sidewalks and public spaces in good repair, clean and free from litter. This adds to Edmonton's ability to compete globally for people, investment and visitors.

The state of a city's transportation system also impacts the safety and mobility of its citizens. Sidewalks that are kept in good condition throughout all seasons greatly enhance the walkability of a city. Given the aging and diverse population, the need to ensure well-maintained sidewalks and curb ramps is imperative for a continued quality of life and safety.

Planning a transportation network with life cycle costing in mind will help meet citizen expectations for a well-maintained system now and into the future. Maintaining the current inventory of infrastructure is a primary focus and must be considered before adding new facilities; the future vitality and quality of life of our existing neighbourhoods depends upon it. Strategically managing urban growth will minimize the need for the addition of new infrastructure with its associated maintenance and operating costs, and minimizes the city's carbon and ecological footprint.

Strategic Goal: Economic Vitality

Efficient movement of goods, convenient mobility of the labour force and access to a vibrant city centre are features of the transportation system that enhances the economic vitality and competitive advantage of Edmonton and the Capital Region.

Effective and efficient transportation systems are essential to the economic vitality of Edmonton and the Capital Region. Businesses must attract employees to the city and employees must be able to efficiently and affordably travel to their workplaces. Businesses are dependent on the efficient movement of goods by rail, truck and/or air transport in a globally competitive environment. Service sector businesses also need efficient transportation so they can perform services for their customers and/or have their customers come to them. Efficient and effective transportation requires us to be leaders in collaborating with other interests in our Region.

Downtown is the heart of any great city, and is a major contributor to a city's economic vitality. It is the showpiece, the magnet - it defines the city's image. Supporting a robust transit system with a Downtown hub and efficient access from the Edmonton International Airport to the city's Downtown are essential to the ongoing success of the urban core, the city as a whole and the Capital Region.



3.0 CURRENT AND FUTURE CONDITIONS

3.1 Current Conditions

Current Transportation System

The City of Edmonton is home to approximately 750,000 people and the Capital Region as a whole includes just over 1,000,000 people (2009). There are presently about 425,000 jobs in Edmonton, with 100,000 more in the Capital Region. These people and jobs generate travel throughout the Edmonton area.

Edmonton is served by an extensive multi-modal transportation system that includes:

- An active transportation system for walking and cycling (sidewalks and multi-use trails)
- A public transportation system (Edmonton Transit System - buses, LRT, and Disabled Adult Transit Service (DATS))
- A hierarchical road system of arterial, collector and local roads
- A railway system
- Two airports (Edmonton City Centre and Edmonton International)

The City of Edmonton owns, operates and maintains the active transportation system, the public transportation system and the majority of the road system. The Province of Alberta has responsibility for key strategic highways including Anthony Henday Drive. The rail and airport systems are operated by private enterprises (Canadian National Railways, Canadian Pacific Railways and Edmonton Airports).

Current Transportation Demand

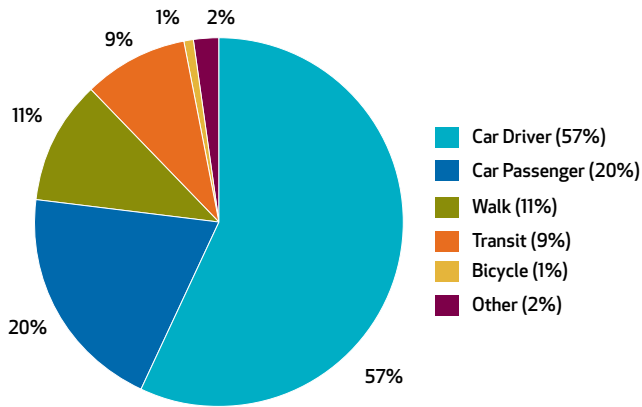
Transportation planning for the City of Edmonton and the Capital Region requires a thorough understanding of:

- How, why, when and where people travel. (Figures 3.1, 3.2, 3.3, 3.4)
- Goods and commercial vehicle movements and how these are generated to support the economic activity of the city and Capital Region. (Figure 3.5)

Edmonton residents make around 2.5 million trips on a typical fall weekday (an average person trip rate of 3.6 trips per day). Of these trips, 57% are made as a car driver, with the remaining trips being made by car passengers (20%), walking (11%), transit (9%) and cycling (1%) (Figure 3.1). Thirty-nine percent of weekday trips are made to commute to work or school (Figure 3.2). Trips occurring during the peak periods (7-9am and 4-6pm) represent over a third of all daily trips made, with the remaining trips spread throughout the day (Figure 3.3). The peak periods are important as there are a very high number of trips in a short period of time which dictate road capacity. However, the design of the transportation system, including transit service, also has to consider off peak trips, because the majority of trips occur in this time frame. As illustrated by Figure 3.4, 41% of all trips are made from Established Neighbourhoods to Established Neighbourhoods while 33% of trips are made between Established and Suburban Neighbourhoods.

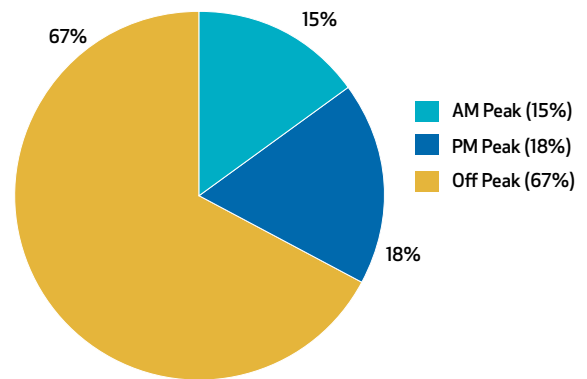
The *Edmonton Region Commodity Flow Survey* (2002) collected information on all goods and service vehicle movements generated by city and region businesses. Figure 3.5 shows the major movements of commercial vehicles between industrial areas within the city.

Figure 3.1 - How people travel



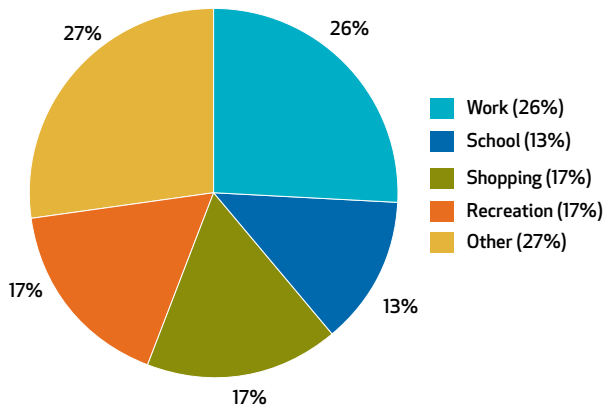
Source: 2005 Edmonton Household Travel Survey, Daily Mode of Travel

Figure 3.3 - When people travel



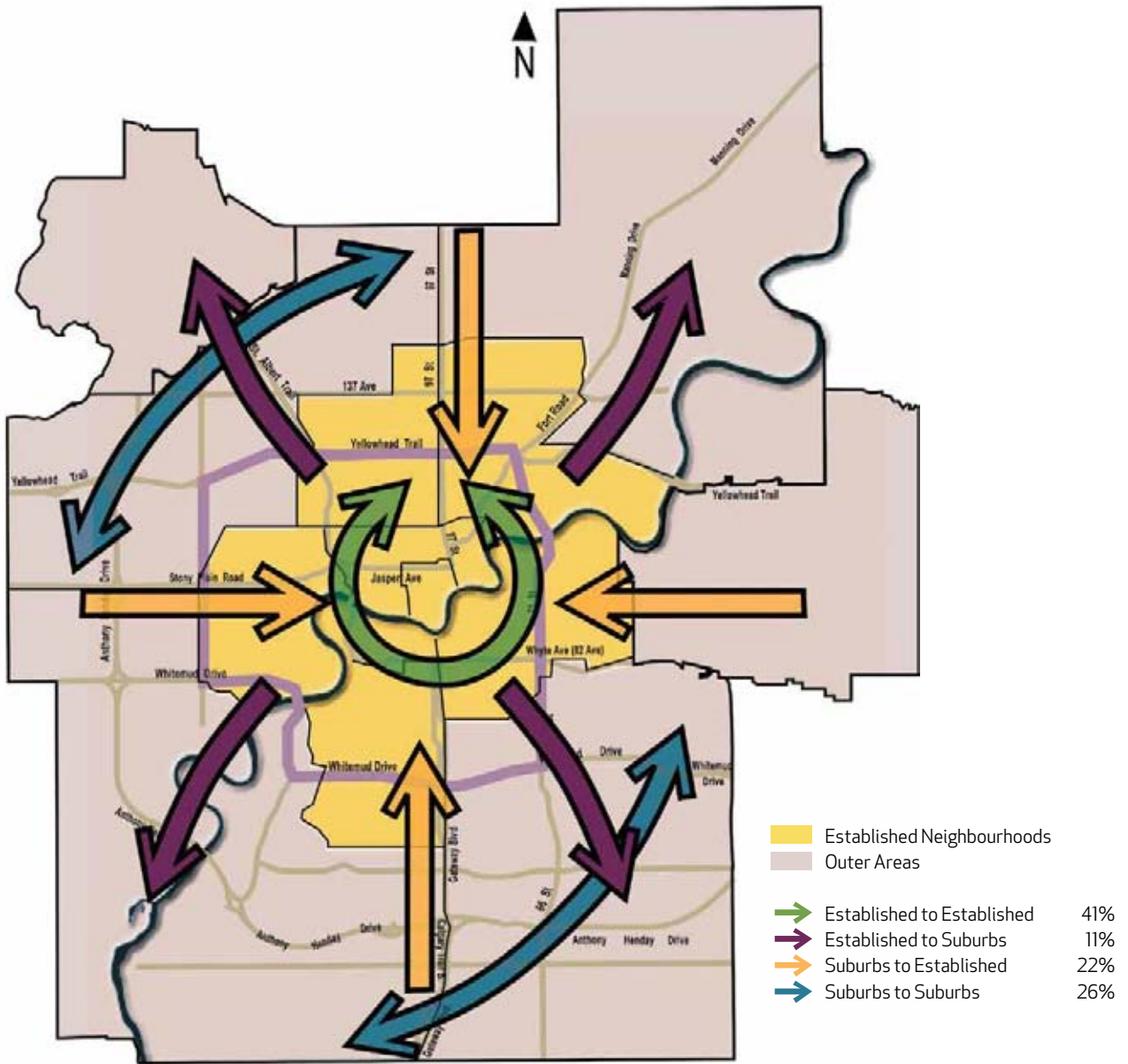
Source: 2005 Edmonton Household Travel Survey, Time of Travel
The AM peak period is from 7-9 am and the PM peak period is from 4-6 pm.

Figure 3.2 - Why people travel



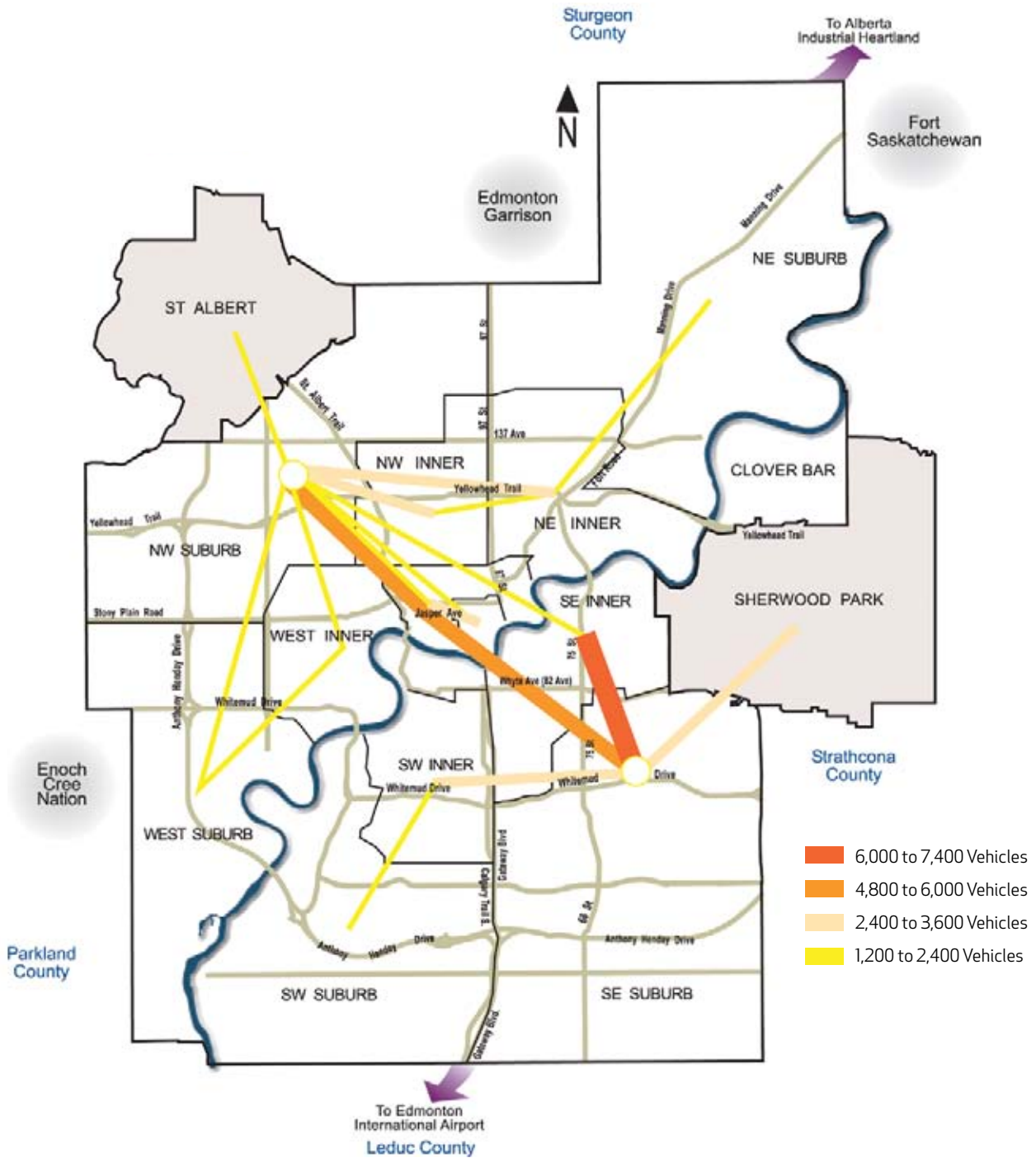
Source: 2005 Edmonton Household Travel Survey, Daily Trip Purpose From Home

Figure 3.4 - Where people travel (Trip Destinations)



Source: 2005 Edmonton Household Travel Survey
 Note: These represent daily trips from home for all purposes by all modes.
 Established neighborhoods are those built before 1970.
 52% of the population lives in the established Neighborhoods (2005).
 Established neighbourhoods are equivalent to mature neighbourhoods in *The Way We Grow*.

Figure 3.5 - 2002 Daily Good and Services Vehicle Trips within Edmonton



Current Environmental Trends

Climate Change

Climate change is one of the most pressing matters in the world today. Some of the key conclusions of the Intergovernmental Panel on Climate Change Report *Climate Change* (2007) were that:

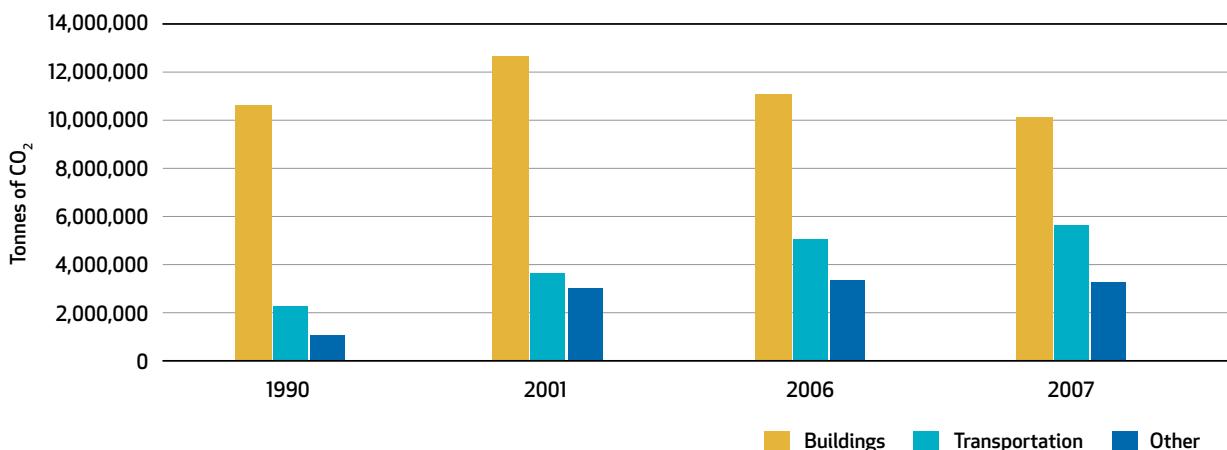
- Most of the observed increase in globally-averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations; and
- Continued GHG emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century.

Greenhouse Gas (GHG) emissions consists of those gases that, once released into the atmosphere, absorb and emit thermal infrared radiation. These include water vapour, carbon dioxide, methane, nitrous oxide, ozone, hydrofluorocarbons, perfluorinated carbons, and halogenated fluorocarbons. Anthropogenic greenhouse gases are those that can be attributed directly or indirectly to human activity.

According to the City of Edmonton’s Corporate Environmental Scan, Edmonton is experiencing climate change along with the rest of the world. Edmonton’s anthropogenic GHG emissions have increased from 13.9 million tonnes in 1990 to 19.0 million tonnes in 2007, which equates to an increase of approximately 36%. This increase is greater than the rate of population growth. In addition, the proportion of emissions from transportation sources has been increasing since 1990, and in 2007 the transportation sector accounted for 30% of Edmonton’s anthropogenic GHG emissions, as shown in Figure 3.6.

Ambient air quality depends on the balance between the rate that pollutants are emitted into the atmosphere, and the ability of the atmosphere to disperse them. It is a significant factor in respiratory health. The Air Quality Index is compiled by Alberta Environment and primarily considers non-greenhouse gas emissions, such as levels of particulate matter (10 and 2.5 µm), carbon monoxide, nitric oxide, nitrogen dioxide and ozone. Edmonton’s air quality has been good during the last ten years. In addition, the air quality impacts of the transportation sector in Alberta have been reduced since 1990. This is primarily due to widespread application of vehicle emission reduction technologies and advances in gasoline and diesel fuel technologies.

Figure 3.6 Anthropogenic Greenhouse Gas (GHG) Emissions for Edmonton



Source: EcoVision Annual Report 2008

3.2 Future Conditions

Future Transportation Demand

Future transportation demand will depend upon:

- Demographic and geographic factors, including population size and age, as well as where residents live, work and play (Figure 3.7);
- Economic and employment growth (Figure 3.8);
- Transportation network supply and operating conditions (Figure 3.9);
- Transportation policy, including cost of travel; and
- Volatile fuel prices

The Strategic Goals, Strategic Objectives and Strategic Actions of *The Way We Move* were developed to consider these factors.

Demographic Factors

By 2040, the City of Edmonton's population is expected to have grown by over 50% to approximately 1,150,000 people. The Capital Regional population as a whole is expected to have grown by about 60% to approximately 1.6 million people. As illustrated in Figure 3.7, significant population growth is projected in the 65+ age group. In contrast, less population growth is projected for children and youth.

In terms of percentages, children aged 0-14 years made up about one quarter (23%) of the population in 1987. This percentage had decreased to 19% by 2007 and is forecasted to decrease to 15% by 2040.

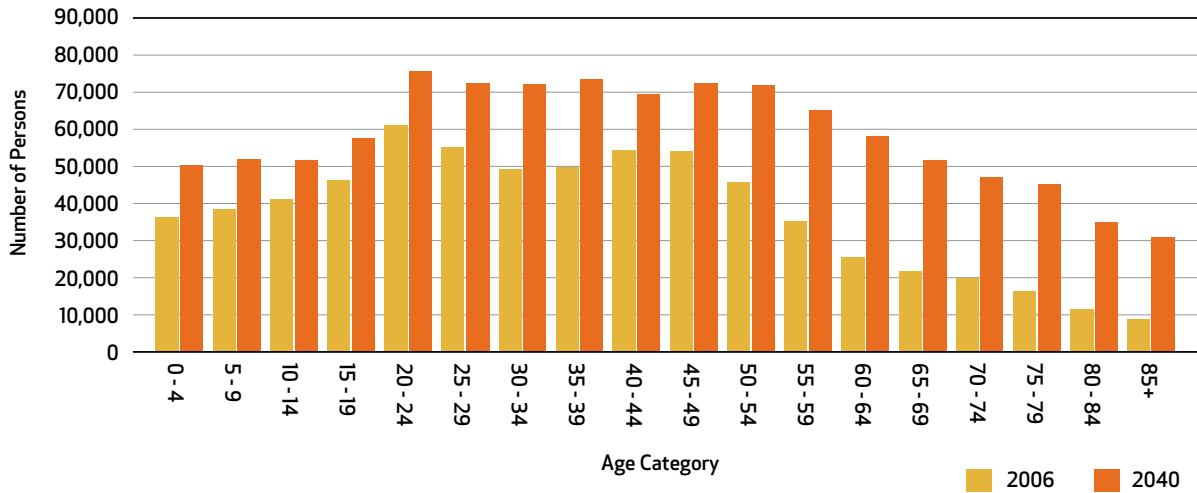
Currently, seniors aged 65 years and older make up 12% of the population, and are projected to represent 20% of the population by 2040. Specifically, the population of seniors 75 years and older has increased by 122% over the last 20 years. It is projected to further increase by another 80% by 2040.

This demographic shift will have a significant impact on future travel patterns and associated transportation system requirements. As seniors make up an increasing proportion of the population, the transportation system will need to respond to their changing needs. Indications are that many seniors will continue to drive until they are medically unable to do so. As a result, the proportion of seniors who drive will increase. However, those seniors who do not drive or choose not to drive will require a range of public and private transportation services. To allow seniors to age in place, that is to remain in their home or neighbourhood as long as they are interested in doing so, there are a number of key planning principles that should be implemented according to the report *Aging in Place: Promising Practices for Municipalities* (2009). Some of these include:

- Diversify the housing stock available to seniors,
- Promote mixed use development,
- Locate seniors housing close to facilities and services,
- Provide for public transit that recognizes the needs of seniors, and
- Encourage walkability by providing a pedestrian friendly walking environment.



Figure 3.7 - Edmonton Population by Age Profile



The financial sustainability of the transportation system will also be further stretched as a larger proportion of the population retire from working life, since income taxes paid to the provincial and federal governments are a major source of transportation funding.

Economic and Employment Growth

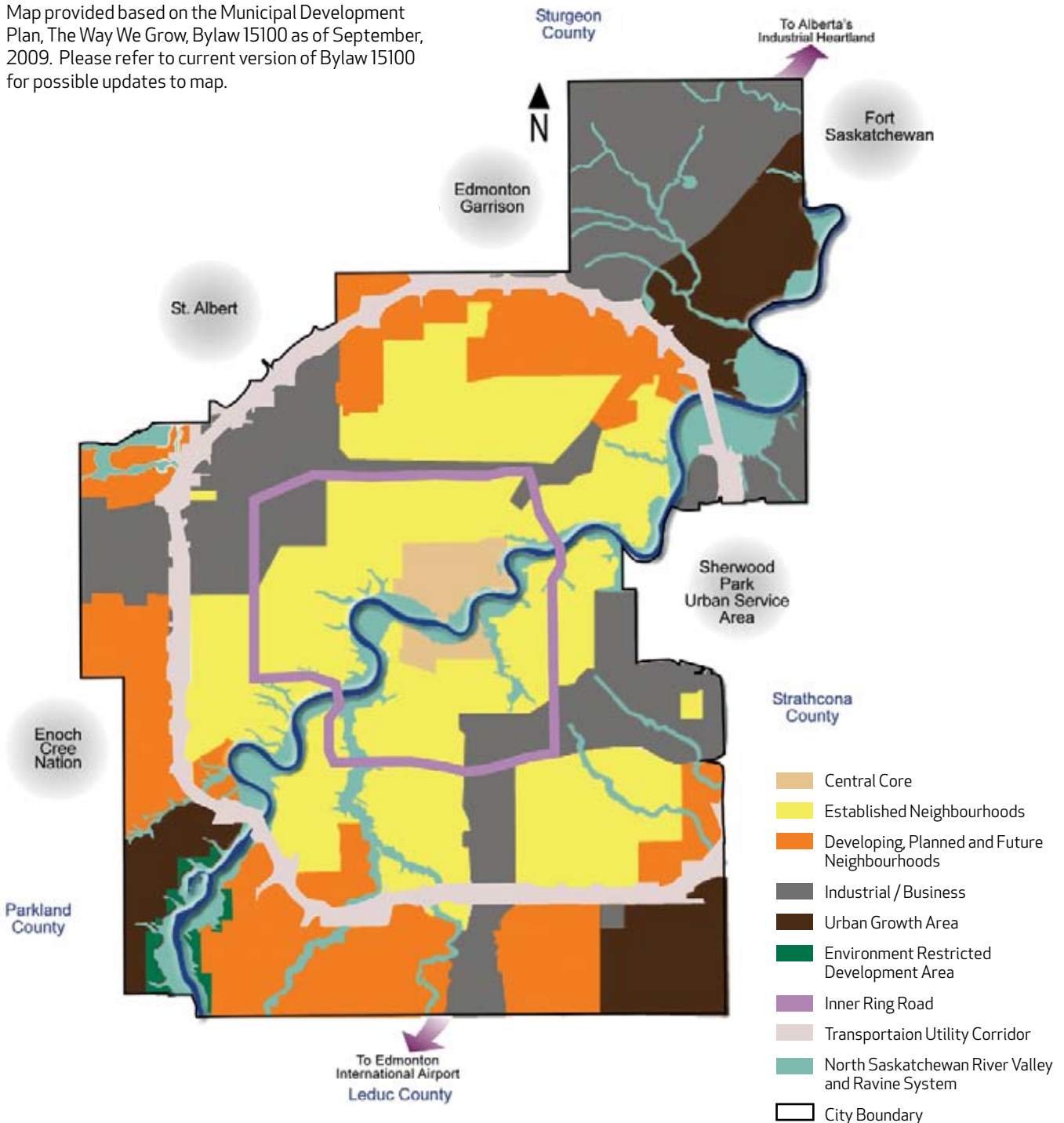
Figure 3.8 outlines the land development concept proposed by the Municipal Development Plan. Edmonton’s employment is projected to grow by more than 50% by the year 2040,

which is similar to the projections of population growth. Some of the larger employment areas within the Capital Region will be in the Alberta Industrial Heartland and Port Alberta (see Chapter 8 – Goods and Service Movement, Figure 8.2 - Regional Industrial Areas). Expansion of post-secondary education is also expected to contribute to future economic and employment growth.

If the current growth patterns continue, more than 80% of the population growth by 2040 is expected to occur outside of the established areas, while 75% of employment growth by 2040 will occur outside the established areas and industrial areas.

Figure 3.8 - Proposed Land Development Concept (MDP)

Map provided based on the Municipal Development Plan, The Way We Grow, Bylaw 15100 as of September, 2009. Please refer to current version of Bylaw 15100 for possible updates to map.



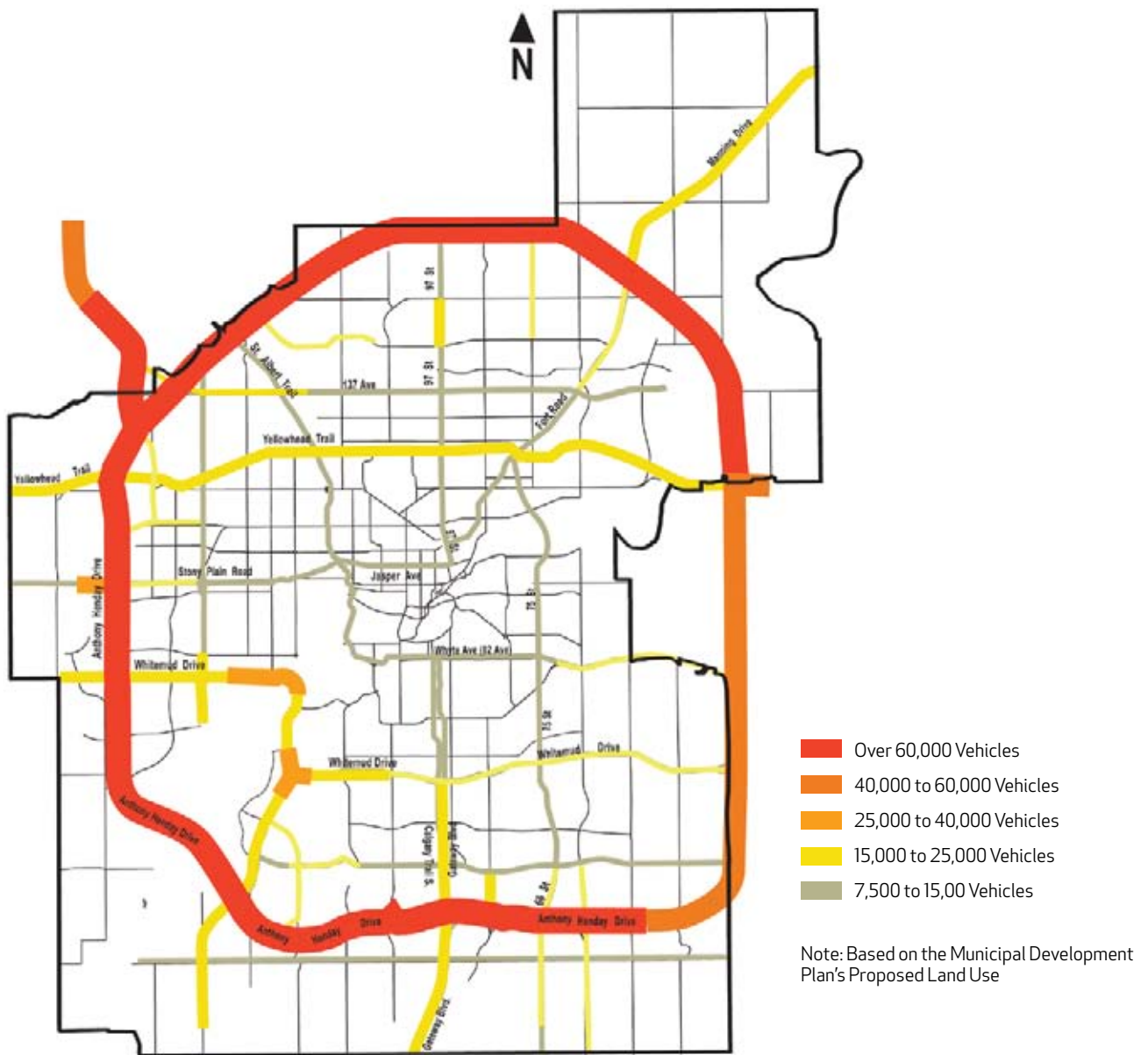
This map represents a broad and conceptual illustration of the desired land development structure and is not intended to provide site specific direction to land use regulations.

Transportation Network Supply and Operating Conditions

Figure 3.9 shows the anticipated increase in vehicle traffic volume between 2006 and 2040. Anthony Henday Drive, although not complete today, is projected to be complete by

2016, and therefore shows a large increase in traffic volume over 2006. Yellowhead Trail, Whitemud Drive, the Inner Ring Road, and the Highway Connectors also carry a significant amount of the traffic growth.

Figure 3.9 - 2040 Daily 2 way Vehicle Volume Increases from 2006



Transportation Policy and Direction

Edmontonians are driving longer distances and dealing with increasingly congested streets. Automobile travel is increasing at a much faster rate than the rate of population growth: between 1994 and 2005, Edmonton's population increased by 13% while the total number of kilometres traveled by automobiles (vehicle-kilometres) increased by 32%. The result is increased roadway congestion that impedes the efficient movement of people, goods, and emergency response services.

The transportation system is inextricably linked with land use policy. Vehicle kilometres traveled will consistently increase if the city continues to grow outwards in a suburban style. Edmonton's suburban population has grown markedly over the last decade.

As a city grows outward, reliance on automobiles increases. Edmontonians living in suburban style developments are the least likely to take public transportation, as shown by City studies. This reliance on automobiles, combined with outward expansion of the city, means that people's automobile trip lengths will become longer. The resulting cycle of increased kilometres traveled, road congestion, and the perceived need to build more roadways requires ever more taxpayer dollars for operation and maintenance, and is fiscally and environmentally unsustainable.

In the Alberta Health Services report *How Healthy Are We?* (2007), four major health risks associated with long trip distances and automobile dependence are identified - physical inactivity, air pollution, motor vehicle collisions and mental health. As increased time is spent commuting, daily opportunities for widely accessible and inexpensive forms of

exercise such as walking or biking decrease. Walking to work or shopping areas, sending children to school on their bicycles, or traveling to other destinations by bus or LRT are all made more difficult when distances are great because of low density neighborhoods, when streets are not well connected, or when public transit is less frequent.

Volatile Fuel Prices

As Edmontonians continue to rely on automobiles for their commute and drive longer distances, there is a risk associated with increases in fuel prices potentially arising from supply constraints associated with peak oil and/or the onset of a carbon pricing regimen. If the compounding cycle of increased kilometres traveled continues, Edmonton's economic vitality may be affected by volatile fuel prices as citizens are forced to spend more to commute. Increasing and volatile fuel prices will also affect the financial sustainability of City operations if the vehicle fleet continues to use predominantly petroleum-based fuels such as gasoline and diesel.



4.0 TRANSPORTATION AND LAND USE INTEGRATION

The integration of transportation and land use supports

TMP STRATEGIC GOALS:

- Transportation and Land Use Integration
- Access and Mobility
- Transportation Mode Shift
- Sustainability
- Health and Safety
- Well-Maintained Infrastructure
- Economic Vitality

MDP STRATEGIC GOALS:

- Sustainable Urban Form
- Integrated Land Use and Transportation
- Complete, Healthy and Livable Communities
- Urban Design
- Supporting Prosperity
- Natural Environment

Background

Edmonton's settlement pattern and urban form have always been influenced by its transportation infrastructure, including its river connections, railways, roadways, public transportation and airports. Transportation provides access to land, thereby affecting its desirability and value, while the mix and intensity of land uses results in activities that generate demands on the transportation system.

It is well recognized that major roadway and highway investments tend to support and be consistent with a dispersed urban form and lower density development. Conversely, effective transit investments both rely on and help encourage more concentrated, denser and mixed use patterns of development. Continued growth of dispersed, low density land uses in Edmonton makes the provision of effective

transit service very difficult and costly. The inability to effectively serve dispersed land uses has and continues to result in a high dependence on automobiles, as well as pressures to expand existing roads and build new ones.

A major expansion of the LRT system is proposed to help move the city towards achieving the City Vision of becoming compact, healthy and sustainable. Land use policies and decisions to complement and support this system will be essential for success. Effective transit service along with transit oriented development will decrease the need for other public infrastructure investment throughout the Capital Region, and provide viable alternative transportation modes that will reduce Edmonton's carbon and ecological footprint and lessen demand on energy and natural resources.

An integrated approach to planning and developing the transportation system and land uses supports the creation of an efficient, sustainable, compact and vibrant city that maximizes the effectiveness of its investment in transportation infrastructure.



4.1 Integrating Transit with Land Use

Building an integrated land use and transit system is key to managing the future growth of Edmonton. To accommodate future growth in a way that will enhance rather than degrade the region's economy and appeal, the City of Edmonton can create higher density, mixed use developments in existing and future communities that are served by LRT, premium bus, or frequent, all-day bus service and make them better places to live and work (See Chapter 5 – Public Transportation for discussion of premium transit and premium bus service).

The effective integration of land use and transit infrastructure requires mutually supportive land use, roadway, neighbourhood design and transit policies and actions. To that end, the City's desired urban form, and the land uses used to define it, must be supported by a transportation network that reinforces the City's broader economic, social and cultural objectives.

An Integrated Transit and Land Use Framework

An Integrated Transit and Land Use Framework focuses future higher density residential and employment growth toward transit corridors and station areas where it can be best accommodated by transit services and other public facilities. The integrated transit and land use approach provides direction for developing and redeveloping property based on the transit service provided, so that higher density developments are located where it is convenient for people to use transit. This approach promotes the creation of compact neighbourhoods with housing, jobs, shopping, community services, and cultural and recreational opportunities all within walking distance of convenient transit service. Integrating the planning and development of transit and land use creates well designed, livable, well connected, and environmentally sustainable communities where people can get from home to the office, grocery store, day care centre, restaurant, dry cleaner, library or park without using an automobile.

Planning efforts to support transit oriented communities include:

- Designing for public transportation initially, as opposed to fitting it in later.
- Encouraging a diverse mix of land uses at transit nodes and along transit corridors. This allows people to live and shop near their jobs, and leads to more balanced ridership levels and day-long transit use.
- Locating major trip generators (office towers, shopping centres, entertainment facilities, cultural centres, post-secondary education institutes, and major health care facilities) close to transit nodes and transit corridors. These facilities should be designed to be pedestrian friendly, bicycle friendly and compatible with transit.
- Moderating the supply of parking at selected, higher density trip destinations to encourage the use of transit and other alternative modes.
- Avoiding or minimizing land uses near transit nodes that are auto-oriented or that require significant amounts of parking.

The concepts of Smart Growth and Transit Oriented Development have been prevalent across North America for a number of years. The application of these concepts in Edmonton must however recognize the local Edmonton context and the reality that different parts of the city may require different approaches.

The land development pattern in Edmonton has a multitude of conditions. The types of projects that may be appropriate in older neighbourhoods, including their scale and density, are different from those that may work in newer areas.

The diversity of current development patterns, built forms, and levels of transit service requires the integration of transit and land use to be influenced by the local context. To provide general direction for development intensification, Edmonton can be divided into transit area types based on their geographic location, the type of land uses in the area, the type of transit service provided, and the built environment as defined below.

- **LRT Nodes** – Areas served by existing and proposed LRT should have the highest land development intensities in Edmonton to achieve transit oriented development. Areas initially served by premium bus service as a precursor to LRT may be included in this category. Not all LRT Nodes are equal and development densities will vary between them due to the local context of the station.
- **Transit Centres** – These are hub locations for bus routes in Edmonton that allow for transfers between routes. Similar to LRT Nodes, these areas benefit from their proximity to transit service, and as a result the development intensities surrounding them should be moderately high, leading to the creation of mixed use, complete communities that evolve to become important centres of activity.
- **Transit Avenues** – There are 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 seven days a week with at least 15 minute frequency during weekday peak, and weekday, Saturday and Sunday midday periods. The land uses along these corridors are primarily oriented toward the street, allowing for redevelopment and intensification. Figure 4.1 illustrates the location of Transit Avenues in Edmonton. The areas along these corridors should intensify to moderate levels over time because they have dependable transportation options.
- **Other Areas** - All areas not meeting the LRT Node, Transit Centre, or Transit Avenue definition are defined as “Other Areas”. Other Areas include locations where the level of transit service is not great enough to be a factor in intensification of development, and where the street patterns, built environment, and existing land uses limit the potential for redevelopment or intensification. These areas should therefore not intensify to the same extent as areas associated with LRT Nodes, Transit Centres, or Transit Avenues.



Figure 4.1 - Transit Avenues



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4.2 Integrating Roadways with Land Use

All the components that help shape urban form must be aligned for the City to reach its goals. As with transit, there is a need to develop roadway related policies and actions that support the city's land use goals, and by extension, also support the transit policies and measures that are aligned with these land use directions.

Planning efforts to support appropriate land use and roadway integration include:

- Locating land uses and forms of development that are reliant on vehicle access to areas with appropriate and supporting roadway infrastructure; this would include areas of industrial and/or office park development that are highly dispersed, have high levels of free parking, serve commercial heavy vehicles and are inherently difficult and costly to serve with public transit.
- Giving priority to roadway projects that support enhanced transit operations and the movement of goods and services.
- Designing transportation systems to ensure they are compatible and complementary to the surrounding land uses.
- Avoiding the construction or enhancement of roadways that would compete with or diminish the effectiveness of adjoining (parallel) transit infrastructure or service.



4.3 Community Building

The integration of transportation and land use is more complex than simply placing the correct land uses around the appropriate transportation investments. It incorporates all the diverse elements of community building that influence land use and transportation infrastructure in the overall urban fabric.

Land Use and Community Character

The creation of a sustainable community involves a mix of land uses as well as land use features and design elements that promote the development of walkable communities.

Transportation Mobility and Access

Transportation facilities should be designed for the movement of goods and people, balanced by the need to design the transportation system to fit with the surrounding or desired land use context and the need to support development opportunities. Neighbourhoods should be designed to encourage community-friendly traffic behaviour, such that speeding and shortcutting are discouraged.

Parks, Public Spaces and Civic Infrastructure

Parks and civic infrastructure are community investments that have a significant impact on adjoining land uses. A system that considers transportation infrastructure to a greater extent than the current system will be necessary to develop livable, transit-friendly communities. Frequency of use, public safety and public acceptance of parks, public spaces, cultural and recreational facilities and civic infrastructure increases significantly when access and visibility is improved, and the surrounding land uses encourage use throughout the day.



Economic Development and Development Incentives

The City has the ability to encourage, provide incentives and potentially share risk with private developers to create desired patterns of development. Economic development and development incentives play a critical role in shaping the pattern of development in Edmonton and placing demands on the transportation system.

4.4 Regional Context

Coordination of land use and transportation decisions within the City of Edmonton will affect Edmonton's urban form. If similar policies are implemented in the entire Capital Region the effectiveness of transportation and land use policies will be maximized.

Strategic Objective

4.1 The City will integrate land use planning and transportation decisions to create an accessible, efficient and compact urban form.

Strategic Actions

- a. Developing integrated transit and land use guidelines.
 - b. Encouraging land uses that are compatible and complementary to the surrounding transportation network.
 - c. Designing the transportation network to ensure it is compatible and complementary to the surrounding land uses.
 - d. Locating business employment areas relying heavily on goods movement in the vicinity of the Inner Ring Road, Anthony Hendy Drive or Highway Connectors.
 - e. Working with regional partners to implement complementary policies in adjacent municipalities and in the Capital Region Plan.
-

5.0 PUBLIC TRANSPORTATION

A comprehensive public transportation system supports

TMP STRATEGIC GOALS:

- Transportation and Land Use Integration
- Access and Mobility
- Transportation Mode Shift
- Sustainability
- Health and Safety
- Economic Vitality

MDP STRATEGIC GOALS:

- Sustainable Urban Form
- Integrated Land Use and Transportation
- Complete, Healthy and Livable Communities
- Urban Design
- Supporting Prosperity
- Working within our Region

A comprehensive public transportation system supports a sustainable, livable city where more people use transit as a preferred transportation choice.



Background

Public Transportation is a cornerstone of Edmonton's transportation system. Edmonton's strong economy and population growth will continue to exert significant pressure on the city's transportation system, civic infrastructure and public services. Growing environmental and energy concerns make the development and expansion of the existing public transportation system paramount. Indications are that Canada has a great opportunity to support a shift to sustainable transit options for a variety of reasons. Canadians are saying that they want better transit to create better communities and to help cope with increasing gas prices, other significant costs associated with vehicle ownership, and increasing traffic congestion.

The Transportation Master Plan places an emphasis on developing and expanding the existing public transportation system while capitalizing on new opportunities for public transportation within the greater Edmonton area.

To make public transportation the preferred choice of more people, Edmonton must make a series of major improvements to the transit system as well as to its physical, social and economic context. A comprehensive public transportation system is the key to achieve the City's Vision and Strategic Goals. The importance of public transportation in city building is recognized in *The Way We Grow* chapters "Managing Growth," "Complete, Healthy and Livable Communities" and "Urban Design."



5.1 Light Rail Transit (LRT) Network

Successful Public Transportation

Implementing a public transportation strategy, including substantial infrastructure improvements, will not be sufficient if done in isolation. The performance and attractiveness of Edmonton's public transportation system are heavily influenced by a number of other policy driven issues, including land use planning and development (See Chapter 4 – Transportation and Land Use Integration). Substantial increases in ridership call for greater availability, reliability, speed, and comfort of transit service than is offered today. In planning a level of service for public transportation, Edmonton must balance passenger comfort and convenience with the need to deliver services cost-effectively. Ensuring that travel demand can be managed in a manner that best supports and strengthens the public transportation system is also very important. A comprehensive public transportation system will be made up of a variety of service strategies, including premium transit, bus service, and the Disabled Adult Transit Service (DATS).

Premium Transit

The successful implementation of an expanded, city-wide express transit network will be a critical element in the achievement of the City's objectives to shape and define a 21st century city. A network of premium transit will provide faster, more reliable service with direct connections to major destinations. Premium Transit refers to express service transit routes with a limited number of stops that connect major destinations and transit interchange points, and is characterized by high service frequencies, higher than average system speed, and improved service reliability. Premium Transit can be provided by rail (LRT) or bus (Premium Bus).

Role of LRT

LRT requires significant capital investment to develop; however it has many features that make it a worthwhile investment for Edmonton.

- LRT provides a proven, high quality, high capacity, efficient and environmentally friendly means to move people.
- LRT is quick, reliable, accessible and not susceptible to traffic congestion, so it is an attractive alternative for automobile users.
- LRT is a permanent, high profile investment that encourages regeneration and compact, urban communities.

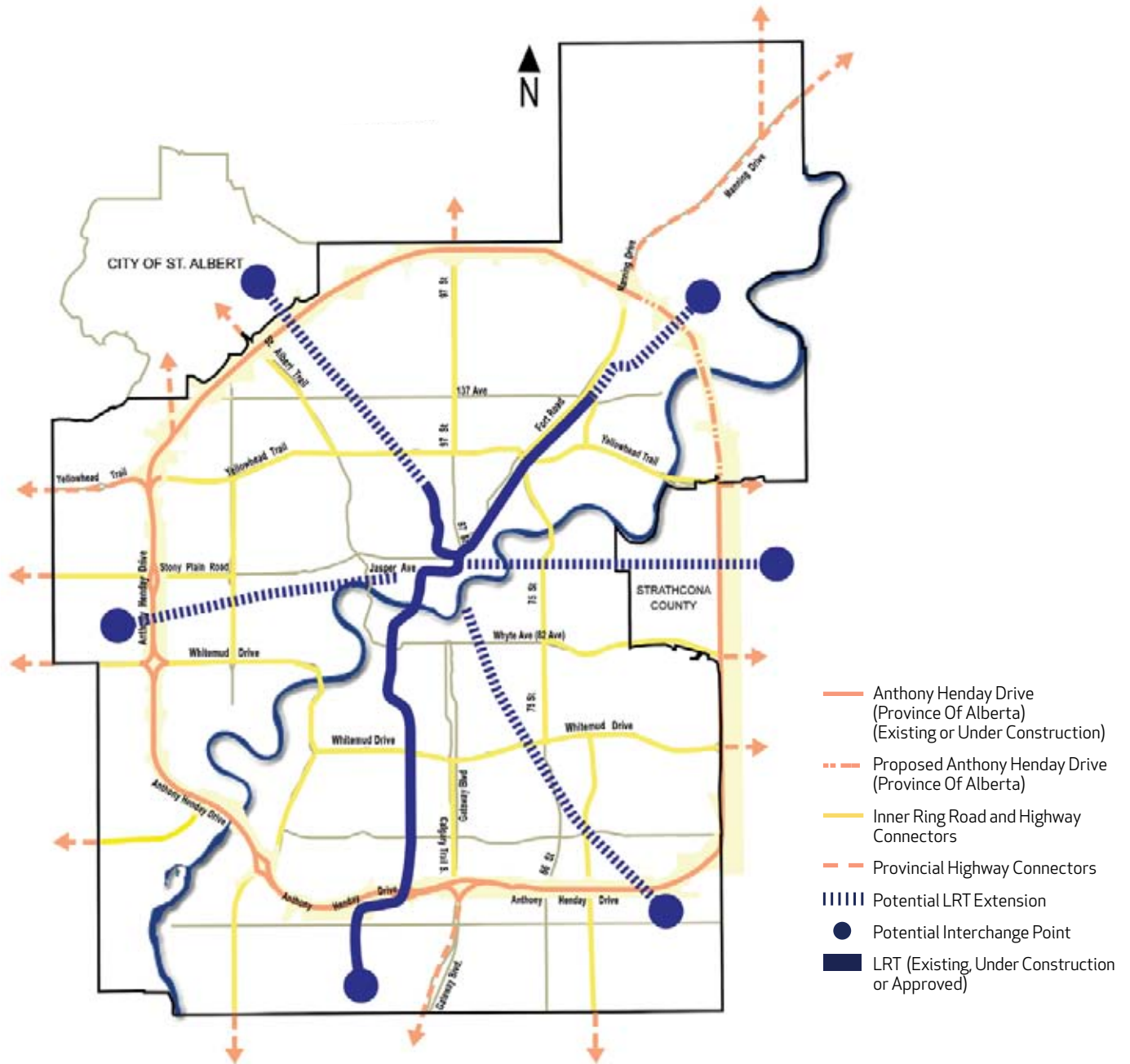
Existing LRT

Edmonton currently has one LRT line that operates from Clareview station in the northeast, along the CN rail alignment, through the Downtown to the University in a tunnel, and surfaces at the University Hospital before continuing to South Campus. Edmonton's original northeast LRT was designed and constructed in the late 1970s, when vehicle and platform designs reflected heavy rail design philosophy.

LRT Network

Expansion of the LRT network to all sectors of the city, as shown on Figure 5.1, would develop the city-wide transit system. The ultimate LRT network could have six lines extending to the Northwest, Northeast, East, Southeast, South and West. The LRT network has a focus to Downtown which aligns with *The Way We Grow* policies that aim to promote the growth of office employment opportunities across the city, with Downtown as the primary focus (for further information see *The Way We Grow* "Supporting Prosperity" chapter). As the LRT and supporting bus network expands, high quality transit travel will be available to an increasing number of destinations, thereby increasing the attractiveness of the system to users.

Figure 5.1 - Potential LRT Expansion - 2040



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LRT Vehicle Technology

The high floor LRT vehicles currently used in Edmonton were state-of-the-art when the City of Edmonton opened the LRT in 1978. Low floor LRT vehicles were first introduced in the late 1980s and have since evolved to become the industry standard for new LRT systems in Europe and North America.

The biggest advantage of a low floor LRT system is that the stations can be at street-level, smaller and require less infrastructure. Practically, this allows stations to take a form more similar to a bus stop than a large station. A low floor LRT stop can be as simple as a raised curb and sidewalk. This urban style to LRT planning makes it easier to integrate stops into their local surroundings. Low floor LRT stops provide better pedestrian connections and fewer barriers to accessibility because ramps and steps are not needed.

As Edmonton expands the LRT network, low floor technology will be explored for any new LRT line that does not physically tie into the existing LRT system.

An Urban Style for the LRT System

The current LRT line was developed along a former rail corridor with stations serving recreational centres and residential areas along the line. Stations in the Downtown core have close spacing which reflects an urban style but the stations outside the core are further apart, spaced at approximately two kilometre intervals.

An urban style approach to LRT provides more direct service with closer stop spacing to provide access to more people and places. This also provides a better fit with land use plans for transit oriented development. Because more people are within walking distance to the stops, there is less reliance on large-scale bus transfers and Park and Ride.

An urban system will be pursued for the existing system and any new LRT lines. Moving toward an urban style LRT system could encourage development of compact urban communities, while providing reliable, express transit service to those communities. Providing smaller scale stops closer together will encourage transit supportive development and enhance connectivity to a greater number of destinations. LRT stops should be included where development will realistically occur and must be balanced with an overall consideration for trip times and potential impacts on overall ridership.

Central Area Circulation

The central area, including the Downtown and University of Alberta, is the most transit supportive area in Edmonton because it is a high density activity zone for population, employment and post secondary education. All LRT routes in the LRT Network Plan serve the central area and interconnect there to allow multiple transfer and destination points. Providing LRT circulation in the central area, including an East-West LRT connection through Old Strathcona, would improve overall operational flexibility, would allow for easier transfers and increases the number of passengers that could be served. New routes in the central area will be at surface (street-level), and passengers will be able to transfer between the lines to existing underground LRT stations in the Downtown Core.

Strategic Objective

5.1 The City will pursue expansion of the LRT to all sectors of the city with a goal to increase transit ridership and transit mode split, and spur the development of compact, urban communities.

Strategic Actions

- a. Developing the LRT as shown on Figure 5.1, in consideration of balancing objectives such as service, cost and redevelopment opportunities.
 - b. Developing new LRT lines that do not tie into the existing system using low floor technology.
 - c. Pursuing an urban style system for the existing LRT and new LRT lines.
 - d. Assessing/developing a central area circulation concept.
 - e. Providing feeder bus service to provide direct or near-direct access to the LRT for neighbourhoods surrounding LRT stations/stops.
 - f. Pursuing opportunities, alone or in partnership with others, to provide and improve pedestrian and cycling connections between LRT stations/stops, transit centres and adjacent developments.
-

5.2 Bus System

Edmonton Transit's bus network currently forms the backbone of the city's public transportation system, providing part of an integrated service to offer transportation options to citizens. The improvement and further development of the existing bus network will be crucial in capitalizing on all public transportation opportunities. Planning of public transportation routes should "put the passenger first" through various passenger initiatives. Some examples include passenger information using ITS (Intelligent Transportation Systems) technology, user-friendly and flexible ticketing systems, vehicles and facilities that are clean and of good quality, convenient access to the transit system by all modes and convenient transfers. Factors such as speed, reliability, punctuality, and "softer" service improvements (modern fleet, comfort and safety, etc.) are important. A system that is aesthetically pleasing is also important to make riders feel welcome and safe.

A range of bus services are currently provided and will be expanded to better serve passengers. Basic local service will be provided and expanded into new areas as the city grows. Recognizing development patterns in the city, additional service such as cross-town routes will be provided to serve the growing demand between neighbourhoods and suburbs to ensure that bus travel can be made without significant out-of-direction travel and with minimal need for transfers. Coordination and further integration of bus service with adjacent municipalities will be developed in conjunction with the Capital Region Board (See Sections 5.7 and 9.1).



Where there are high demand corridors to major destinations, premium transit will be developed. LRT will form a major component of the Premium Transit network over time. Prior to construction of LRT, or in corridors where demand is not sufficient for LRT, premium bus service will be implemented. Premium bus service is characterized by frequencies comparable to that provided by LRT, with a limited number of stops connecting major destinations. As premium transit is implemented, the bus network will be reviewed and modified as required to complement the Premium Transit network, improving service coverage and connections for passengers and reducing bus operating costs.

The majority of public transportation services are delivered on existing roads through the use of buses. Traffic congestion on roadways causes delay and reduces reliability of the transit system. Giving priority to buses on the road network through physical and operational measures can be extremely advantageous in reducing delay and increasing reliability for passengers. The significant time savings and increased reliability realized by bus priority measures can help attract and maintain transit users.

Bus priority measures include dedicated bus lanes, bus contra-flow lanes, traffic signal priority at intersections, bus queue jumps, intelligent transportation systems, traffic signal enhancements and a number of other traffic management techniques. The development of premium bus service along high passenger demand routes will require the creation of transit priority corridors using a variety of measures to enhance transit service along the length of the corridor. Section 7.2 also discusses transit priority measures.

Strategic Objective

5.2 The City will develop an efficient, effective, accessible and integrated bus network to serve Edmonton with connections to the Region.

Strategic Actions

- a. Expanding the bus transit network as the city grows to service an increasing number of destinations using a range of transit service types based on service guidelines.
 - b. Optimizing route design and level of service to increase competitiveness with automobiles.
 - c. Adopting a 'Putting the Passenger First' philosophy, and implementing measures to cater to transit traveler's needs.
 - d. Improving the reliability and efficiency of transit service through transit priority measures, new technologies and other operational measures to make public transit a more competitive mode of travel.
 - e. Providing premium transit service along high passenger corridors to connect major destinations.
 - f. Evaluating where it is appropriate to provide premium bus service as a precursor to LRT.
 - g. Undertaking a bus network review with modifications to complement the Premium Transit Network, aimed at improving passenger services across an integrated network and reducing operating costs.
 - h. Providing clear, accurate and effective information to passengers using the latest technology and best practices (such as route, scheduling, ITS and real-time arrival information).
 - i. Pursuing opportunities to provide and improve pedestrian and cycling connections to bus stops and transit centres.
-

5.3 Services for Customers with Mobility Challenges

Accessibility for passengers with mobility challenges is an important consideration in the design and development of any transit system. This includes not only people with physical, sensory or cognitive disabilities, but those people who are elderly and people with young children. Decisions to use the public transportation system will be increasingly defined by its accessibility. "Access for All" is the overriding principle that is adopted for the development of Edmonton's public transportation network.

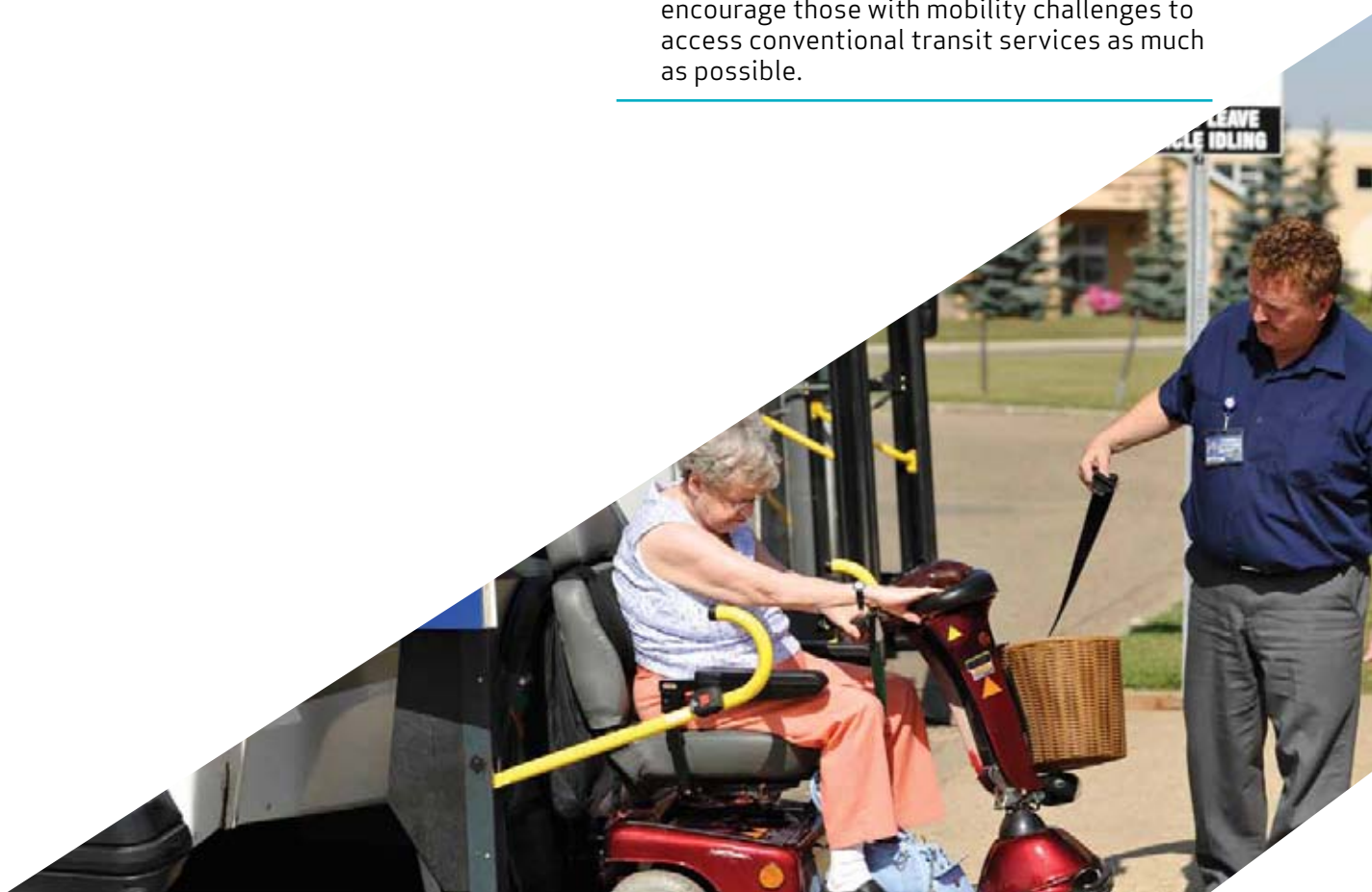
Factors to consider for the physical infrastructure of the public transportation system include ease of transfer (for Park and Ride users and those transferring from other public transportation modes), low floor/low level boarding accessibility, information and ticketing systems, quality and consistency of sidewalk provision, personal security and safety, street crossing points, low curbs at intersections and pedestrian connectivity.

Strategic Objective

5.3 The City will provide a comprehensive system of transit options for persons with mobility challenges.

Strategic Actions

- a. Operating DATS for those unable to use the conventional transit system.
- b. Designing all new and, where possible, retrofitting existing public transportation vehicles and facilities to accommodate persons with mobility challenges, including consideration of passenger connections from their homes to the transit stops.
- c. Encouraging neighbourhood design that locates facilities such as high density residential or seniors housing at or near transit routes.
- d. Providing high quality passenger access to transit for those with mobility challenges.
- e. Implementing programs and policies that encourage those with mobility challenges to access conventional transit services as much as possible.



5.4 Park and Ride

Park and Ride is an integral component of the broader transportation plan, where the goal is to increase the accessibility and utilization of the regional transit system. Park and Ride facilities can be located at strategic points throughout the regional transportation network to attract and encourage people to integrate public transit into their trip decisions. Park and Ride will attract riders who would not take transit with a bus to LRT transfer. It is also effective for accommodating transportation to special events.

While Park and Ride can enhance accessibility to transit and encourage transit ridership, it can be a costly service for the City to construct, maintain and operate, and it can compete with bus service and encourage the outward growth of new low density development. The large amount of land next to a transit station used for Park and Ride renders the land unproductive for other beneficial transit supportive development. A Transit Oriented Development (TOD) next to premium transit service has the potential to generate a greater number of transit trips than a Park and Ride facility.

In Edmonton, Park and Ride has historically been developed at most LRT stations outside the central area. As planning of the LRT has progressed to the south and into other quadrants of the city, land for Park and Ride has become more expensive and more difficult to acquire.

The planning for future Park and Ride facilities in Edmonton should be focused in areas outside of the Inner Ring Road with direct automobile access to major commuter routes to intercept regional commuter trips. This would provide the greatest opportunity to capture additional transit riders. Locations within the Transportation and Utility Corridor (TUC) or low density industrial areas are ideal as this land cannot be used for more intensive TOD developments, and the Park and Ride could capture transit ridership from outlying areas in the city or region that are not well served by transit. While Park and Ride is typically focused on LRT lines, there are key transit centres that provide direct service to LRT or major destinations where Park and Ride could be beneficial.

Currently, the City of Edmonton does not charge a fee at any Park and Ride facilities. A comprehensive Park and Ride Strategy would provide guidance regarding: fees and their impacts on transit use; the relationship of parking demand to pricing and supply policies at trip destinations; and the effects of providing other ancillary services at Park and Ride facilities (such as plug-in, covered parking or preferred/reserved stalls).

Strategic Objective

5.4 The City will develop Park and Ride facilities located towards the extremities of LRT lines or at key transit centres where land cannot be used for more intensive transit oriented development.

Strategic Actions

- a. Developing a Park and Ride Strategy.
 - b. Developing Park and Ride facilities in conjunction with LRT extension to attract regional commuter trips in locations where the land cannot be used for TOD, particularly within the TUC.
 - c. Considering Park and Ride facilities at key transit centres where direct service to LRT or major destinations is provided.
 - d. Redeveloping selected Park and Ride Lots into TOD sites over time as LRT lines are extended, as supported by market demand.
 - e. Considering fees for parking at Park and Ride facilities where demand exceeds supply, ancillary services are provided, and/or parking demand management is implemented.
-

5.5 Essential Supporting Measures

Successful public transportation systems are not simply based on having a good public transportation network or even delivering good public transportation services. Success is the result of many factors. Two major factors are land use policies and wider transportation policies. Bold, innovative leadership in addressing these issues by implementing many of the measures and approaches suggested in this chapter and *The Way We Grow's* "Managing Growth" and "Urban Design" chapters will be necessary if Edmonton's public transportation system is to support the wider City Vision in the future.

To provide a public transportation system that competes successfully with the automobile, a number of supporting measures are required. These measures are described below.

Transit Oriented Development (TOD)

Transit Oriented Development (TOD) is the creation of compact, walkable communities centered around high quality transit systems. There is a major focus on TOD policies to support LRT in the TMP as outlined in Chapter 4 – Transportation and Land Use Integration.

Transit Fares and Financial Issues

Transit faces several disadvantages related to the price of travel, although recent environmental issues and energy prices may reduce these disadvantages. Free parking is the most significant (especially at workplaces), since it often reduces the perceived costs for most automobile trips to below the cost of a transit fare. The considerable fixed costs of vehicle ownership and operation do not influence individual trip-making decisions, particularly in Edmonton where traffic congestion is relatively light to moderate in comparison with other urban centres.

To ensure that transit fares are attractive and customer-friendly, the broad principle for transit fares should include a system that is:

- Easy to use and understand
- Cashless
- Regionally integrated
- Designed to provide price incentives for more frequent use
- Affordably priced to make transit an attractive alternative to the automobile

Transit Safety and Security

Addressing safety and security issues is a high priority for all public transportation systems, and this priority must be maintained in Edmonton if the City is to achieve its transit objectives. Decisions to use the public transportation network will be influenced by perceptions of safety and security as well as its accessibility.

Edmonton must continue to work to improve safety and security on the transit system through innovative physical measures (such as aesthetically pleasing landscaping and design), operational measures, and public awareness initiatives. For further information see *The Way We Grow* "Urban Design" chapter.



Public Transportation Integration with Other Modes

Public transportation passengers rely on connections with other modes to make their trips. Improvements to active transportation (e.g. walking and cycling) and Park and Ride facilities are important to overall transit system access. Transit facilities need to be made accessible to the public through the provision of sidewalks for walking, facilities for cycling (including bike parking at transit stations and provisions for buses to carry bicycles) and automobile use (via Park and Ride lots at some locations and passenger drop-off zones at LRT and transit centres). Planning, design, and operation of all of these facility types must ensure accessibility for persons with mobility challenges.

Automobile Parking

Availability and price of automobile parking are significant determinants of the attractiveness of public transportation. Public transit use could be encouraged if the City limited parking or took a greater role in managing parking supply and cost at key locations. Possible measures include:

- Land use policies that would limit parking supply in the central areas and at major facilities or institutions, as well as in the vicinity of LRT stations.
- Encouraging shared and/or structured parking to enable compact development patterns.
- Developing parking management strategies to control parking.
- Pursuing the ability to impose levies on non-residential parking spaces.

Section 7.3 discusses approaches to parking management.



Strategic Objective

5.5 The City will implement essential supporting measures to enhance the viability and success of the public transportation system.

Strategic Actions

- a. Progressing towards and working with the Capital Region to implement a regionally integrated, easily understood cashless transit fare system.
 - b. Enhancing transit safety and security measures.
 - c. Integrating transit with active modes, including enhanced bike parking, bikes on buses and sidewalk connections.
 - d. Developing a parking policy, including parking pricing strategies, to discourage the use of single occupancy vehicles in appropriate locations in favour of other modes.
-

5.6 Taxis

Taxis provide a form of public transportation and are an important mobility option for residents and visitors of Edmonton and the Capital Region, particularly seniors, persons with disabilities, and individuals who choose not to own a vehicle. Accessible vehicles are available for persons with disabilities and supplement the City-operated DATS service.

In Edmonton, the Vehicle for Hire Commission licenses, regulates and controls the operation of taxis and related taxi business licenses. There are about 1,200 taxis permitted to operate in Edmonton (2008).

Since taxis are in operation for extended periods of time, significant reductions in vehicle emissions can be made by encouraging the adoption of fuel efficient, low-emission vehicles for the taxi fleet.

5.7 Regional Connections

As the Capital Region continues to expand, it will become increasingly important to service more areas of the Capital Region with public transportation, including other municipalities and the Edmonton International Airport for passenger air travel. While some transit systems and services outside of Edmonton already exist, a more coordinated approach will be necessary to support the Capital Region's economic and social well being.

The Capital Region Board's vision for the *Intermunicipal Transit Network Plan* (2009) is: "The Region's transit network enables the Capital Region to achieve its economic, social, and environmental objectives by making transit a convenient and competitive mode of transportation." As part of the Capital Region Board, the City will work with its regional partners to develop public transportation on a regional level, including bus, LRT and specialized services for persons who have mobility challenges. In addition, the City will work with the Capital Region to carry out TDM measures within the Region on a coordinated basis. The regional interface is discussed further in Chapter 9 – Regional Interface.

6.0 ACTIVE TRANSPORTATION

Encouraging active transportation supports

TMP STRATEGIC GOALS:

- Access and Mobility
- Transportation Mode Shift
- Sustainability
- Health and Safety
- Transportation and Land Use Integration

MDP STRATEGIC GOALS:

- Sustainable Urban Form
- Integrated Land Use and Transportation
- Complete, Healthy and Livable Communities
- Urban Design
- Natural Environment
- Working within our Region

Background

Active transportation is any mode of transportation by which people use their own energy to power their motion, such as walking or cycling. The many benefits of active modes of transportation include not only building health and exercise into one's daily routine, but also a large number of social, environmental and financial benefits to the user and to society at large. In addition, active transportation helps to create a strong sense of community. With increasing international concern about obesity and growing rates of diabetes in affluent countries, a coordinated approach is needed when addressing health, land use and transportation planning. Studies have shown that building a nominal level of exercise into one's daily routine can have enormous benefits to health and happiness.

Active transportation helps to conserve the environment. There is movement on a local and global scale to reduce dependency on oil consumption and to reduce greenhouse gas emissions. Active transportation reduces greenhouse gas emissions and improves air quality related to transportation by reducing vehicle volumes and maximizing the effective use of existing infrastructure.

Aesthetics in the urban area such as landscaping have the ability to encourage active transportation by creating inviting, safe and interesting spaces. As is stated in *The Way We Grow*, streets, sidewalks and boulevards should be designed to provide safe, accessible, attractive, interesting and comfortable spaces for pedestrians, cyclists, automobiles and transit, and to accommodate utilities and landscaping. In addition, streetscaping improvements should be carried out that create high quality public spaces through tree planting and landscaping, pedestrian scale lighting, quality street furnishings and decorative paving. Design approaches that reduce the impacts of parking and public utilities on the quality of the pedestrian environment are also beneficial.

Edmonton's active transportation system is multi-faceted. It consists of sidewalks, walkways, multi-use and shared use trails, and roadways. These systems can include granular, wooden, asphalt or concrete construction. Some sidewalks and paths are in road rights-of-way and some are through parks. Edmonton currently has some separate bike lanes (contra-flow) on roadways, with the remainder of cycling facilities accommodated on shared-use trails or on roadways in the direction of travel.

A walkable, cycle-friendly city supports the creation of a healthy, barrier-free, age-friendly and safe city where active modes are a preferred transportation choice.



6.1 Walking

Walking is the most fundamental form of transportation as almost all travel begins and ends with a walking trip. Walkability describes the extent to which citizens have the opportunity to walk to get to everyday destinations for work, shopping, education and recreation. Universally accessible (barrier-free) sidewalks and multi-use trails are the basic infrastructure necessary to enable walking in the public realm. Complementing this basic infrastructure with neighbourhood design that incorporates a full range of destinations and higher residential densities provides for a more walkable environment.

Since there are practical limitations to the range of walking trips, access to a good quality public transportation system is essential to transport pedestrians over long distances. Public transportation and pedestrian infrastructure should be well integrated.

The level of year round maintenance is an important factor in determining the accessibility of a pedestrian facility. This will become increasingly important as Edmonton's population ages, and is a factor in the mode choices made by individuals.

Strategic Objective

6.1 The City will create a walkable environment.

Strategic Actions

- a. Adopting and implementing a strategy for sidewalk infrastructure to prioritize and construct missing links in the pedestrian network.
 - b. Adopting and implementing a comprehensive strategy to improve walkability through community design, education and walkability initiatives.
 - c. Promoting 'Sustainable Transportation Through Site Design' principles.
 - d. Designing all pedestrian facilities to support safe, direct, and convenient routes for people of varying abilities using barrier-free, age-friendly and Crime Prevention Through Environmental Design principles.
 - e. Providing well-integrated transitions between sidewalks, the multi-use trail corridor network, other pedestrian networks, transit facilities, parkland, the river valley and ravine systems.
 - f. Developing a maintenance and snow clearing program for the active transportation system to ensure year round mobility.
-

6.2 Cycling

Bicycles are the most energy efficient mode of transportation. Many of the vehicle trips Edmontonians make every day are of a length that may be reasonably accomplished by bicycle. Throughout the city, cycling routes are provided along wide curb lanes, bike lanes, multi-use trails, granular trails and on-street bike routes. Encouraging cycling, and constructing its related facilities, can help to create well-connected, livable communities as an essential part of Edmonton's urban fabric. Maintenance of roadways, bike lanes and trails is a key factor to the accessibility of the bicycle network in all seasons.

Bicycling and transit are well suited as complementary modes of transportation. Transit service and bicycle facilities should be integrated to provide cyclists with reasonable alternatives for moderate and long distance trips.

Strategic Objective

6.2 The City will create a cycle-friendly city.

Strategic Actions

- a. Adopting and implementing a bicycle transportation plan to:
 - Develop and maintain a city-wide bicycle transportation network.
 - Integrate bicycles with transit facilities and services.
 - Provide secure and functional end-of-trip facilities.
 - Connect bicycle infrastructure throughout the region.
 - Address the maintenance of bicycle transportation facilities.
 - Support the education and promotion of cycling.
- b. Designing and constructing bicycle facilities in accordance to Crime Prevention Through Environmental Design principles.
- c. Developing and reviewing best practices, adapted to the Edmonton context, to increase the attractiveness and safety of cycling.



6.3 Shared-Use Facilities

Multi-use trails accommodate a variety of activities year round: cycling, walking, inline skating, skateboarding, dog walking and many others. They typically consist of a hard surfaced trail (asphalt or concrete), and are commonly found along rail and utility corridors, parks and the river valley as well as along arterial road rights-of-way and LRT lines. The importance of trails in the river valley is recognized in *The Way We Grow* “Natural Environment” chapter. These trails provide an opportunity for long stretches of uninterrupted travel by active modes, and form a key link in both the city-wide bicycle and pedestrian networks.

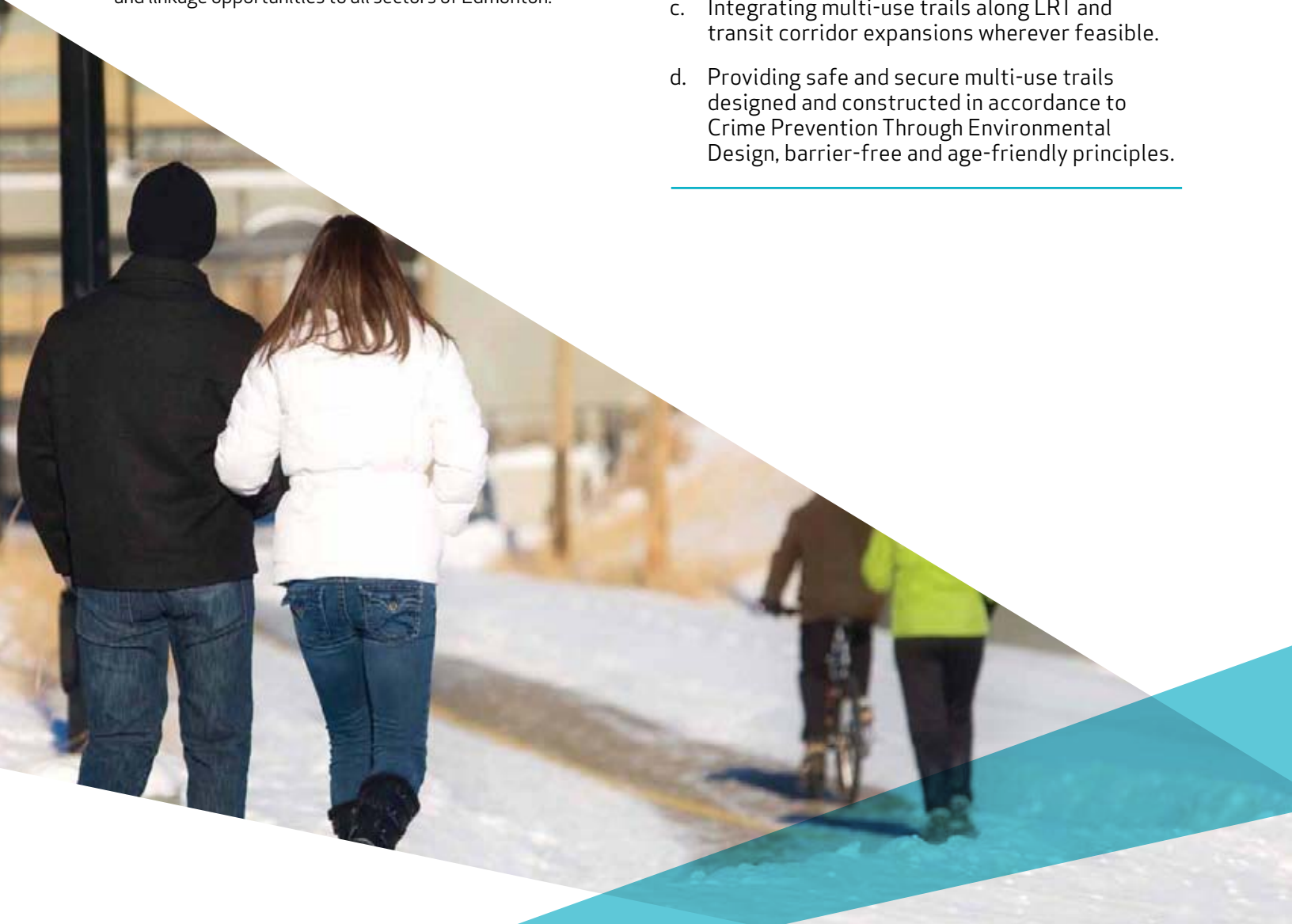
The *Multi-Use Trail Corridor Study* was approved by City Council in 2002 to provide an “innovative multi-use trail network plan and implementation strategy that offers convenient access and linkage opportunities to all sectors of Edmonton.”

Strategic Objective

6.3 The City will create an integrated network of multi-use trail facilities.

Strategic Actions

- a. Developing a coordinated network of multi-use trails throughout the city, including integration with Edmonton’s river valley, parkland and utility corridors, as well as regional connections.
 - b. Planning, constructing and maintaining multi-use trails along existing, new or widened arterial roadways within the city.
 - c. Integrating multi-use trails along LRT and transit corridor expansions wherever feasible.
 - d. Providing safe and secure multi-use trails designed and constructed in accordance to Crime Prevention Through Environmental Design, barrier-free and age-friendly principles.
-



6.4 Safety

The City is committed to providing a safe transportation system for active modes and pursuing initiatives to improve safety.

Consideration of roadway lighting, maintenance service levels, design and operation of the facilities, and Edmonton's seasonal climate are important when making safety improvements. In addition, creating aesthetically pleasing spaces through landscaping and good design helps to improve safety and encourage people to use active modes.

Education for active mode users and vehicle users (as discussed in the Chapter 7 - Roads) is also important for safety. For example, it is important to provide education to cyclists regarding their responsibilities in cyclist-motorist, cyclist-pedestrian and cyclist-cyclist interactions. It is also important to provide this type of education to motorists, pedestrians and trail users. An important part of encouraging active modes of transportation is ensuring people feel safe when using the facilities. For further information see Chapter 7 - Roads and *The Way We Grow* chapters "Complete, Healthy and Livable Communities" and "Urban Design."

6.5 Regional Connections

Active transportation has great potential for trips between Edmonton and adjacent communities, particularly when combined with transit. It is important to coordinate the planning and implementation of a network of integrated facilities for active modes that meets the needs of users throughout the Capital Region.

7.0 ROADS

The development and management of the roadway network supports

TMP STRATEGIC GOALS:

- Transportation and Land Use Integration
- Access and Mobility
- Transportation Mode Shift
- Sustainability
- Health and Safety
- Well-Maintained Infrastructure
- Economic Vitality

MDP STRATEGIC GOALS:

- Sustainable Urban Form
- Integrated Land Use and Transportation
- Complete, Healthy and Livable Communities
- Urban Design
- Supporting Prosperity
- Working within our Region

A comprehensive strategic approach to roads balances the objectives of the transportation system by focusing roadway expansions to improve the efficiency of goods, services and transit movements while using transportation operation, supply and demand management strategies to manage roadway congestion.

Background

Roads are the foundation of Edmonton's transportation system. They represent one of the largest public infrastructure investments within the city. Roads significantly affect the economic vitality and competitiveness of Edmonton and the Capital Region, as they facilitate the movement of goods and services, emergency response services, and people using public transit, vehicles, taxis, bicycles and active modes.

Roads serve a variety of functions and transportation modes, and provide connections between modes (for example, automobile to air travel). The needs of these various modes often compete for the same limited resources, such as physical space and funding. As Edmonton continues to grow, demands and pressures on the road system will increase. In managing this public resource to achieve the greatest possible public benefit, the City of Edmonton must frequently make choices that consider or require trade-offs.



7.1 Road System and Responsibilities

Road Classification

The function of roads is to move people, goods, and services, as well as to provide access to land uses. Currently the City of Edmonton generally adheres to the classification system in use in most North American cities where roads follow a hierarchy of local, collector and arterial roadways.

- Local roads provide direct access to adjacent lands and serve neighbourhood travel.
- Collector roads provide neighbourhood travel between local and arterial roads and direct access to adjacent lands. Buses generally operate on collector roads within neighbourhoods.
- Arterial road carry higher volumes of traffic between areas (“through” traffic) and have a range of design characteristics that affect operating speeds and access to the adjacent property.

Road Design

Roads are designed according to standard criteria, based on roadway classification. However, not all situations are identical. The City should consider flexibility in design to develop roads that fulfill their intended purpose based on factors such as traffic volumes, speed, active modes, emergency response services access and adjacent land uses with consideration for natural areas, natural area linkages and environmental factors such as water and air quality. Innovations in design must not degrade safety nor hinder maintenance of the roadways.

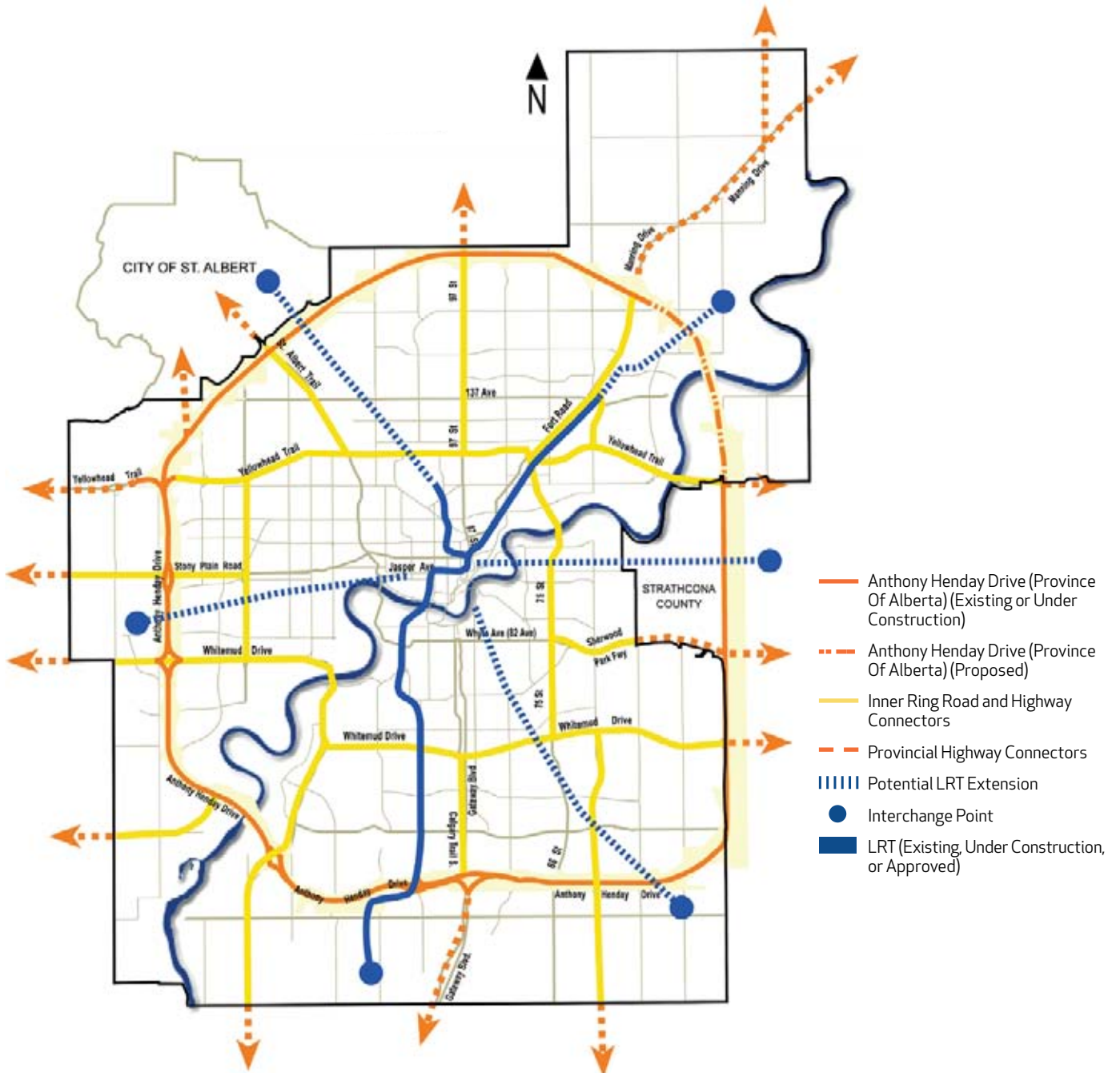
Road right-of-way makes up a significant portion of Edmonton’s public space and as such should be designed not only to be safe and functional, but also to provide attractive and comfortable space for pedestrians, cyclists and all types of vehicles. Creating attractive, accessible and safe environments through landscaping and streetscaping helps to encourage active transportation, and enhances community livability.

Roads, streets and parking areas increase the amount of impervious land area which contributes to higher storm water flows and higher pollutant loads in urban storm water. It is possible to reduce impervious surfaces by retaining natural landscaping, minimizing pavement and promoting natural infiltration to the soil through landscaping. *The Way We Grow* “Urban Design” and “Natural Environment” chapters address these issues as well.

Roadway Network Structure

The basic structure of Edmonton’s major roadways was defined in the 1999 Transportation Master Plan and remains unchanged. The Transportation Master Plan Concept, illustrated in Figure 7.1, outlines the high standard arterial roadway network within the city.

Figure 7.1 - Transportation Master Plan Concept - 2040



FOR INFORMATION PURPOSES ONLY

The following descriptions highlight the major road facilities in Edmonton:

Anthony Henday Drive – a high standard, ultimately completely grade separated, free flow facility that forms an outer ring road near the periphery of the city. It is intended to play a key role in the efficient movement of people, goods and services throughout the Region. It is maintained, owned and operated by the Provincial Government.

Inner Ring Road - intended to cater to cross-town movements on a higher standard facility within Edmonton city limits. Enhancements to existing facilities will focus on raising their service levels to a more free flowing standard to accommodate the movement of goods and services, with a minimum of six through lanes and a posted speed of at least 70 km per hour. The City will strive to reduce and control direct access to these facilities, wherever practical. These roadways include:

- Yellowhead Trail
- 75 Street / Wayne Gretzky Drive
- Whitemud Drive
- 170 Street

Highway Connectors – high standard roadways connecting Anthony Henday Drive to the Inner Ring Road as well as to provincial/national highways outside Edmonton's boundaries. These roadways are intended to have similar characteristics as the Inner Ring Road, including a more free flowing standard, a posted speed of at least 70 km per hour and limited access. The roadways include:

- Calgary Trail/Gateway Boulevard/QE II Highway, south of Whitemud Drive to Anthony Henday Drive
- Whitemud Drive, east of 75 Street and west of 170 Street
- Yellowhead Trail, east of Wayne Gretzky Drive and west of 170 Street
- 50 Street, south of Whitemud Drive and north of Yellowhead Trail to Manning Drive
- Manning Drive, north of 137 Avenue to Anthony Henday Drive
- Fort Road, north of Yellowhead Trail
- 97 Street, north of Yellowhead Trail
- St. Albert Trail, north of Yellowhead Trail to 137 Avenue
- Mark Messier Drive, north of 137 Avenue
- 23 Avenue, west of Anthony Henday Drive
- Stony Plain Road/100 Avenue, west of 170 Street
- Terwillegar Drive
- Sherwood Park Freeway

These major facilities are important not only for Edmonton, but also in the regional context, as facilities of significance for regional traffic patterns to accommodate the movement of both people and goods.



Responsibilities for Roads

The City of Edmonton owns and is responsible for managing and maintaining the majority of the road network within the city. Since the 1999 TMP, some of the major high-standard facilities have been taken over by agreement between the City and the Province and are now owned and operated by the Province of Alberta. Anthony Henday Drive and the extension of the Highway Connectors as shown on Figure 7.1 fall under the control of the Provincial Government.

Construction of the south and west sections of Anthony Henday Drive from Highway 14 on the east to Yellowhead Trail on the north has had an enormous impact on land development patterns and has had significant impact on accessibility of cross-town trips in and around the city. The Province of Alberta has committed to the construction of the north leg of Anthony Henday Drive between Yellowhead Trail and Manning Drive, with completion expected by 2011.

Arterial Roads for Development Bylaw

Local, collector and arterial roadways in developing areas, both residential and commercial/industrial, are constructed by the developer of the land. Under the Arterial Roads for Development Bylaw, land owners are required to build the four lanes of arterial roadways required to service their land. As such, basic road infrastructure is constructed by the owners as land develops and is turned over to the City for maintenance. In some cases, the City is responsible for widening arterial roadways from two to four lanes in developing areas where development existed prior to the bylaw.

7.2 Management of the Road System

Management of the roadway system is becoming increasingly important as the city continues to expand and vehicle traffic increases. As Edmonton matures from a mid-size prairie city into a large metropolitan area, it is inevitable that traffic congestion will increase, particularly during the peak periods. Physical, financial and community constraints in many areas make it unfeasible or even undesirable to build or expand roads to alleviate congestion. It has been shown in other cities that it is not possible to build enough roads to manage demand. As such, the City of Edmonton will need to place greater emphasis on strategies to optimize the use of the existing road system and shift residents to other modes.

From an overall policy perspective, there are a number of strategies for managing the existing road system including:

- Land use development strategies
- Promoting use of alternative modes
- Operating existing roadways more efficiently
- Transportation Demand Management (TDM)
- Selectively adding roadway capacity

In all of these approaches, the City will face considerable challenges. Changes in travel behaviour will take years to occur, and the financial resources required to add extensive new facilities will not necessarily be available. As they reach capacity, transportation systems must be carefully managed to prevent unacceptable trends in congestion, safety and the daily travel choices of individuals. With proper planning, relatively minor actions that resolve localized barriers and bottlenecks can have a large benefit for the overall system.

Land use development strategies

As discussed in Chapter 4 – Transportation and Land Use Integration, encouraging mixed use intensified land uses around LRT Nodes, Transit Centres and Transit Avenues can create walkable, transit friendly communities which enable residents to function with reduced need for vehicles. *The Way We Grow* policies (See Managing Growth Chapter) and the Smart Choices program support this philosophy.

Promoting use of alternative modes

The use of travel modes other than single occupant vehicles will reduce demand on the road network. Chapter 5 - Public Transportation and Chapter 6 - Active Transportation discuss promotion of these alternative modes.

Transportation System Management

Actions that result in improved efficiency of existing roadways are referred to as Transportation System Management. Optimizing the operational efficiency of a city's existing roadway infrastructure benefits all modes of travel. Traffic management measures are a means of gaining the greatest benefit from a city's existing roadway infrastructure. While the majority of these measures are traffic control system related, some localized infrastructure improvements at specific intersections or along a corridor may be included to obtain the greatest benefit from such measures.

Using traffic management measures can:

- Reduce delays to transit vehicles in mixed traffic, thus maximizing the speed and reliability of transit service.
- Reduce delays to emergency response vehicles.
- Reduce delays to vehicles on arterial roads, thus reducing overall air emissions, discouraging through traffic infiltration of residential areas and reducing the cost of moving goods and services.
- Reduce the number of traffic bottlenecks, thus decreasing the level of congestion, delay and road safety risks.

A variety of traffic management initiatives, including Intelligent Transportation Systems (ITS), that are used in Edmonton will be expanded to include:

- Further enhancements to the existing computerized signal management system responsible for traffic signal coordination and progression.

- Transit priority systems that use a combination of physical roadway improvements and communication infrastructure between the traffic signals and the transit vehicles.
- Traveler information systems that give real-time traffic and roadway information to travelers, allowing them to make informed travel decisions (e.g. trip timing, route choice, etc.).
- Incident management systems that can direct traffic away from an incident, lead to faster response to the incident, and reduce impacts on travelers in the immediate area.
- Traffic/congestion monitoring systems using remote cameras and vehicle detection systems to alert the control systems and effectively manage traffic flow
- Communications systems to link these components.



Edmonton's traffic management program will focus on key corridors using a combination of technology and localized roadway improvements. This framework will ultimately provide Edmonton with an integrated, multi-modal traffic management system that is needs driven, technology based and capable of accommodating changing traffic management needs and evolving technologies. The program will enable migration from the city's current traffic control systems to an advanced multi-modal traffic management system that proactively manages congestion.

A further aspect of efficiently operating roadways is controlling and optimizing the supply of transportation system capacity. The City must manage the allocation of road space using a variety of coordinated strategies to make the best use of its facilities as part of prioritizing transportation. Available roadway capacity can be directed to maximize the people-moving ability of the existing network and to reduce the costs of operation. Supply management strategies can:

- Maximize people movement.
- Maintain or improve safety for all users.
- Reduce or defer the need for new infrastructure and services and the additional operation and maintenance costs.
- Contribute to modal shift objectives.
- Minimize the costs of congestion.

Supply management strategies include options such as access management, reversible lanes, ramp metering, High Occupancy Vehicle (HOV) and bus lanes, bicycle lanes and time controlled parking/travel lanes. It could involve the reallocation of existing road space for other users such as transit, carpool vehicles, bicycles or taxis in order to maximize the people moving capacity of a corridor.

Strategic Objective

7.1 The City will develop a comprehensive program to continually optimize the efficiency of the existing roadway system using traffic management and transportation supply measures.

Strategic Actions

- a. Developing a program to proactively identify, evaluate and design projects to optimize the operation of the roadways in key corridors and areas of congestion using traffic management and transportation supply measures.
 - b. Developing and implementing transit priority corridors using transit signal and intersection improvements to improve reliability and efficiency of transit service with a focus on key corridors to accommodate premium bus service and high demand corridors.
 - c. Using transportation supply management strategies to promote increased use of travel modes other than the single occupant vehicle, including reallocation of existing road space.
 - d. Supporting the continued development of the Traffic Management Centre with linkages to transit, roadway operations, emergency response control centres (i.e. police, fire, ambulance, 911, 311, etc.) and potentially neighbouring cities and external agencies such as Alberta Transportation.
 - e. Working with emergency response services teams to plan, design and operate the roadway system to ensure prompt and effective response.
-

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) includes a wide range of policies, programs, services and products that influence when, where and how people travel with the goal of reducing single occupant vehicle travel and, as a result, increasing the efficiency of the transportation network by managing travel demand.

Some of the key TDM initiatives are: encourage individuals to reduce the number of trips they make, to travel more often by alternative modes, to travel with others, to travel outside peak periods, to reduce the length of their trips and to not travel at all (for example, work at home or tele-working). This is often complemented by the increasing role of information technology as a substitute for travel. While it is desirable to reduce automobile travel in general, a focus on peak hour travel reduction provides the benefit of reducing roadway congestion and the need for increased road capacity (i.e. more roads and wider roads).

TDM strategies include programs that:

- Offer travel incentives and disincentives that provide a benefit or disbenefit related to travel choices.
- Educate and promote awareness, understanding and positive attitudes about travel options.

Without supportive land use planning, infrastructure and policies, most TDM programs are largely ineffective. In particular, disincentives to automobile use can be counterproductive when reasonable and convenient alternative travel options are not supplied. TDM success requires both a philosophical and financial investment in making walking, cycling, carpooling and public transit more practical and desirable.

Strategic Objective

7.2 The City will initiate and support comprehensive programs for Transportation Demand Management to encourage a reduction in single occupant vehicle use.

Strategic Actions

- Initiating and coordinating coherent and comprehensive programs for TDM for both the City as a corporate entity and a municipality as well as for major employers and institutions.
- Systematically undertaking and expanding TDM pilot projects to:
 - Identify and overcome barriers to greater public adoption of travel modes other than the single occupant vehicle;
 - Develop effective means of promoting and encouraging greater public adoption of travel modes other than the single occupant vehicle.
- Develop measures that support walking, cycling, public transit, carpooling and tele-working.



Selectively adding more roadway capacity

As Edmonton continues to grow, the efficient operation of the city's transportation system will require additional roadway infrastructure despite improvements in traffic and roadway management. Roadways in developing areas will be constructed by the developers under the Arterial Roads for Development Bylaw, and the Province has committed to the continued construction of Anthony Henday Drive. However, given limited financial resources and the City's goal to develop a compact, sustainable, and livable city, an extensive road building program is not part of the TMP direction. While the TMP Strategic Goals advocate accessibility and mobility for all transportation modes, the process will involve balancing competing objectives.

Traffic congestion during peak travel periods is an inevitable condition in any major city. Many municipalities have recognized that it is not possible to build their way out of congestion, and have adopted strategies to manage congestion rather than attempt to eliminate it. The objective of a roadway management strategy is to balance the desire to achieve reasonable roadway operational levels with other system objectives. It is recognized that congestion tolerance increases over time as the public compensates by adjusting their travel behaviour.

The City will attempt to maintain or improve the level of service for transit and goods and services movement by giving priority to roadway projects that enhance these functions. Adding roadway capacity to serve commuter vehicle mobility will not be a priority. The focus of improvements for commuter vehicle traffic will be on optimizing the existing roadway operations; however, the City will fulfill its obligations for the staged completion of four-lane arterial roadways to provide a basic level of road infrastructure in new neighbourhoods.

Strategic Objective

7.3 The City will focus major roadway improvements on the efficient movement of goods, services and transit vehicles.

Strategic Actions

- a. Giving priority to maintaining or improving the level of service for transit and goods and services movements.
 - b. Focusing road capacity improvements on the Inner Ring Road and Highway Connectors.
 - c. Giving diminished focus on catering to commuter vehicle traffic growth through the roadway expansion program.
 - d. Completing City obligations for staged construction of 4 lane arterial roadways to provide basic access to new neighbourhoods.
 - e. Undertaking roadway and intersection improvement projects to address safety concerns, transit priority or good and services movement.
 - f. Updating the roadway planning and design objectives and guidelines to reflect the TMP direction. This will outline appropriate levels of service for new residential development, infill and overall transportation system improvements.
-

7.3 Automobile Parking

Parking is an integral part of the city's transportation system. An appropriate balance of supply and pricing of parking is necessary to support the viability of businesses and integrity of residential neighbourhoods. Management of the supply, location and price of parking can be an effective way to influence travel behaviour and encourage alternative travel modes.

Within the commercial areas of Edmonton, on-street parking facilitates access to businesses by customers and allows delivery and pick-up of goods. In this context, on-street parking is typically shorter term and turnover of vehicles is encouraged through limited duration parking meters and time-limited parking and loading zones. On-street parking in residential areas typically serves as longer-term accommodation for vehicles of residents and their guests.

On-site parking is influenced by the City through its land use planning functions. The Zoning Bylaw stipulates parking regulations for new developments based on land use type. Currently, standard zoning requires a minimum number of parking stalls, but there is no maximum limit on the number of stalls that can be provided. A review of these standards will be conducted to ensure alignment with the City's Strategic Goals.

In transit oriented residential areas and high employment areas such as the Downtown, Transportation Demand Management initiatives may be supported by regulating both on-street and on-site parking to encourage reduced automobile reliance and create livable communities. This may include limitations on the supply of parking at both the origin and destination of commuter trips as well as pricing controls on destination parking.

Where residential areas are near major trip generators such as the University of Alberta, Downtown, Commonwealth Stadium and Northlands, residential parking programs have been implemented to restrict non-residential parking in the area. There may be a need for additional areas of restriction near future LRT stations to discourage the informal use of residential streets as Park and Ride facilities.

Strategic Objective

7.4 The City will develop a parking management strategy through a combination of Bylaws and Policies to ensure the livability and economic vitality of the city and to promote appropriate land use and public transit initiatives.

Strategic Actions

- a. Managing on-street and on-site parking to strategically anticipate and respond to projected parking supply constraints or surpluses, provide convenient business access and influence sustainable travel choices.
- b. Developing land use and parking policies that manage the supply of parking provided for a development with a focus on providing only essential parking and supporting Transportation Demand Management.
- c. Developing a parking policy, including parking pricing strategies, to discourage the use of single occupancy vehicles in appropriate locations in favour of other modes.
- d. Modifying local and collector roadway designs to rationalize the roadway infrastructure space provided for on-street parking.
- e. Recognizing winter city requirements within parking policies, particularly as it relates to snow clearing.

7.4 Road Safety

The City is committed to providing a safe transportation system and pursuing initiatives to improve safety. Safety of the system is critical, and it is an overarching goal of the TMP. Factors such as roadway lighting, maintenance service levels, design and operation of the roadway “space,” neighbourhood design, and Edmonton’s status as a winter city all impact the safety of the transportation system. Edmonton’s Office of Traffic Safety uses a systematic approach to traffic safety that integrates the elements of education, engineering, enforcement and evaluation.

While facilities are initially built to optimize safety, it is possible for operating environments and user expectations to change over time. As a result, engineering design standards and improvements to existing facilities are intended to provide positive guidance and information to roadway and other right-of-way users, leading them to behave in a predictable manner. The City will continue to improve the safety of the roadways through a multifaceted approach including roadway improvements and working with communities to implement measures such as speed boards and photo radar. Further information can be found in Chapter 6 – Active Transportation. Safety is recognized in *The Way We Grow* chapters “Complete, Healthy and Livable Communities” and “Urban Design.”

Strategic Objective

7.5 The City will promote and undertake the safe planning, design and operation of the transportation system.

Strategic Actions

- a. Providing leadership in traffic safety through effective engineering, enforcement, education and evaluation programs.
 - b. Continuing to improve the safety of the roadways through multifaceted approaches such as working with communities to implement speed management measures including speed boards and photo radar.
 - c. Focusing on evidence based initiatives to improve safety for all modes of travel and all roadway users.
 - d. Reviewing new Neighbourhood Structure Plans to ensure the design encourages community friendly traffic patterns.
-



7.5 Transportation Impacts on Communities

Community Traffic Management

In order to support livable and healthy communities, intrusion of non-local traffic through neighbourhoods must be properly managed. As the City of Edmonton continues to grow, additional demands are being placed on the existing transportation network. In order to avoid increased traffic congestion, some motorists are finding their way through communities along interior neighbourhood streets. As a result, many residents have become concerned for the safety of residents, children, pedestrians, cyclists and motorists on their streets, as well as their quality of life due to shortcutting and speeding traffic. Through the use of community traffic management plans with input from the public, these traffic issues may be addressed with traffic calming measures. In addition, local destinations within communities must be properly designed to address traffic safety and strongly support active modes and transit use.

As new neighbourhoods are developed they should be designed to encourage community friendly traffic behaviour where the road design does not encourage short-cutting or speeding. By designing neighbourhoods with these principles the requirement for future traffic management will be minimized.

Noise

Part of the support for livable and healthy communities is the management of ongoing exposure to traffic-related noise. Exposure to excessive noise negatively impacts quality of life and may lead to health risks.

The Urban Traffic Noise Policy seeks to provide acceptable noise level thresholds for residential land uses within the City of Edmonton and includes implementation strategies for traffic noise mitigation that are technically, economically and administratively feasible. Noise mitigation may be achieved through the use of noise barriers to reduce the amount of noise received by interrupting the path of the noise.

Strategic Objective

7.6 The City will appropriately mitigate the impacts of the transportation network on existing and future residential communities.

Strategic Actions

- a. Undertaking Community Traffic Management Plans to address community speeding and shortcutting traffic issues.
 - b. Addressing isolated incidents of speeding and shortcutting traffic within communities through education, enforcement and engineering.
 - c. Addressing traffic safety at schools with the support of partnerships through education, engineering and enforcement.
 - d. Ensuring that infill developments are well integrated within existing communities and strongly support active modes and transit use.
 - e. Reviewing the road design in New Neighbourhood Structure Plans to encourage community friendly traffic behaviour such that future traffic management requirements would be minimized.
 - f. Maintaining an Urban Traffic Noise Policy to mitigate the negative impacts of traffic noise in existing residential areas and to ensure that land is developed to minimize the effects of noise on new residential areas.
-

8.0 GOODS AND SERVICES MOVEMENT

The efficient movement of goods and services supports

TMP STRATEGIC GOALS:

- Transportation and Land Use Integration
- Access and Mobility
- Economic Vitality

MDP STRATEGIC GOALS:

- Integrated Land Use and Transportation
- Supporting Prosperity
- Working within our Region

Background

The Capital Region, including Edmonton, is a major manufacturing, logistics and distribution centre. It is essential to the economy that commercial transportation is able to move freely throughout the city and Region. Commercial transportation is the movement of people, goods and services by a variety of modes including automobile, truck, rail and air, for the purpose of conducting business. Commercial transportation may use a variety of modes to move a good; for example a time sensitive shipment may arrive by air to the International Airport, then it may be transferred to a truck

that will use the roadways in the city and the Capital Region for just-in-time delivery to a company. Safe, efficient, effective and interconnected movement of people, goods and services are essential for supporting and fostering the economic vitality and competitive advantage of Edmonton and the Capital Region. An efficient system is cost effective in terms of time, energy consumption and infrastructure needs. *The Way We Grow* notes the relationship between land use planning and goods movement in the “Supporting Prosperity” chapter.

An efficient network for goods and services movements incorporates integrated multimodal and regional approaches to support commercial transportation needs.



8.1 Existing Road System

The City of Edmonton is responsible for designing the truck route network in Edmonton, including a network for dangerous goods movement. When determining truck routes, it is important to balance the need to provide direct access for trucks with the needs of the communities impacted by the routes. Heavy vehicles, defined as vehicles greater than 8,000 gross vehicle weight (GVW, in kilograms), must stay on these routes while traveling within Edmonton's city limits. Heavy vehicles may only use roads that are not designated as truck routes to access their destinations using the shortest path to and from designated truck routes. Trucks less than 8,000 GVW are allowed to operate on an unrestricted basis on Edmonton's roadway network.

Government Responsibilities

Issues concerning goods and services movement rarely involve only one order of government. In addition, it is challenging to find solutions that meet the needs of freight companies, the government, and the environment, due to the just-in-time delivery demands of today's businesses. Therefore, it is imperative that all orders of government work together to find solutions. The City endeavors to work together with the Capital Region to provide excellent goods and service movement. This is discussed further in Chapter 9 – Regional Interface.

City Responsibilities

The City of Edmonton's primary direct responsibility for commercial transportation is to provide roadways that facilitate the movement of goods and services. Although the City of Edmonton does not have direct control over the other modes of commercial transportation such as railways and air,

these modes also have a major role to play in meeting Edmonton's commercial transportation needs. The City of Edmonton does have a role in assessing changes to land use within or around facilities associated with these modes. In addition, the City of Edmonton works together with the Province to plan for an integrated system, recognizing the importance of multi-modalism and the relationship between commercial transportation and the Capital Region's economic health.

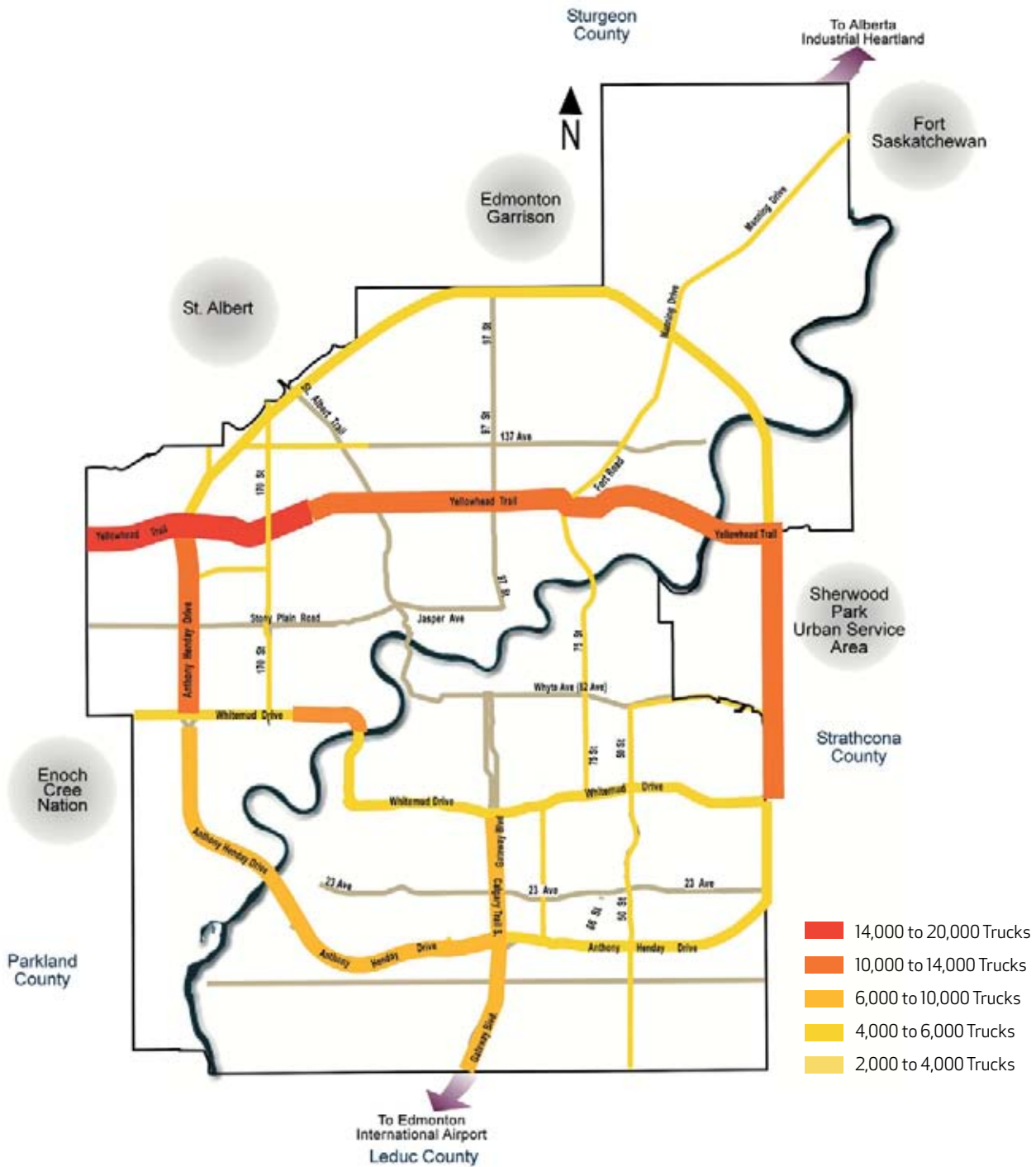
Key Goods and Services Movement Corridors

There are two types of major goods and services movements in Edmonton: external vehicle movements (vehicles passing through) and internal vehicle movements (vehicles moving from one point to another within the City limits). From the *Edmonton Region Commodity Flow Survey (2002)*, the major internal truck movements were found to be concentrated between the industrial areas as shown in Chapter 3 – Current and Future Conditions. Some of the key corridors for both types of movements are:

- Anthony Henday Drive (Provincial responsibility)
- Yellowhead Trail
- Whitemud Drive
- Inner Ring Road – Consists of Yellowhead Trail, 170 Street, 75 Street / Wayne Gretzky Drive (Note: currently, trucks must detour via 50 Street in portions of 75 Street) and Whitemud Drive
- Gateway Boulevard / Calgary Trail

Figure 8.1 illustrates projected truck movements on Edmonton's roadway network for the year 2040. The figure indicates that while Anthony Henday Drive is a major facility for truck movements, there is still significant demand on the key corridors such as the Inner Ring Road, and in particular Yellowhead Trail.

Figure 8.1 - Daily Truck Movements - 2040



FOR INFORMATION PURPOSES ONLY

8.2 Key Industrial Areas

Some of the key existing industrial areas (Figure 8.2) and projects (listed below) that are emerging within the city and Capital Region require an effective goods and services movement network.

- Northwest and Southeast Industrial Areas within Edmonton.
- Refinery Row east of Edmonton.
- Highway 2 corridor, a growing industrial complex focused along the highway.
- Northeast Industrial Area, a large undeveloped area north of Manning Drive is planned for eco-industrial development.
- Alberta Industrial Heartland
Also known as Upgrader Alley, this is a joint land use and planning project between several municipalities in the Capital Region to attract oilsands upgraders and other industrial projects to the Region. This is the largest concentration of industrial development in Canada west of Toronto.
- Port Alberta
This is a strategy for developing an efficient cargo environment with a significant focus at the international airport. Port Alberta will be a major North American inland trade and transportation hub. It has the potential to transform the Capital Region into a major North American warehousing and distribution hub that combines air, rail and road transportation infrastructure with links to Asia and the United States.

Although much of the transportation network needed to service these areas is under the control of the Province, the City will endeavor to provide supporting infrastructure to service and encourage development of these areas.

8.3 Rail

Rail transportation is a key component of the logistics and distribution sector in the Capital Region. It is a critical link of the supply chain for many businesses. Canadian National Railways (CN) and Canadian Pacific Railways (CP) have major rail operations in Edmonton. CN has an intermodal yard in northwest Edmonton (Yellowhead Trail and 184 Street) and CP will be constructing a large intermodal facility at the south boundary of the City of Edmonton (41 Avenue SW and QE II Highway south) to replace its current intermodal yard on Calgary Trail and 34 Avenue NW.

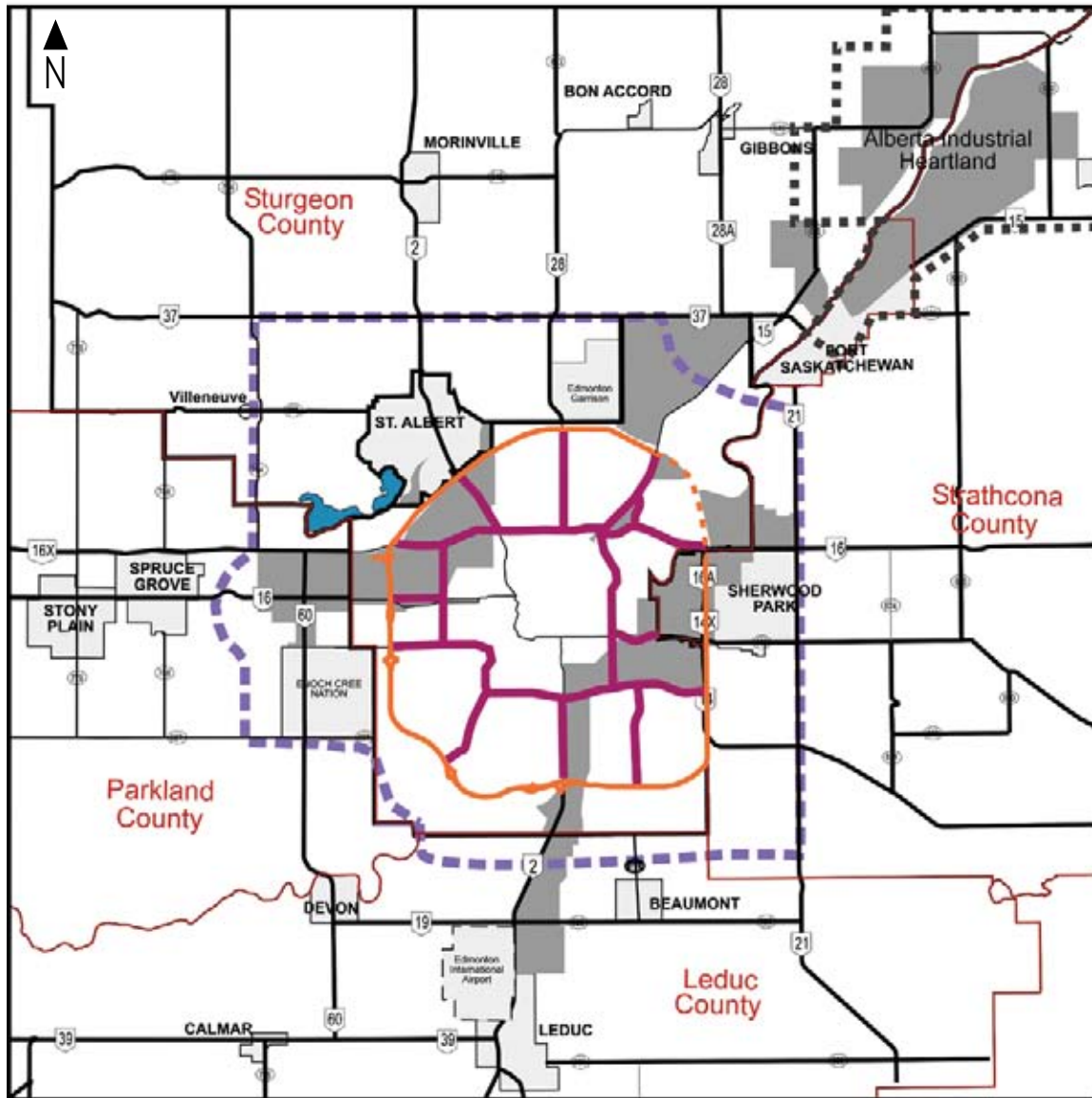
Rail shipments are increasing and will continue to do so, resulting in longer and more frequent trains. Resource development in northern Alberta is a major driver of increased rail traffic, as are petroleum and petrochemical complexes in the Capital Region. The Prince Rupert seaport opened in late 2007 to provide additional capacity for Asian shipments. It is expected that Edmonton will play an increasing role as a distribution centre, particularly for reloading opportunities of empty containers en route back to Asia.

As trains operating in urban areas cross roadways, the needs of the users of those two facilities come into conflict. There are more than 35 intersections of railway tracks and city roadways in Edmonton. Railway operations are impacted by growth in traffic volumes and the expansion of our roadway system.

While the grade separation of rail from roadways is the ideal solution to address safety and capacity issues, it is an expensive capital expenditure. The construction cost of grade separation is generally a shared expense, paid for largely by the party constructing the new route. The ultimate responsibility to apportion design and construction costs is held by the Canadian Transportation Agency. The City of Edmonton has developed a system to assess the priority of upgrades to rail crossings, and will construct improvements to the crossings over time, particularly along high demand goods and services movement corridors.

Figure 8.2 - Regional Industrial Areas

Map provided based on the Municipal Development Plan, The Way We Grow, Bylaw 15100 as of September, 2009. Please refer to current version of Bylaw 15100 for possible updates to map.



FOR INFORMATION PURPOSES ONLY

- Industrial
- ■ ■ Alberta Industrial Heartland
- County Boundary
- Future Regional Ring Road (Proposed)
- Anthony Henday Drive (Province Of Alberta) Existing or Under Construction
- - - Anthony Henday Drive (Province Of Alberta) Proposed
- Inner Ring Road and Highway Connectors

8.4 Air

Airports are a critical component of the Capital Region's public and industrial infrastructure and services. Passenger transportation has dominated air transportation growth in Edmonton for several decades, with increases in passenger levels expected to continue. However, air cargo demands are increasing as well: air cargo is one of the fastest growing modes of transportation for high priority, time sensitive shipments.

Edmonton is currently served by two airports: the City Centre and the International. The Edmonton City Centre Airport, in the north-central area of the city, serves as the medium-industrial aviation site. Passenger traffic is limited and managed under the Edmonton Airports Access Policy. On July 8, 2009, City Council approved staged closure of the City Centre Airport with a staged development of a Transit Oriented Development centered around LRT.

The Edmonton International Airport, located in Leduc County south of the city, accommodates the majority of air passenger and air cargo traffic in the Capital Region. Airport expansion plans are being developed to serve an increasing number of passengers and cargo shipments. The Port Alberta initiative is focused at this airport. It is very important for the City to work with the Capital Region to promote good roadway connections to this airport for seamless transfer of goods and services to and from the airport, and for convenient air passenger travel.

Good connections from the Edmonton International Airport to main areas in the city such as the Downtown and industrial areas is an important factor in attracting business, investment and tourism to Edmonton and the Capital Region. Transit service from the airport to the city is also being reviewed by the Capital Region Board.



Strategic Objective

8.1 The City will work with other jurisdictions, the Province and external service providers to ensure that Edmonton has a safe and efficient goods movement network that connects and interchanges well with other facilities.

Strategic Actions

- a. Maintaining a comprehensive network of truck routes, including Dangerous Goods Routes, that rely primarily on highways and arterial roadways.
 - b. Developing a plan to address efficient goods movement on the Inner Ring Road.
 - c. Protecting the integrity of major goods movement corridors through the encouragement of appropriate land use planning and control of direct access.
 - d. Giving priority to road construction projects that enhance goods and services movement and that facilitate access to developing and established business and industrial areas.
 - e. Working with rail companies and regulatory agencies to address operational issues and selectively upgrade rail crossings within the city.
 - f. Recognizing the importance of rail transportation to the economic health of the Capital Region and the importance of incorporating the impact of railways on future land development, roadway planning and traffic growth.
 - g. Recognizing the importance of air transportation (for passenger travel and goods and service movements) and multimodal facilities.
 - h. Working with agencies planning rail and air facilities to participate in facilitating the effective interchange of goods and services.
 - i. Conducting surveys of goods and services movements to understand the travel patterns within the city and Region to adequately plan for the needs of the community.
 - j. Consulting with industry and the public to resolve goods and services movement issues.
 - k. Working with the Province to recognize facilities of regional importance within Edmonton and secure funding for their improvement (such as Yellowhead Trail).
-



9.0 REGIONAL INTERFACE

Regional cooperative planning supports

TMP STRATEGIC GOALS:

- Transportation and Land Use Integration
- Access and Mobility
- Transportation Mode Shift
- Sustainability
- Well-Maintained Infrastructure
- Economic Vitality

MDP STRATEGIC GOALS:

- Sustainable Urban Form
- Integrated Land Use and Transportation
- Complete, Healthy and Livable Communities
- Urban Design
- Supporting Prosperity
- Working within our Region

Background

As Alberta's capital city and the largest urban centre within the Capital Region, Edmonton has become the focus of complex growth issues that demand a regional perspective. A new regional governance structure has been developed to address the impact of Alberta's recent economic boom and associated growth pressures on the Capital Region, as well as to protect the future economic viability of the Region.

The Capital Region Board was established by Provincial legislation in April 2008. This board is a decision-making body of 25 cities, towns, villages and counties including the City of Edmonton. The Board's mandate is to create a comprehensive plan to manage regional growth. The initial phase of the *Capital Region Growth Plan* was completed in June 2009. The *Capital Region Growth Plan* gives direction regarding land use, transportation and public transit, and will be binding on all municipalities in the Capital Region.

The Transportation Master Plan reflects the need and opportunity for more integrated planning and intermunicipal co-operation that the *Capital Region Growth Plan* brings. Growth within the Capital Region is generating changing demands for infrastructure and services and spurring

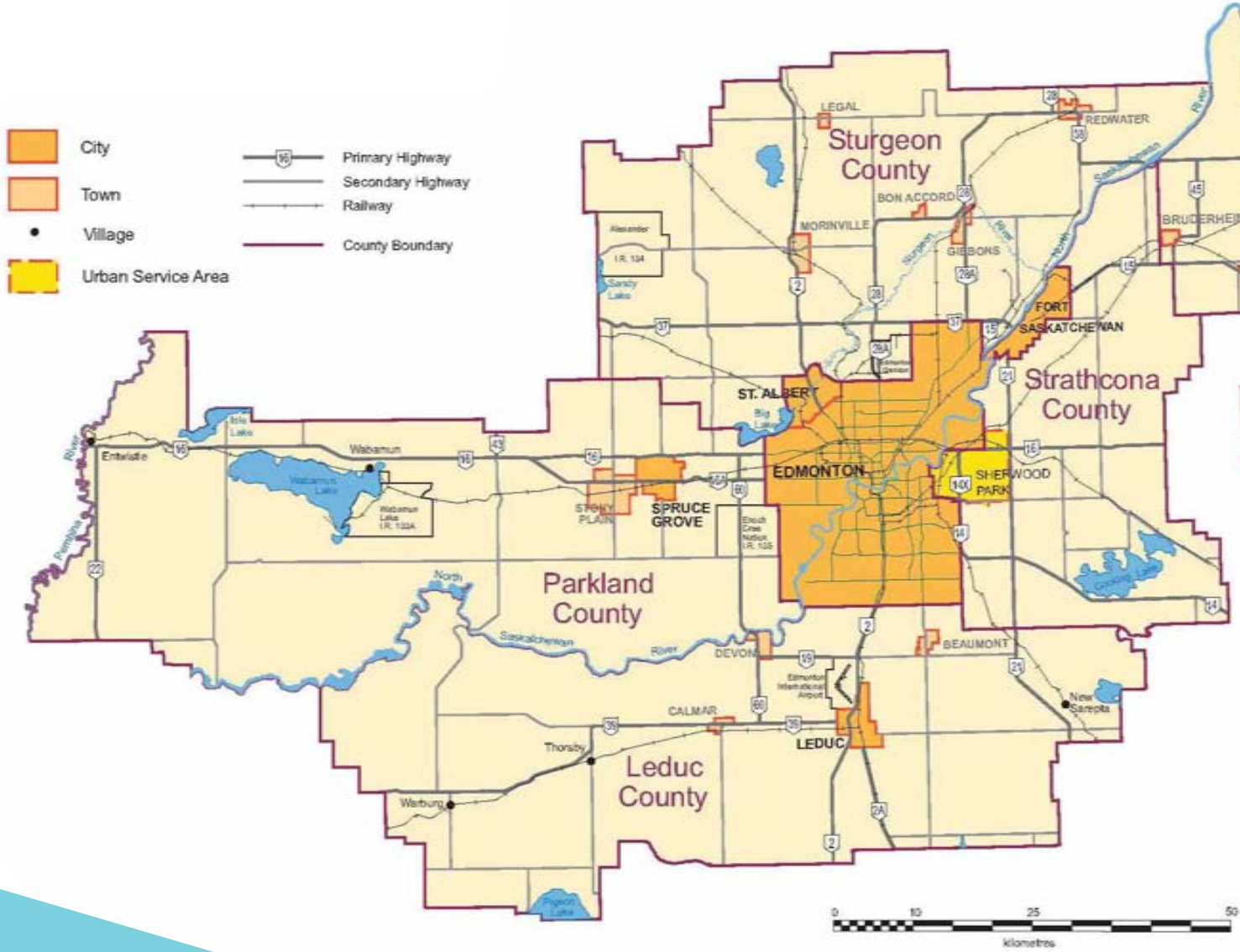
investment in support of population and employment growth. The City of Edmonton is responding to these pressures by addressing land use and transportation issues through an integrated approach to the Transportation Master Plan and the Municipal Development Plan. Together these plans propose to build on Edmonton's strengths as a major city and will show leadership in responding to growth pressures by accommodating growth in an environmentally progressive way, based on land use and transportation integration and more efficient use of infrastructure. This approach will establish a strong urban core for Edmonton within the Capital Region and will be the basis for an efficient regional transportation system. Coordinated planning of the regional transportation system will ensure that major regional employment areas and education centres are well-served by a range of travel modes.

Edmonton will support the *Capital Region Growth Plan* by planning within the regional context and anticipating integration with regional plans and infrastructure. A map of the Capital Region is shown in Figure 9.1.

A comprehensive, coordinated and integrated transportation system supports regional mobility, accessibility and economic vitality.



Figure 9.1 - Capital Region





9.1 Regional Public Transportation

Within the Capital Region, the City of Edmonton, the City of St. Albert and Strathcona County operate full transit systems. In addition, Edmonton currently provides commuter service on a contract basis to other small municipalities. While the existing transit systems coordinate and cooperate, there is no common mandate, vision, goal, or strategy, nor are there common fares or standards for the provision of public transportation within the Capital Region.

The Capital Region Board has recognized the importance of regional public transportation in supporting the well being of the Capital Region. The Board has set regional transit as one of four priorities for the *Capital Region Growth Plan* and is pursuing an initiative to establish a mechanism for the planning, prioritization and implementation of inter-municipal transit within the Region. The Capital Region Board's vision for the *Capital Region Intermunicipal Transit Network Plan (2009)* is: "The Region's transit network enables the Capital Region to achieve its economic, social, and environmental objectives by making transit a convenient and competitive mode of transportation."

The City of Edmonton will continue to participate in the development of a coordinated and integrated approach to regional transit. The focus of regional transit will be on centres or nodes where regional services, commercial development and more intensive land uses are concentrated. As the City of Edmonton plans extensions to LRT, alignments will be designed with the consideration for potential extensions to adjacent municipalities. Edmonton will work with its regional partners and the Province to identify corridors to be protected for future premium transit. Transit priority corridors will be considered in cooperation with neighbouring municipalities to improve transit service into the city. Edmonton will also encourage regional partners to undertake land use planning in support of transit, including the integration of transit and land use to create higher-density, walkable community nodes around major transit facilities.

Edmonton anticipates developing Park and Ride facilities at the extremities of LRT lines or at key transit centres, particularly within the Transportation Utility Corridor. These facilities will provide accessibility to LRT for those within the Capital Region with otherwise limited or no transit service. Park and Ride facilities on the outskirts of neighbouring municipalities may also encourage use of inter-municipal transit service or carpooling.

9.2 Regional Roads

The Province of Alberta is largely responsible for major roadway facilities within the Capital Region. However, there are a number of roadways under the control of the City that are of regional significance, as they serve the regional population. These consist of the Inner Ring Road (170 Street, Whitemud Drive, 75 Street/Wayne Gretzky Drive and Yellowhead Trail) and the Highway Connectors feeding the Inner Ring Road. Roadways of significance within the City of Edmonton that fall under the control of the Province include the Outer Ring Road (Anthony Henday Drive) and the Highway Connectors from Anthony Henday Drive connecting to highways within the Capital Region.

In addition to the existing Provincial Highways within the Capital Region, the Province is also considering the development of a Regional Ring Road. This will impact future traffic patterns in Edmonton as it will provide additional route options for regional trips.

Regional Commuter Traffic

While the Highway Connectors and Inner Ring Road are city facilities of significance used by the regional population, all roads within Edmonton are available for use by the regional population and will be affected by regional growth. The city's roadways will be managed as outlined in Chapter 7 - Roads, with a focus on managing the existing transportation system more effectively. This includes working with the Capital Region to develop coordinated Transportation Demand Management initiatives.

9.3 Other Modes

Inter-City Rail

The Province of Alberta is considering planning a high speed inter-city rail system between Edmonton and Calgary. This is in the preliminary stages of planning and definitive information is not yet available.

Rail

The rail network within the Capital Region is a significant aspect of the regional transportation system and it is expected to increase in importance for the logistics and distribution business sector over time. For effective rail movements, efficient inter-modal facilities and travel throughout the city and Capital Region are required. The City will work cooperatively with its regional partners to facilitate this. Within Edmonton, the City will encourage appropriate land use and access to inter-modal facilities and will prioritize grade separation of key rail crossings.

Air

Air passenger and cargo traffic is another major contributor to the regional transportation system. Increases in air traffic and the focus of Port Alberta at the International Airport amplify the need to provide good accessibility between the International Airport and major nodes within the Capital Region. Air passenger travel from the International Airport is an important part of our transportation network. As a result, the City will actively pursue and plan cooperatively with regional partners to improve both roadway and transit access from the Edmonton International Airport to the city's central core for personal air travel, business air travel and good and service movements.

Active Modes

Active transportation such as walking or cycling has great potential for trips between Edmonton and adjacent communities, particularly when combined with transit. It is important to coordinate the planning and implementation of a network of facilities for active modes that meets the needs of users throughout the Capital Region.

Strategic Objective

9.1 The City will work with neighbouring municipalities as part of the Capital Region Board to facilitate and implement a comprehensive, coordinated and integrated transportation system that supports the city and Capital Region's mobility, accessibility and economic vitality.

Strategic Actions

- a. Working constructively with the Capital Region Board as it prepares the Capital Region Growth Plan and abiding by the terms of the plan once it is formally adopted.
 - b. Cooperatively planning and implementing system improvements, including:
 - Transit network: Work with the Capital Region Board to coordinate and implement a region-wide system of inter-municipal transit service.
 - Land Use Planning: Encourage the development of high density nodes around transit facilities and protect corridors for future high-speed transit.
 - Rail: Encourage appropriate land use adjacent to rail and inter-modal facilities and prioritize grade separation of key rail crossings within the city.
 - Air: In cooperation with other agencies, improve connections to the International Airport for both roads and transit for air travel (personal and business) and goods and service movements.
 - Roads: In cooperation with the Province and the Capital Region Board, improve roads of regional significance, particularly the Inner Ring Road and Highway Connectors
 - Active Modes: Pursue opportunities for developing a network of regional multi-use facilities.
 - TDM: Ensure that TDM initiatives in Edmonton are coordinated with adjacent communities within the Capital Region.
 - c. Working with the Province to ensure the needs of the city will be considered in the planning and design of Provincial highway facilities.
-



10.0 ASSET MANAGEMENT AND MAINTENANCE

Asset management and maintenance supports

TMP STRATEGIC GOALS:

- Access and Mobility
- Sustainability
- Health and Safety
- Well-Maintained Infrastructure
- Economic Vitality

MDP STRATEGIC GOALS:

- Sustainable Urban Form
- Supporting Prosperity



Background

There is over \$33 billion of City-owned infrastructure all around us, providing the essential systems that maintain Edmonton's quality of life. The estimated replacement value of the City of Edmonton's transportation infrastructure - including roads, bridges, traffic and street lights, sidewalks and transit and LRT facilities - is about \$14 billion in 2008 dollars. These assets are continuously deteriorating, and will eventually require rehabilitation or replacement. With limited budgets and increasing demands on the transportation network, the City is challenged to manage its assets in a way that minimizes total life-cycle costs yet sustains expected levels of service and safety.

In 2008, the City of Edmonton estimated its infrastructure funding gap - the difference between funding needs and available funds - at about \$19 billion for the 2008-2017 period. Transportation infrastructure constitutes 60% of this funding gap (*Delivering the Goods*, 2008). Currently, over one third of Edmonton roads are in need of rehabilitation or reconstruction; another third of the City-owned bridges and bridge structures also need rehabilitation or replacement.

Clearly, the City is facing huge challenges with its infrastructure, and must focus on a proactive approach to ensure the long term viability of the transportation system.

A holistic approach to infrastructure investments supports the fiscal sustainability of the transportation system by considering life-cycle costs, adhering to a service life based asset management program and providing a robust operational maintenance program to facilitate year round transportation.



10.1 Asset Management

Asset Management is an integrated approach involving planning, engineering and finance to effectively manage existing and new municipal infrastructure to maximize benefits, reduce risk and provide satisfactory levels of service to local users and citizens. This approach emphasizes careful planning, identification of maintenance and repair requirements and optimizes investment through a mix of preventative maintenance, renewal and reconstruction.

Asset management may result in higher design, construction and repair standards so that equipment and facilities last longer, with reduced life-cycle maintenance costs. In some instances, increased funding for maintenance and minor repairs are prudent in order to prevent minor deterioration from becoming severe. Identification of all capital and operational costs of a facility is vital for determining the facility's true cost. Detailed life-cycle cost analysis (i.e. taking into account total costs over an asset's operating life) should occur during planning and procurement, so that options with the lowest overall long term costs can be identified.

An asset management approach which uses life-cycle cost analysis requires:

- An evaluation, maintenance/replacement and reinvestment system.

- A link between an asset's initial cost outlay and its on-going funding requirement in the City budget. This will ensure that critical maintenance and repair schedules and activities are adhered to and are not subject to compromise due to insufficient funding levels.
- A 'maintenance-priority' policy, which means that maintenance, operations and incremental improvements to existing infrastructure are given priority.

Assets

Roads and Sidewalks

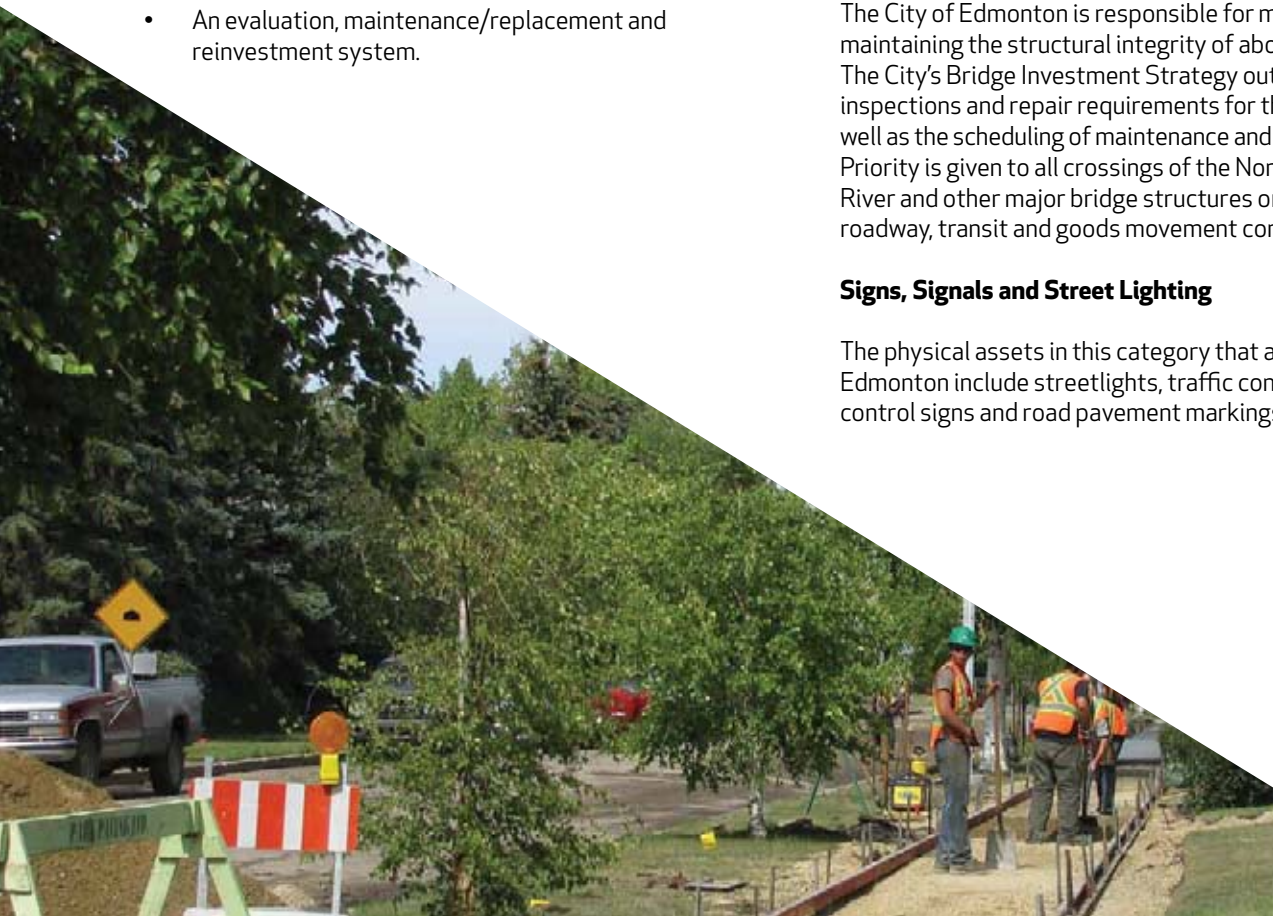
Edmonton's road network consists of more than 4,500 km of roadway. The City collects condition assessment information to monitor the condition of the roadways and sidewalks for comparison with their stage in service life and for monitoring performance. The City has developed a Pavement Investment Strategy that is used for asset management planning and budgeting to maintain roads in good or fair condition.

Bridges

The City of Edmonton is responsible for monitoring and maintaining the structural integrity of about 170 bridges. The City's Bridge Investment Strategy outlines the annual inspections and repair requirements for these structures as well as the scheduling of maintenance and major rehabilitation. Priority is given to all crossings of the North Saskatchewan River and other major bridge structures on the arterial roadway, transit and goods movement corridors.

Signs, Signals and Street Lighting

The physical assets in this category that are monitored in Edmonton include streetlights, traffic control signals, traffic control signs and road pavement markings.



Public Transportation

Edmonton Transit has a fleet of buses, LRT vehicles and vehicles serving persons with disabilities, facilities to store and maintain this fleet and other public transportation assets including transit centres, LRT stations and LRT track and signal systems.

In keeping with the Transportation Strategic Goal of sustainability, the asset management procedures for city infrastructure procurement and maintenance should consider ways to lessen the environmental impacts of the fleet and the buildings used to maintain it. For example, a sustainable fleet management plan could evaluate the potential benefits of fuel efficient vehicles to reduce both costs and environmental impacts such as vehicle emissions and non-renewable resource use.

Green Technology Opportunities

Due to the vast amount of infrastructure assets which are constructed, owned and maintained by the City, there are significant opportunities to reduce GHG emissions by using modern, energy efficient technology. Although these green technologies can have a higher upfront cost, when operational costs are considered over the lifespan of an asset there is the potential for a net savings to the city. For example, using LED traffic signals or high efficiency street lighting will reduce overall GHG emissions, while also reducing overall energy and maintenance costs.

Another option to substantially reduce GHG emissions from transportation is to consider purchasing green electricity offsets or constructing renewable electricity generating facilities from which key infrastructure such as the LRT can be operated.

Summary

While all of the transportation assets are monitored and programs are in place to identify maintenance requirements, adequate funding has not been available to carry out all maintenance programs. The condition of transportation assets affects mobility choices for Edmontonians. For example, an effective transit system is dependent upon adequate sidewalk connections and good roads on which to operate buses. Likewise, an effective cycling network requires a smooth surface free of snow and hazards.

Strategic Objective

10.1 The City will fully utilize asset management best practices to achieve a safe, enjoyable and well-maintained transportation system.

Strategic Actions

- a. Using an Asset Management Strategy that preserves infrastructure and minimizes the total life-cycle cost of implementation, operation and renewal while providing continuous, safe and reliable services.
 - b. Evaluating the full cost of operating, renewing and maintaining new infrastructure.
 - c. Planning and implementing infrastructure, including modifications, in a manner that recognizes implications for maintenance service level standards, operating practices and costs.
 - d. Recognizing implications of a winter city in design standards and asset management practices.
 - e. Coordinating with other agencies regarding construction, infrastructure renewal practices and planning details (i.e. pavement restoration practices).
 - f. Assessing green technology opportunities and using the technology when appropriate.
 - g. Assessing alternative materials, design standards and maintenance renewal practices to ensure that best practices are applied to life-cycle maintenance.
 - h. Developing a sustainable fleet replacement strategy for transit buses and LRT vehicles.
-

10.2 Maintenance

Infrastructure maintenance services essentially fall into two categories, activities for:

- Preservation of the service life of the asset (Preservation-related).
- Safety and enjoyment of users of the infrastructure (Operation-related).

The aim of both types of activities is to keep capacity at intended levels while keeping users moving safely. These types of preventive maintenance tend to reduce life-cycle costs as well as improve safety, reliability and travel conditions and can help to protect the environment.

Preservation of infrastructure service life involves repair and renewal. Infrastructure maintenance services related to safety and enjoyment include winter snow and ice control, and road and walkway lighting. Some activities are conducted for preservation, safety and enjoyment reasons. For example, sweeping and litter control will preserve the storm sewer capacity as well as improve travel conditions and the overall city image by establishing standards of cleanliness.

As a winter city, Edmonton's specified standards for snow clearing are key to ensure mobility and safety for all users of the transportation system. The Snow Removal Policy approved by City Council in 2007 outlines expected performance.

Active Transportation

Active transportation modes such as walking, cycling and using a wheelchair should be available year round for all citizens. In inclement weather, particularly during the winter months, using such modes can be a challenge. Therefore it is not enough to simply build facilities for active transportation, the City must also have a robust maintenance policy. The level of maintenance provided affects the accessibility for active modes. Sidewalks that are not cleared of snow make transit stops difficult to access and roads or bike lanes with gravel and debris in them make cycling difficult.

Strategic Objective

10.2 The City will have robust maintenance practices to facilitate year round transportation.

Strategic Actions

- a. Establishing written procedures that specify maintenance standards, schedule, quality control and follow-up that will be used for pedestrian, bicycle and multi-use facilities based on current best practices to encourage the safety of users.
 - b. Maintaining a high standard of cleanliness to encourage citizens to report pedestrian and bicycle facility maintenance needs, garbage, graffiti and other problems to 311.
 - c. Partnering with volunteers and sponsors to help patrol, clean and maintain public trails and related facilities.
 - d. Maintaining a Snow Removal Policy that outlines service standards to maintain mobility and safety for all users of the transportation system.
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11.0 IMPLEMENTATION

11.1 Implementation Plan

The Transportation Master Plan provides a long term view of the future transportation system. Policies contained in the TMP are strategic in nature. To maximize the effectiveness of the TMP, an Implementation Plan will be developed to outline specific actions that will be completed to meet the TMP's Transportation Strategic Goals and Strategic Objectives, and the Strategic Goals from the City of Edmonton's Strategic Plan 2009-2018.

Each Strategic Objective includes an expanded explanation under Strategic Actions to give an indication of the specific plans, programs and action items that will be included in the Implementation Plan and subsequently in the Transportation Department work programs. The Implementation Plan that will be updated every three years will outline the specific plans, programs and activities that will be carried out to achieve the Strategic Goals. The Implementation Plan will review evaluation criteria and consider a system for prioritizing projects based on the TMP Transportation Strategic Goals. A list of subsidiary plans, policies, strategies and standards that have been developed by the department to date are listed in Appendix 2. These plans along with the Strategic Actions and future plans will guide the projects in the Implementation Plan.

11.2 Progress Measurement

The success of the TMP as a long range plan depends on a number of variables. The City must be aware of its progress towards its Strategic Goals and Transportation Strategic Goals through an effective monitoring framework so that it can add or modify priorities as needed.

An effective monitoring framework for the TMP must closely consider the TMP Transportation Strategic Goals and Strategic Objectives, and manage their implementation. The monitoring framework will consist of a series of progress measures and outcomes that are reported yearly. Progress measurement requires a consistent approach for systematically collecting, analyzing, utilizing and reporting the measures. Measuring progress is sometimes difficult given that some data may not be available or accurate or the cost of obtaining some information may outweigh the benefits that the information could provide. Therefore information that is already collected and available should be utilized wherever possible, as this is a cost-effective, practical approach to further integrating progress measurement into transportation planning. Emphasis will be placed on strategic progress indicators that measure system-wide, long term changes that are easily understood by the public.



11.3 Updates

While the Transportation Master Plan has been developed in view of a horizon of the year 2040, it is expected that a review and update of the plan will be completed in approximately 10 years or as required depending on the development and alignment requirements with the other corporate strategic plans. The TMP Implementation Plan that will be developed will be updated on a three year cycle to reflect current trends, budget and financial changes and political direction. Progress measures that monitor progress towards achievement of the TMP Strategic Goals will be reported annually.

Strategic Objective

11.1 The City will develop an Implementation Plan and progress measures that will monitor progress towards achieving the Transportation Strategic Goals of the TMP and will inform the City's decision making process.

Strategic Actions

- a. Developing an Implementation Plan that outlines plans, programs and activities to be incorporated into the Transportation Department work program.
 - b. Developing and maintaining a comprehensive monitoring and reporting program of progress measures and outcomes.
-

GLOSSARY



Glossary

Accessibility	The ease of access to goods, services, activities, buildings and destinations.
Active Modes	See Active Transportation.
Active Transportation	Any mode of transportation by which people use their own energy to power their motion, including walking, running, cycling, cross-country skiing, skateboarding, snowshoeing, roller blading and use of a manual wheelchair.
Affordable Housing	Housing that requires no on-going operating subsidies and that 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.
Age Friendly Design	An age friendly built environment includes a safe pedestrian environment, safe street crossings, easy to access shopping centres, a mix of housing choices, nearby health centres and recreational facilities. Additional age friendly urban design features could include non-slip materials on footpaths, adequate street and park furniture and awnings for weather protection, legible and pedestrian scale signage, well-lit walking areas, and the incorporation of Crime Prevention Through Environmental Design principles.
Alberta's Industrial Heartland	A major processing centre for the petroleum, petrochemical and chemical industries located in Strathcona County, the City of Fort Saskatchewan, Sturgeon County and Lamont County.
Alternative Modes (or Alternate Modes)	Modes of transportation that are alternatives to travel by a single occupancy vehicle, including riding transit, walking, cycling, and carpooling.
Anthropogenic Greenhouse Gases	Anthropogenic greenhouse gases can be attributed directly or indirectly to human activity. Under the United Nation's Climate Change Convention, greenhouse gases that have identifiable anthropogenic sources are inventoried and reported. They include: carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphurhexafluoride (SF ₆).
Area Traffic Management	Processes and techniques to preserve neighbourhood livability by mitigating undesirable effects of vehicle travel including excessive volumes and speeds, aggressive driver behaviours and the creation of unfavourable conditions for walking, cycling, and other active transportation.
Arterial Roads	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.
Asset Management	An integrated approach involving planning, engineering and finance to effectively manage existing and new municipal infrastructure to maximize benefits, reduce risk and provide satisfactory levels of service to local users and citizens.
Barrier-free	A design characteristic that maximizes accessibility for persons with physical or cognitive difficulties.
Bike Lane	A designated roadway lane for cyclists only including 'contra-flow lanes'.

Biodiversity	The number and variability of organisms found within a specified geographic region; this includes diversity within species, between species and of ecosystems.
Built Environment	Artificially created fixed elements, such as buildings, structures, devices, and surfaces, that together create the physical character of the area.
Bus Lane	A roadway lane dedicated for use by public transit vehicles that may be open to mixed traffic at some hours of the day or days of the week, and that may also be open to other vehicles such as taxis or bicycles.
Capacity (Roadway)	Maximum hourly rate at which vehicles can reasonably be expected to pass a given point given prevailing roadway, traffic, and control conditions.
Capital Region	Encompasses over 1.2 million hectares (close to 12,400 square kilometres) and is home to 1.09 million people. Please refer to Figure 9.1 for a geographic description.
Capital Region Board	A decision-making body made up of 25 municipalities: Edmonton, Beaumont, Bon Accord, Bruderheim, Calmar, Devon, Fort Saskatchewan, Gibbons, Lamont, Lamont County, Leduc, Leduc County, Legal, Morinville, New Sarepta, Parkland County, Redwater, St. Albert, Spruce Grove, Stony Plain, Strathcona County, Sturgeon County, Thorsby, Wabamun and Warburg. The Board's mandate is to create a comprehensive plan to manage regional growth: the "Capital Region Growth Plan."
Carbon Footprint	The total set of GHG (greenhouse gas) emissions converted to units of carbon dioxide equivalent caused directly and indirectly by an individual, community, organization, event or product.
Carpool/Rideshare	Shared use of a motor vehicle by two or more persons to make a trip, when they would otherwise travel separately.
Central Core	The central core consists of the Downtown and the neighbourhoods and areas that have a strong inter-relationship with the Downtown. These are Boyle Street, McCauley, The Quarters, Central McDougal, Queen Mary Park, Oliver, University of Alberta, Garneau, Strathcona, Cloverdale, Riverdale and Rossdale. These areas have different characters and development expectations than mature neighbourhoods.
Climate Change	A change in the state of the climate that can be identified using statistical tests by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity.
Collector Roads	Provide neighbourhood travel between local and arterial roads and direct access to adjacent lands. Buses generally operate on collector roads within neighbourhoods.
Community	The human and social activity of a neighbourhood, district or city as a whole.
Community Traffic Management	See Area Traffic Management.
Complete Community	A community that is fully developed and meets the needs of the local residents through an entire lifetime. Complete communities provide certainty to residents on the provision of amenities and services and include a range of housing, commerce, recreational, institutional and public spaces. A complete community provides a physical and social environment where residents can live, learn, work and play.

Complete Streets	Streets designed to enable safe and efficient access for people using a variety of transportation modes (automobile, truck, transit, walking, wheelchair, jogging, cycling) and for users with varying levels of physical and cognitive abilities.
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.
Contra-flow Lane	A designated lane allowing travel by transit vehicles or cyclists in the direction opposite to the primary vehicle traffic flow on a one-way roadway.
Corporate Strategic Goal	A general statement describing a desired end state, ideal, condition or quality to be sought in Edmonton's physical, social or economic development that will help achieve Council's vision and 10 year city-wide strategic goals.
Corporate Strategic Objective	A specific statement of what the corporation (City of Edmonton) needs to accomplish in order to achieve a strategic goal. Objectives should be achievable within the time frame of the plan.
Corporate Strategic Action (or Initiative)	A specific statement of how the corporation (City of Edmonton) intends to pursue a strategic objective.
Crime Prevention through Environmental Design (CPTED)	A pro-active crime prevention strategy that focuses on an analysis of how the features of the environment and the policies that govern its management and use can constrain criminal activity. CPTED strategies are based on the premise that the proper design and effective use of the built environment can lead to a reduction in the incidence and fear of crime and improve the quality of life. Emphasis is placed on the physical environment, productive use of space, and behaviour of people to create environments that are absent of environmental cues that cause opportunities for crime to occur.
Dangerous Goods Route (DGR)	A route which is part of the City's Truck Route system, designated for heavy vehicles carrying specified dangerous goods.
Dedicated Travel Lane	A roadway lane designed for the exclusive use of buses, other authorized vehicles and/or bicycles.
Delay (Vehicle)	The time lost by a vehicle due to causes beyond the control of the driver. Delay includes operational delay due to impedances caused by congestion and fixed delay caused by traffic control devices.
Density	The number of dwelling units, square metres of floor space, or people per acre or hectare of land.
Developing Neighbourhood	Neighbourhoods that have an approved neighbourhood structure plan, have some or most of the residential construction completed and have identified unfunded civic services and facilities or funded civic services and facilities under development.
Disabled Adult Transit Service (DATS)	A City of Edmonton door-to-door public transportation service for registered, pre-booked passengers 16 years of age or older who cannot use conventional transit because of a physical or cognitive disability. DATS operates as a shared ride public transit service that runs parallel to Edmonton Transit's conventional bus and LRT services.
Downtown	The area within the boundaries of the current City of Edmonton Downtown Plan.

Eco-Industrial Park	A community of manufacturing and service enterprises located in close proximity, where members seek enhanced environmental, economic and social performance through collaboration in managing resources, environmental and social issues.
Ecological Footprint	A measure of how much biologically productive land and water we use to produce the resources we consume and to absorb our waste. Global trade means that our footprint includes land and water from all over the world.
Economic Development	Any effort or undertaking which aids in the growth of the economy.
Established Neighbourhood	Mature neighbourhoods as defined by the mature neighbourhood overlay, neighbourhoods developed since 1971 with convenient access to a wide range of services and facilities.
Exclusive Right-of-way	Transportation right-of-way for the exclusive use of a particular mode. In Edmonton, the LRT operates in exclusive right-of-way.
Family Oriented Housing	Housing that is suitable for families with young children. This form of housing includes the following features: ground orientation (direct access to the street); clearly defined private open space; access to adequate storage, including bulk storage and bicycle storage; and adequate dwelling area for two or more bedrooms which are separate from the living room and kitchen.
Frequency (Transit)	The number of transit units (buses or trains) on a given route or line, moving in the same direction, that pass a given point within a specified interval of time, usually 1 hour.
Future Neighbourhood	Areas identified for future residential development that do not have an approved Area Structure Plan, servicing concept design brief or Neighbourhood Area Structure Plan.
Goods Movement	The transportation of goods (freight or commodities) by road, rail or air.
Granular Trail	Generally describes a multi-use trail, often in parkland, constructed of granular material (gravel).
Greenhouse Gas (GHG)	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. (See also Anthropogenic Greenhouse Gases)
Health	A state of complete physical, mental and social well being and not merely the absence of disease or infirmity.
Healthy Communities	A community that is continuously creating and improving those physical and social environments and expanding those community resources that enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential.
High Occupancy Vehicle (HOV) Lane	A roadway lane dedicated for use by carpools (i.e. vehicles meeting a minimum occupancy criteria, usually two or three persons) and buses. May be open to mixed traffic at some hours of the day or days of the week, and may also be open to other vehicles such as taxis or bicycles.
Highway Connectors	Strategically located, higher standard arterial roadways connecting the Inner Ring Loop to the Outer Ring Road and the provincial/national highway system and fall under the Highway Penetrator Agreement.

Highway Corridor Areas	The land on both sides of major regional highways. The width and extent of these areas may vary depending on the issues and will be determined through consultation with our adjacent municipal neighbours and Alberta Transportation and Utilities.
Infill Development	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.
Infrastructure Gap	The difference between the capital needs of an organization and the funding available to address the organization's infrastructure rehabilitation and growth requirements.
Infrastructure (Municipal)	The physical assets developed and used by a municipality to support its social and economic activities. The City of Edmonton's infrastructure inventory includes such diverse assets as drainage, roads and right-of-way infrastructure, parks and green spaces, buildings, fleet vehicles, LRT and transit facilities, buildings, traffic control infrastructure, recreation facilities, computer networks, affordable housing and library resources.
Inner Ring Road	A network of higher standard arterial roadways intended to cater to cross-town movements within Edmonton city limits, together forming a connected loop within the city (Yellowhead Trail, 75 Street, Whitemud Drive, 170 Street).
Innovation	One of four Principles defined in the Edmonton Strategic Plan, 2009-2018. Defined as a planning approach and operational culture within a municipality which encourages and enables continuous improvement and the exploration and adoption of new techniques, technologies, products and ways of operating in order to improve results and lead progressive change.
Integration	One of four Principles defined in the Edmonton Strategic Plan, 2009-2018. Defined as a holistic view of strategic planning that acknowledges the interrelated and inter-dependent reality of complex urban environments. Goals and priorities set for different elements in urban planning are as interrelated ecosystems and considered in terms of how they impact, support and drive each other.
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.
Inter-modal Transportation Facility	A transportation facility where transfers between modes can be made. For instance, freight inter-modal facilities feature a rail yard where containers are transferred between trains and trucks.
Intermunicipal Development Plan	A statutory plan jointly prepared by neighbouring municipalities to establish strategic policies and identify issues of mutual interest that overlap municipal boundaries.
Land Use	The various ways in which land may be used or occupied.
Level of Service (LOS)	An indicator of the quality of operating conditions for the transportation system that may be applied to cycling or walking facilities (to reflect connectivity, convenience and comfort), transit service (to reflect speed, reliability, frequency and passenger comfort) or roadways (to reflect the ratio of vehicle demand to roadway capacity and resultant delay).
Light Rail Transit (LRT)	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.

Livability

One of four Principles defined in the Edmonton Strategic Plan, 2009-2018. Defined as an interrelated set of factors that influences people to choose a place to live and reinforces their sense of well being there. The concept of livability is based on the knowledge that the economic and social life of the community is intimately linked to its natural and built environment, and together these elements impact social and cultural goals. Livability factors include:

- **Social capital:** The human capital of the people within a city in all their diversity and potential, together with an urban culture that reflects people's social values and makes them feel included and respected.
- **Amenities:** A clean and well-designed community that allows many choices of lifestyle and includes open and green spaces, respect for historic features and intangibles such as a sense of place and fostering community character.
- **Economic prosperity:** Sustainable economic and employment opportunities.
- **Safety:** A sense of personal and community safety and overall social order.
- **Access to social services and infrastructure:** such as healthcare, education, recreation and arts and culture.
- **Environment:** An environment sustained for current and future generations through responsible practices. Clean air and water, access to local food supplies and the healthy co-existence of natural and urban environments.
- **Affordability:** The ability of people of all incomes to have access to affordable core needs such as housing, food, transit and core social services. The recognition as well that affordability of other amenities affects the overall competitiveness of a city in attracting and retaining residents and impacts the quality of life of those who live there.
- **Ease of mobility and movement:** Accessible roads and transportation modes that meet the requirements and choices of society, communities and people of all ages and needs.
- **Participation:** Political and democratic processes that allow people to participate in decisions that affect them.

Local Roads

Provide direct access to adjacent lands and serve neighbourhood travel.

Main Streets Concept

A principle street that contains a dynamic mix of uses and is the focal point of an area. The street should consist of finer grid (narrower) properties fronting directly onto a generous public sidewalk designed to create an enjoyable pedestrian environment.

Maintenance (of Infrastructure)

The set of activities required to keep a component, system, infrastructure asset or facility functioning as it was originally designed and constructed. Maintenance refers to all actions necessary for retaining an asset as near as possible to its original condition, including repair but excluding renewal (rehabilitation or replacement).

Major Trip Generator

A land use which is predicted to generate a high number of total trips to and from a site relative to other land uses.

Mature Neighbourhoods

Edmonton's mature neighbourhoods are the neighbourhoods within the Mature Neighbourhood Overlay (MNO). These neighbourhoods are well-established and were effectively built out by 1970. These areas are primarily residential.

Mature Neighbourhood Overlay	The Mature Neighbourhood Overlay is a feature of the Zoning Bylaw and is used to ensure that new development in Edmonton's mature residential neighbourhoods is sensitive in scale to existing development, maintains the traditional character and pedestrian-friendly design of the streetscape, ensures privacy and sunlight penetration on adjacent properties and provides opportunity for discussion between applicants and neighbouring affected parties when a development proposes to vary the Overlay regulations.
Mixed Use Development	Development that includes a mixture of different land uses such as: residential, commercial, institutional, recreational, and public spaces. It generally refers to development where different uses are not only combined on the same site but also within buildings themselves. An example might include residential apartments located above a commercial space on the first floors of a building.
Mobility	Refers to the movement of people and goods and reducing the constraints on physical movement by decreasing travel times and increasing transportation options. Mobility is higher when average travel times, variations in travel times, and travel costs are low.
Mobility Challenged	Includes not only people with physical, sensory or cognitive disabilities, but those who are elderly and people with young children.
Mode Share	The percentage of person-trips made by one travel mode, relative to the total number of person-trips made by all modes.
Mode Shift	The shift away from single occupant vehicle use and dependency to an increased variety of transportation mode usage for various types of trip.
Multi-Use Trail (MUT)	A facility for active transportation modes (including walking, wheel chair use, jogging, cycling, and in-line skating) which is generally constructed to a wider, asphalt standard, but may be concrete or granular.
Municipal Development Plan (MDP)	A statutory plan which guides the future growth and development of a municipality.
Municipal Government Act (MGA)	The primary provincial legislation that governs municipalities. The MGA sets out the legislated roles and responsibilities of municipalities and municipal officials.
Neighbourhood	A residential area with an appropriate mix of housing types with convenience-type commercial facilities and where appropriate, schools or park facilities.
Noise Attenuation	Using facilities such as earth berms, screen fences (typically wood), and/or noise walls (typically concrete, wood, metal) to reflect traffic noise.
Off-Site Parking	Vehicle parking stalls that are used to meet the Zoning Bylaw vehicle parking requirements for a proposed development but are not located within the development. These stalls are usually within 120 metres of the development and can include on-street stalls or stalls located in a parking facility.
On-Site Parking	Vehicle parking stalls provided within the development site that are privately owned and maintained.
Outer Ring Road (Anthony Henday Drive)	A high standard Provincial roadway in the Transportation and Utility Corridor, forming a connected ring around the outer fringe of the city.
Park and 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 and Ride are typically located at transit centres or rail transit stations and can range from surface lots to multi-storey parking structures.

Peak Period	A period of high person-trip demand, generally on weekday mornings and afternoons, which includes what are commonly referred to as “rush hours”.
Pedestrian Friendly	See Walkable.
Pedestrian Oriented	See Walkable.
Planned Neighbourhood	Areas that are identified for future residential development and have an approved area structure plan or an approved servicing concept design brief, but no approved neighbourhood structure plan.
Policy Statement	A statement describing a preferred course of action regarding a particular issue or situation.
Port Alberta	An initiative to develop a strategy to optimize Greater Edmonton’s road, rail and runway infrastructure as a gateway for cargo transportation for North America and Asia.
Premium Transit	Express service transit routes with a limited number of stops connecting major destinations and transit interchange points and is characterized by high service frequencies, higher than average system speed, and improved service reliability. Premium Transit can be provided by rail or bus. Premium bus service could act as a precursor to LRT in corridors identified for LRT expansion.
Progress Measure	A meaningful, quantitative indicator of how well the strategic goal is being achieved.
Progress Measurement	Monitoring of indicators that enable an understanding of conditions, actions and impacts that describe progress towards key objectives and are used to inform decision making.
Public Transportation	A transportation system that transports the public. In Edmonton, Edmonton Transit is the public transportation body, and the system is comprised of bus, DATS, and LRT services. In Edmonton, the Vehicle for Hire Commission oversees the operation of taxis and related businesses.
Public Space	Space on public or private property within an establishment or outside an establishment, which is open to the public.
Queue (Vehicles)	A lineup of vehicles, generally stopped at an intersection or access.
Regional Connections	Connections between the transportation systems of the City of Edmonton and the surrounding region.
Rehabilitation (of Infrastructure)	The action of restoring a component, system, infrastructure asset, or facility to a former condition or status.
Renewal (of Infrastructure)	Investment in existing infrastructure to restore to its former condition and may extend its service life, which may include replacement of individual components as they age or become obsolete. Capital investment in renewal extends the period of service potential but does not change the replacement value, and so does not increase the size of the infrastructure asset portfolio.
Repair (of Infrastructure)	The action of restoring a component, system, infrastructure asset, or facility to its former condition after failure or damage. Repairs do not extend asset life or expand capacity and do not increase or improve functionality.
Replacement (of Infrastructure)	The action of replacing a component, system, infrastructure asset or facility.
Safety	Freedom from the occurrence or risk of injury, danger or loss.

Security (Personal Security)	The real or perceived sense of personal security including the condition of being protected from criminal activity such as assault, theft, and vandalism.
Service Reliability (Transit)	The variability in travel times for a transit route, usually measured as a percentage of on-time arrivals.
Shortcutting	Through traffic having no origin or destination within a neighbourhood, usually where drivers perceive a shortcut route as shorter in time or distance than the alternative arterial route.
Smart Choices for Developing Our Community	<p>A program comprised of a group of six initiatives to change the way Edmonton grows and develops, so that the city will be more fiscally and environmentally sustainable. The initiatives are:</p> <ol style="list-style-type: none"> 1. neighbourhood reinvestment 2. residential infill 3. transit-oriented development 4. walkability 5. urban design 6. redevelopment of older commercial and industrial lands.
Statutory Plan	A plan adopted by municipal bylaw under the authority of the Municipal Government Act. Examples of a statutory plan are: an intermunicipal development plan, a municipal development plan, area structure plans and area redevelopment plans.
Streetscape	All the elements that make up the physical environment of a street and define its character, including: the road, boulevard, sidewalk, building setbacks, height and style. It also includes paving treatments, trees, lighting, pedestrian amenities and street furniture.
Sustainability	One of four Principles defined in the Edmonton Strategic Plan, 2009-2018 and defined as a way of living which meets the needs of the present and does not compromise the ability of future generations to meet their own needs. It requires an integrated, holistic view of urban environments and defines sustainability in the context of interrelated ecosystems encompassing environmental, financial, cultural and social sustainability, and recognizes the long term and indirect impacts of current decisions.
Traffic Calming	The elements of a streetscape that are designed to slow the speed of traffic.
Transit	See Public Transportation.
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 as illustrated in Figure 4.1. The bus routes serving these areas operate with at least 15 minute frequency during weekday peak, weekday midday 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 pedestrian traffic.
Transit Centre / Transit Station	Locations where multiple buses (transit centres) and/or LRT trains (transit stations) can stop simultaneously to allow transfers between routes.
Transit Corridor	A corridor along which transit rail vehicles or buses operate on street in dedicated lanes or mixed traffic, depending on the transit service provided.
Transit Node	Areas located at transit centres, LRT stations, or in Downtown Edmonton where multiple transit routes and services converge, providing high levels of transit service to multiple destinations.

Transit Oriented Development (TOD)	<p>Intensified development around LRT stations and transit centres with progressively lower density development spreading outwards from the centre. TOD creates attractive, livable and compact neighbourhoods with housing, jobs, shopping, community services and recreational opportunities all within convenient walking distance of a node. All TODs are not the same, each development has a unique context and may serve different purposes. Some intensified and mixed use development will also occur along Transit Avenues at a lower level of magnitude. TOD features include:</p> <ul style="list-style-type: none"> • medium to higher density residential development adjacent to the station • progressively lower density development spreading outwards from the centre • commercial and community facilities near the station • high quality architecture and landscaping • buildings “address” the street and have active frontages • an urban park or public square near the station • layouts designed to maximize pedestrian and bicycle access to the station • parking provided behind or underground buildings, with some on-street parking
Transit Priority Measures	<p>Strategies used to increase transit operating speeds and/or travel time reliability, particularly for transit services in mixed traffic, and includes traffic signal priority, bus activated signals, queue jumps, queue bypasses, and bus lanes as well as exclusive right-of-way options such as LRT corridors.</p>
Transportation Corridor	<p>A linear or continuous corridor that allows the passage or conveyance of vehicles and/or people. A transportation corridor can include any of the following:</p> <ul style="list-style-type: none"> • Arterial roads and highways • Railways • Transit rights-of-way for buses and light rail • Multi-use Trail corridors along utility rights-of-way
Transportation Demand Management (TDM)	<p>A range of strategies that encourage individuals to reduce the number of trips they make, to travel more often by alternatives to driving alone, to travel outside peak periods and to reduce the length of their trips.</p>
Transportation Facility	<p>A facility or infrastructure related to the city's transportation system, including roads, bridges, traffic and street lights, sidewalks, LRT vehicles, garages and maintenance buildings.</p>
Transportation Master Plan	<p>Establishes a framework for how the City of Edmonton will address its future transportation needs and meets the requirements of the Province of Alberta's <i>City Transportation Act</i> to prepare a comprehensive transportation study report for the development of an integrated transportation system designed to service the needs of the entire city.</p>
Transportation System Bylaw	<p>Designates the transportation system, including arterial roads and light rail transit, and meets the requirements of the Province of Alberta's <i>City Transportation Act</i> that City Council shall by bylaw establish a transportation system in accordance with the transportation study report (i.e. Transportation Master Plan) and the bylaw shall designate the transportation system.</p>
Transportation System Management (TSM)	<p>A range of strategies that maximize the efficient operation of the overall transportation system through operational measures and localized infrastructure modifications for the benefit of all modes of travel.</p>
Transportation Utility Corridor (TUC)	<p>A ribbon of land around the city, under the direct control of the Province of Alberta, which is intended to be used for the Outer Ring Road (Anthony Henday Drive), power lines, and sewers.</p>

Travel Mode	The selected method of travel, such as automobile use (driver or passenger), public transportation (bus, LRT, DATS), or active transportation (including walking, wheel chair use, jogging, cycling, and in-line skating).
Truck Route System	A network of designated roadways that have been designed and constructed to permit and withstand use by heavy trucks.
Universal Design	The design of buildings, streets, services, transportation systems, and public spaces that accommodate the widest range of potential users. This is accomplished by removing barriers for those with mobility, visual and hearing impairments, and accounting for other special needs. The Seven Principles of Universal Design are (1) Equitable Use, (2) Flexibility in Use, (3) Simple and Intuitive Use, (4) Perceptible Information, (5) Tolerance for Error, (6) Low Physical Effort, and (7) Size and Space for Approach and Use.
Urban Design	The art of arranging the external physical environment to support human activities. It evolves from many public and private decisions, made over time, in land use planning, architecture, engineering and development fields. Urban design creates a visually appealing urban environment. It plays a fundamental role in creating urban and natural environments that foster strong local business, create strong communities, and contribute to the quality of life.
Urban Form	The physical layout and design of the city.
Urban Traffic Noise Policy	Thresholds under which daily noise due to vehicular traffic on major transportation facilities is deemed to be acceptable, and above which the policy designates the responsibility for noise attenuation.
Utilities	Facilities for gas, electricity, telephone, cable television, water, storm and sanitary sewer.
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.
Walkable	An environment designed to make travel on foot convenient, attractive, and comfortable for people of various ages and physical or cognitive 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.
Winter City	A concept for communities in northern latitudes that encourages them to plan their transportation systems, buildings, and recreation projects around the idea of using their infrastructure during all four seasons, rather than just two seasons (summer and autumn).
Zoning Bylaw	The bylaw that divides the city into land use zones and establishes procedures for processing and deciding upon development applications. It sets out rules which affect how each parcel of land in the city may be used and developed. It also includes a zoning map.

APPENDICES



Appendix 1: City Vision, Principles and Strategic Goals

City Vision

A creative description of Edmonton's future, the vision guides our decisions, helps us set direction and encourages us to align our priorities as we work to make Edmonton the city we want it to become in 2040.

Take a river boat from one shore of the world's largest urban park to the other; from the university to the legislature. From the water, look up and consider the skyline, the bustling core and the towers and urban villages to the east and west. The people on the sidewalks and trails, from First Nations to new Canadians, linked by a common purpose — to learn, to prosper, to celebrate. Take the LRT in any direction from here and you'll be in the heart of somewhere special. Welcome to Edmonton, the capital of Alberta, a northern city of art and ideas, research and energy.

- Edmonton is an energy city. Energy drawn from the ground and from above; from the sun and wind. But the true power of Edmonton is the democratic spark in its people.
- Edmonton is a city of design — urban design, architectural design and environmental design. Walk its safe, leafy neighbourhoods, ride its efficient and accessible transportation system. The city has grown up; now we're building smarter.
- Edmonton links the continent with the north and with Asia. This cooperative regional economy is powerful and diverse, oriented toward the future. Visit the universities and colleges, the humming research parks, the downtown office towers: Edmonton is a destination for advanced technologies, health care and green energy.
- Edmonton is a recreation city, an arts city. It is a city that embraces all seasons. Run, ride or ski on its trails and fields, cheer in its arenas and stadiums. Enjoy the museums, galleries, clubs and theatres. Read its novels, watch its films. Spend an hour or a week in the glorious North Saskatchewan River Valley, the world's largest preserved park.
- Edmonton is a city of many cultures, educational opportunities and all political and social orientations; yet its citizens are inspired by a shared vision and the certainty that this city on a river is one of the most special places on earth.

City Strategic Plan's Principles

The City of Edmonton Strategic Plan - 2009-2018 provides a focus to the City's efforts to deliver the greatest value of services and infrastructure that are most important to Edmontonians, while managing the opportunities and challenges of our rapidly growing and changing city.

Four principles underpin the development and implementation of the City of Edmonton Strategic Plan:

Integration

A holistic view of strategic planning that acknowledges the interrelated and inter-dependent reality of complex urban environments. Goals and priorities set for different elements in urban planning are as interrelated ecosystems and considered in terms of how they impact, support and drive each other.

Sustainability

A way of living which meets the needs of the present and does not compromise the ability of future generations to meet their own needs. Urban planning takes an integrated, holistic view of urban environments and defines sustainability in the context of interrelated ecosystems encompassing economic, social, environmental and cultural sustainability. The principle of sustainability also includes financial sustainability, ensuring urban planning recognizes and addresses resource constraints and capacities.

Livability

An interrelated set of factors that influences people to choose a place to live and reinforces their sense of well being there. The concept of livability is based on the knowledge that the economic and social life of the community is intimately linked to its natural and built environment, and together these elements impact social and cultural goals.

Livability factors include:

- **Social capital:** The human capital of the people within a city in all their diversity and potential, together with an urban culture that reflects people's social values and makes them feel included and respected.
- **Amenities:** A clean and well-designed community that allows many choices of lifestyle and includes open and green spaces, respect for historic features and intangibles such as a sense of place and fostering community character.
- **Economic prosperity:** Sustainable economic and employment opportunities.
- **Safety:** A sense of personal and community safety and overall social order.
- **Access to social services and infrastructure:** such as health care, education, recreation and arts and culture.
- **Environment:** An environment sustained for current and future generations through responsible practices. Clean air and water, access to local food supplies and the healthy co-existence of natural and urban environments.

- **Affordability:** The ability of people of all incomes to have access to affordable core needs such as housing, food, transit and core social services. The recognition as well that affordability of other amenities affects the overall competitiveness of a city in attracting and retaining residents and impacts the quality of life of those who live there.
- **Ease of mobility and movement:** Accessible roads and transportation modes that meet the requirements and choices of society, communities and people of all ages and needs.
- **Participation:** Political and democratic processes that allow people to participate in decisions that affect them.

Innovation

A planning approach and operational culture within a municipality which encourages and enables continuous improvement and the exploration and adoption of new techniques, technologies, products and ways of operating in order to improve results and lead progressive change.

City Strategic Plan's 10-Year Goals

To focus the City's efforts on achieving the Vision, Council identified six 10-year Strategic Goals. These goals will direct long term planning for the City and help set priorities for the delivery and improvement of services, programs and infrastructure.

The 10-year Strategic Goals are:

Preserve and Sustain Edmonton's Environment

In partnership with its citizens, businesses and institutions, Edmonton is the nation's leader in setting and achieving the highest standards of environmental preservation and sustainability both in its own practices, and by encouraging and enabling the practices of its partners.

Improve Edmonton's Livability

Edmonton is one of Canada's most livable cities because it is welcoming to all; is safe and clean; fosters its heritage and supports its arts and multicultural communities; encourages active lifestyles through recreational opportunities; and engages its citizen's in the City's Vision and directions.

Transform Edmonton's Urban Form

Edmonton has increased its density and optimized existing infrastructure while maintaining and revitalizing strong, vibrant neighborhoods; ensuring high standards of urban design; adopting best land use practices; and preserving natural areas and public spaces.

Shift Edmonton's Transportation Mode

Modes of transportation shift to "fit" Edmonton's urban form and enhanced density while supporting the City's planning, financial and environmental sustainability goals.

Diversify Edmonton's Economy

Edmonton is recognized as an economic powerhouse, maximizing the diversity of its economic advantages, including its location as Port Alberta and as a portal to the north; as the urban centre of regional industrial development; as a knowledge and innovation centre for value-added and green technologies and products; and as a place that attracts and supports entrepreneurs.

Ensure Edmonton's Financial Sustainability

Edmonton is financially sustainable, with the revenue resources required to support its plans and provide the infrastructure performance and services citizens need.

Aligning with the City Vision

The City of Edmonton is currently aligning its strategic planning processes to ensure an integrated and holistic approach toward city building over the next three decades. There are currently six corporate plans that work together to achieve the City Vision.

- *The Way We Grow:* The Municipal Development Plan - This plan establishes Council's policy direction for future land development and redevelopment decisions. It parallels the 30 year timeframe of the TMP.
- *The Way We Green:* Edmonton's Environment Plan - This document is an update of the EcoVision Edmonton Plan. EcoVision Edmonton outlines Edmonton's vision for an environmentally sustainable city. It includes the Environmental Strategic Plan and the Natural Connections Strategic Plan.
- *The Way We Live:* Edmonton's People Plan - This plan will guide future sustainable investment in people services and programs that contribute to Edmontonians' health, safety and social well being.
- *The Way We Prosper:* Edmonton's Plan to Diversify and Maximize the Economy
- *The Way We Finance:* Edmonton's Financial Sustainability Plan

Each of these plans aligns with The City Vision and contains specific information on each corporate identity. Each corporate plan uses Corporate Strategic Goals, Corporate Strategic Objectives, Corporate Strategic Actions and Policy Statements where appropriate (see below for definitions). The Strategic Goals, Objectives, Actions and Policies in each plan align with the City Vision but are unique to each Corporate Planning Document.

Corporate Strategic Goal	A general statement describing a desired end state, ideal, condition or quality to be sought in Edmonton's physical, social or economic development that will help achieve Council's vision and 10-year strategic goals.
Corporate Strategic Objective	A specific statement of what the corporation (City of Edmonton) needs to accomplish in order to achieve a strategic goal. Objectives should be achievable within the time frame of the plan.
Corporate Strategic Action (or Initiative)	A specific statement of how the corporation (City of Edmonton) intends to pursue a strategic objective.
Policy Statement	A statement describing a preferred course of action regarding a particular issue or situation.

Appendix 2: Subsidiary Plans, Policies, Strategies and Standards

- Arterial Roadways Assessment Policy
- Bridge Investment Strategy
- City of Edmonton Design & Construction Standards
- City of Edmonton Municipal Emergency Plan
- City of Edmonton Roadway Planning and Design Objectives (Levels of Service, Capacity Standards, and Maximum Design Volumes)
- Cycle Edmonton: Bicycle Transportation Plan (Technical Report and Summary Report)
- Downtown Area Redevelopment Plan: Downtown Parking Study Final Report
- Edmonton Transit System Ridership Growth Strategy and Planning Review
- ETS Fare Policy
- A Guide to DATS: Accessible Public Transportation Options for Persons with Disabilities in Edmonton
- Household Travel Survey Summary Report
- Long Term Public Transportation Strategy Report
- Multi Use Trail Corridor Study
- Pavement Investment Strategy
- Ped Connections: A Strategy for Sidewalk Infrastructure in Edmonton (Technical Report and Summary Report)
- Railway Crossing Planning Study
- Road and Walkway Lighting Manual
- Safety Audit Guide for Crime Prevention
- Smart Card Business Case and Deployment Plan
- Street Cleaning Policy
- Traffic Safety Strategy
- Transit Technology Deployment Plan
- Transit Ten Year Marketing Strategy and Three Year Market Plan
- Urban Traffic Noise Policy
- Winter Road Maintenance Policy



City of Edmonton, Transportation Planning
13th Floor, Century Place
9803 - 102A Avenue
Edmonton, Alberta, Canada T5J 3A3
780-496-1795

www.edmonton.ca

