

# CAPITAL REGION BOARD

## Integrated Regional Transportation Master Plan

September 2011



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# 1.0 INTRODUCTION

## 1.1 BACKGROUND AND CONTEXT

In April 2008, the Government of Alberta created the Capital Region Board (CRB) through the Capital Region Board Regulation under the Municipal Government Act.

The CRB is an organization that consists of twenty-four member municipalities in the Capital Region. The CRB regulation prescribes the Board’s membership, voting rights, powers and duties.

The CRB was given the following mandate:

- › Prepare a proposed Capital Region Growth Plan in accordance with Part 2;
- › Advise and make recommendations to the Minister regarding the preparation and implementation of the Capital Region Growth Plan;
- › Facilitate the resolution of issues arising from the preparation and implementation of the Capital Region Growth Plan;
- › Implement policies for the sharing of costs among the participating municipalities for regional projects of the Capital Region, and
- › Carry out any other functions and duties as the Minister directs.

The CRB submitted the Capital Region Growth Plan on March 31, 2009 and two addenda documents on October 31, 2009 and December 31, 2009.

The CRB Growth Plan entitled “Growing Forward” consists of four components:

- › Land Use Plan
- › Intermunicipal Transit Network Plan
- › Housing Plan
- › Geographic Information System Plan

The October 2009 and December 2009 addenda to the Growth Plan included the development of maps that identified priority growth areas, as well as transportation and other infrastructure.



Towards the completion of the December 2009 Addendum to the Growth Plan, Alberta Transportation advised the Capital Region Board that authorization had been given for commencement of planning for a second Outer Regional Ring Road within a specific study area. Upon consideration of the Alberta Government's plans, some CRB member municipalities expressed concerns as to the need for or location of a potential Outer Regional Ring Road. These concerns, together with the absence of satisfactory justification for a second Outer Regional Ring Road, led to the completion of the Transportation Infrastructure map without indication of an Outer Regional Ring Road.

Subsequent to the completion of the Growth Plan amendments, the CRB initiated the Integrated Regional Transportation System Study in spring of 2010.

## **1.2 OBJECTIVES OF THE INTEGRATED REGIONAL TRANSPORTATION SYSTEM STUDY (IRTSS)**

The Integrated Regional Transportation System Study (IRTSS) is a strategic study that identifies key elements of the Capital Region's future transportation system. The purpose of the IRTSS is to fill a strategic gap in the regional planning framework by defining a regional transportation system that serves the region's land use and transportation needs in a manner that is consistent and compatible with the objectives of the Capital Region Growth Plan.

The key objectives of IRTSS are:

- To develop and assess several alternative scenarios for a Regional Transportation System.
- To develop policy statements that underpin the recommended plan and support the Growth Plan as a whole.
- To develop a recommended network of regionally significant roads, transit facilities and active transportation corridors.
- To develop an **Integrated Regional Transportation Master Plan** that is consistent with and supportive of the Growth Plan.
- To develop implementation priorities and strategies.

The development and analysis of regional transportation system alternatives that established the technical foundation for this Transportation Master Plan is documented under separate cover as the **Integrated Regional Transportation System Study – Technical Report**. The technical report documents the alternatives that were developed, as well as the analysis and resulting conclusions and recommendations of the work. On June 9, 2011, the Capital Region Board approved the IRTSS Technical Report.

### 1.3 THE LAND USE PLAN AND INTERMUNICIPAL TRANSIT NETWORK PLAN

The two key components of the Capital Region Growth Plan that have significant bearing on the Integrated Regional Transportation Master Plan are the Land Use Plan and the Intermunicipal Transit Network Plan.

#### Land Use Plan 2009

The March 2009 Land Use Plan established a shared vision for the Capital Region that was used as the foundation for six “Core Principles” to guide the preparation of the Land Use Plan. These Core Principles include:

- › Protecting the environment and resources;
- › Minimizing the regional footprint;
- › Strengthening communities;
- › Increasing transportation choice;
- › Ensuring efficient provision of services, and
- › Supporting regional economic development.

Each of the Core Principles consists of numerous principles and supportive policies. These “Principles and Policies” are the planning framework employed by the CRB and its member municipalities to guide future growth and development in the Capital Region and to achieve the shared vision for the Capital Region.

An underlying foundation and focus of the Principles and Policies is the requirement to integrate transportation and land use decisions to achieve the shared vision by the Capital Region. This necessitates planning for the movement of people rather than automobiles, while still recognizing the importance of highways and other transportation corridors for the movement of goods. This focus is evident in those Principles and Policies that concentrate new growth within priority growth areas, support public transit, integrate transportation systems with land use, and support the expansion of transit service in various forms. These Principles and Policies are nested under the Core Principles of minimizing the regional footprint, strengthening communities, and increasing transportation choice. The focus is also interspersed under other Core Principles among other Principles and Policies that strive to manage land use distribution patterns to reduce reliance on automobiles, increase transit accessibility, improve connectivity and accessibility to community amenities, services, and employment, and identify and protect transit corridors.

The October 2009 Addendum included two critical components of the Capital Region Growth Plan: a map of priority growth areas (PGAs), as well as density targets for the PGAs.

Sections 1 and 2 of the December 2009 Addendum satisfied the remaining requirements of the Land Use Plan prescribed by the Regulation. One of the most significant achievements of this addendum was the alignment of the CRB's population and employment forecasts with those of Alberta Finance and Enterprise.

The forecasts were formulated using a reasonable scenario of the total population and employment growth and its distribution in the Capital Region by 2044. The forecasts were based on the Principles and Policies of the March 2009 Land Use Plan, and the various aspects of the October 2009 Addendum including the identification of PGAs and the application of density targets to the identified PGAs. The forecasts were published by CRB member municipality as well as by identified PGA. The forecasts recognized that most new growth within the Capital Region will occur within PGAs, and confirmed that a more compact regional footprint can be achieved through the application of density targets within PGAs.

#### **Intermunicipal Transit Network Plan 2009**

The Intermunicipal Transit Network Plan identified amongst other things, a short term, medium term and long term transit network plan for the Capital Region. The Plan identified a network of transit facilities and services consisting of:

- Light rail transit lines
- Intermunicipal bus services
- Park and Ride facilities at key locations

Two key recommendations of the Intermunicipal Transit Network Plan were for the provincial government to prepare a Capital Region Roadway Plan, as well as to develop an Urban Transit section within Alberta Transportation.

The need for a regional roadway plan was seen as filling a critical gap in the planning framework that needed to be addressed in order to ensure true integration of land use and transportation infrastructure in the Capital Region.



# 2.0 BACKGROUND

## 2.1 LAND USE PLAN POLICIES

Within the six core principles enunciated in the Land Use Plan, there a number of policy statements that enunciate how growth, development and related transportation infrastructure should be addressed. These include:

- › Protect the Environment and Resources
- › Preserve and Protect the Environment
- › Minimize the Regional Footprint
- › Identify, Protect and Prioritize Lands for Regional Infrastructure
- › Concentrate New Growth within Priority Growth Areas
- › Allow Growth outside Priority Growth Areas
- › Strengthen Communities
- › Support Public Transit
- › Increase Transportation Choice
- › Integrate Transportation Systems with Land use
- › Support the Expansion of Transit Service in Various Forms
- › Ensure Efficient Provision of Infrastructure
- › Design Integrated Physical Infrastructure within the Region
- › Maximize Utilization of Existing Infrastructure

One of the key outcomes of the principle on minimizing the regional footprint was the development of a map of priority growth areas. These areas will be proximate to existing or proposed multi-mode movement corridors and transit nodes, adjacent to major employment areas, in areas where opportunities exist for redevelopment or intensification and locations that benefit from existing infrastructure or where such infrastructure can be logically and efficiently extended. The Growth Plan identified seven PGAs which are depicted in Figure 1.



## 2.2 PLANNING HORIZON – GROWTH FORECASTS

This Plan has been developed to be in full alignment with the planning horizon and growth forecasts adopted by the Capital Region Board as per the December 2009 Addendum.

The December 2009 Addendum provided population and employment growth projections for a thirty five year period, from 2009 to 2044. Table 1 shows a summary of these forecasts.

*Table 1: Growth in the Capital Region*

	2009	2014	2019	2029	2044
Population	1,120,613	1,218,231	1,310,607	1,480,969	1,734,495
Employment	620,095	677,259	716,489	780,080	861,502

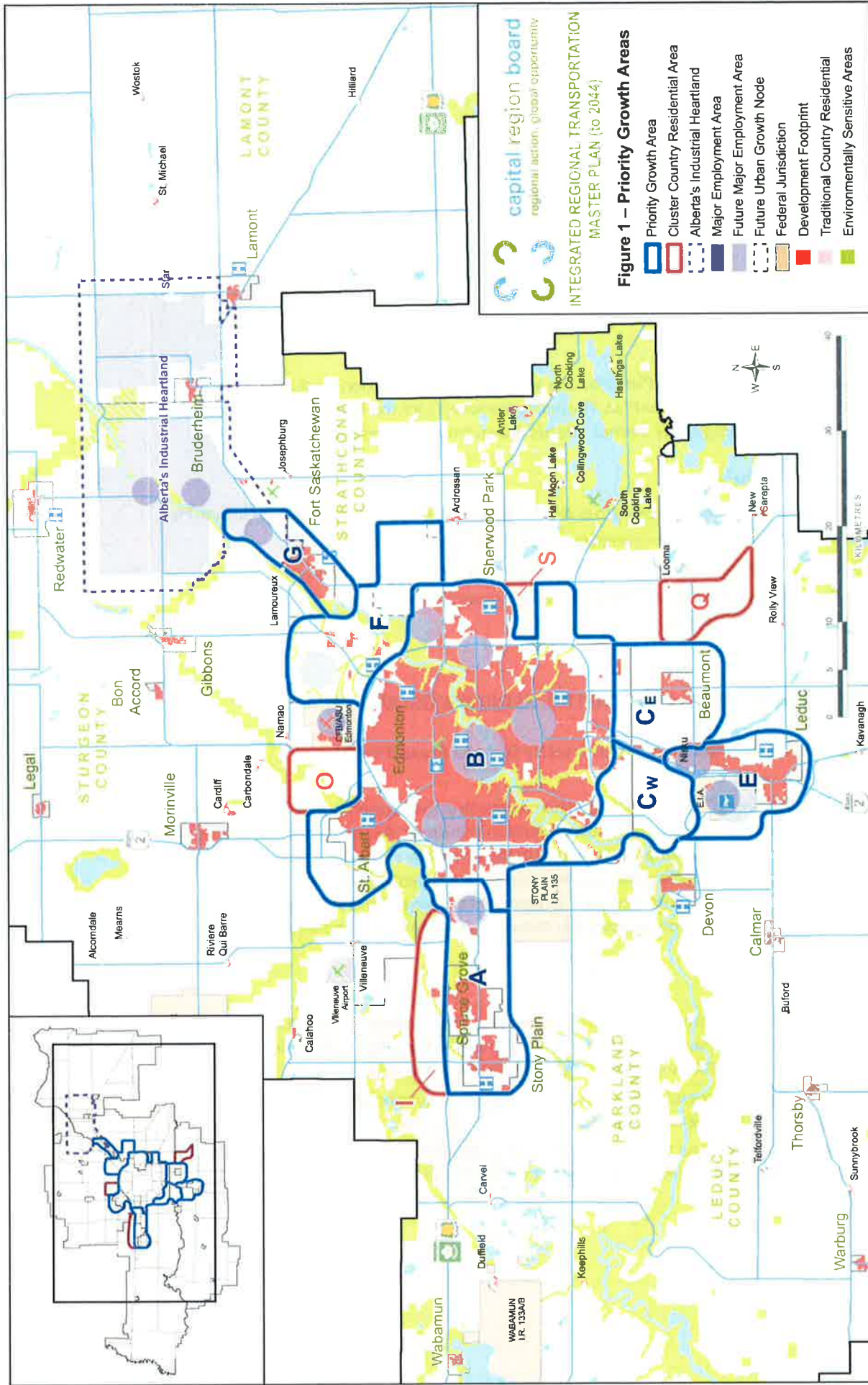
Over the course of the next thirty five years, some municipalities will grow at a faster or slowed pace, depending on economic and market conditions.

Employment growth in the next ten years that will significantly exceed the long term average is foreseen in Leduc County and Sturgeon County.

## 2.3 OTHER TRANSPORTATION PLANS

This Integrated Regional Transportation Master Plan has taken into consideration a number of recently completed or nearly completed transportation plans in the Capital Region, including:

- › City of Edmonton Transportation Master Plan – “The Way We Move”
- › City of Edmonton Long Term LRT Network Plan
- › City of St Albert Transportation Master Plan
- › City of Leduc Transportation Master Plan
- › Leduc County Draft Transportation Master Plan
- › Strathcona County Integrated Transportation Master Plan Draft Vision and Principles
- › Alberta’s Industrial Heartland Transportation Study
- › Capital Region Board Draft 30-Year Transit Service Plan
- › Capital Region Board Intermunicipal Transit Network Plan, 2009
- › Capital Region Integrated Growth Management Plan
- › Alberta Transportation 20-Year Strategic Capital Plan
- › Government of Alberta Capital Plan, 2011 – 2014



## 3.0 POLICY FRAMEWORK

The Capital Region's Land Use Plan provides a robust policy foundation for this Integrated Regional Transportation Master Plan. The policy framework for the Transportation Master Plan is founded upon guiding policy themes that are drawn from the Land Use Plan.

### **Guiding Policy Themes**

- › The regional transportation system is well-Integrated with the Capital Region's Growth Plan.
- › The Region's transportation system provides transportation choices.
- › The Region's transportation system minimizes environmental degradation.
- › The Region's transportation plans are efficiently coordinated across and between jurisdictions.

### **3.1 INTEGRATION WITH THE CAPITAL REGION'S GROWTH PLAN**

#### **Principle 1 Preserve the Integrity of Priority Growth Areas (PGA's)**

##### *Preamble*

Priority Growth Areas (PGA) will be the focus of growth in the Capital Region. They are areas that will be developed to higher urban densities than in the past. As such, they will consist of a mix of land uses and have an urban form that fosters travel by a variety of modes, including private vehicles, transit, cycling and walking. In order to ensure the realization of such development patterns, the transportation systems that serve and traverse the PGAs must maintain the fine fabric of connections that allow a high level of multimodal accessibility within and between PGAs.

##### *Policies*

- › In order to maintain the cohesion and completeness of neighbourhoods that make up the PGAs, they should be served by a fine grid of arterial roads and transit facilities in order to avoid severance of PGA's with excessively wide transportation corridors.
- › Transportation systems within the PGAs that will induce automobile oriented land development patterns should be avoided.
- › Appropriate roadway and transit design standards should be applied within PGAs that align with the land use and environmental context within which they are developed.

## **Principle 2 Maximize Use of Existing Infrastructure**

### *Preamble*

Significant investment has already been made in the road and highway infrastructure within the Capital Region, creating a full network of corridors that move people and goods. Many of these existing routes have not been developed to their full potential, and still have the capability for expansion or upgrading to provide additional capacity and to incorporate additional modes of transport. A focus on maximizing the available infrastructure will maximize the value of capital investments.

### *Policies*

- › Place priority on upgrading existing highways and intersections prior to investing in the construction of new ones.
- › Upgrade the Region's existing roadway grid to support the region's mobility and accessibility needs.
- › Support the expansion of regional transit facilities and services, in order to maximize the people carrying capacity of the transportation system.
- › Apply demand management and congestion management techniques in order to maximize the value of existing infrastructure and to temper the need for new facilities.
- › Apply technological innovations to help manage and distribute travel demand and moderate the need for new infrastructure.
- › Provide multiple routes of access that allow flexibility, that provide redundancies and which avoid overconcentration of traffic on a limited number of arteries.

## **Principle 3 Develop a Transportation System that supports the Region's Economy**

### *Preamble*

The Capital Region's economy relies on the movement of goods and services within the region and inter-regionally. To support regional economic well-being, the movement of goods in the Region must be supported by appropriate major corridors and highway facilities that serve key markets and areas of economic activity.

### *Policies*

- › Ensure that the region's unique industrial and commercial activities are well served by transportation corridors that connect key industrial and commercial sites with local and extra-regional markets in Canada and abroad.
- › Ensure that an efficient system of regional truck routes is provided and protected to maintain and enhance the Capital Region's competitive economic advantages.
- › Ensure that the Region's transportation system offers viable multimodal travel choices that bring people within convenient reach of the Region's economic, educational, recreational and cultural opportunities.
- › Ensure that access, intersection and interchange spacing practices in the Region recognize and support the economic activities and provide a reasonable balance between access, efficiency and safety.

## 3.2 INCREASED TRANSPORTATION CHOICES

### **Principle 1 The region's transportation system shall develop and strengthen transit facilities and services to provide a viable alternative to private automobile travel.**

#### *Preamble*

Over the last five years the Region's growth has generated significant demands on member municipalities to provide new or additional transit services. This demand for transit facilities and services reflects a growing need for alternative modes of travel by the Region's citizens and has prompted investment in new service or feasibility studies to explore new service. The Capital Region Growth plan includes numerous references to greater reliance on public transit as a policy theme.

#### *Policies*

- The region's transportation system will support and enable a significantly stronger role for public transit in the form of bus services, Light Rail Transit expansion and support facilities such as park and ride facilities and transit centres.
- The region's roadway system should include a variety of transit supportive measures such as designated transit lanes, high-occupancy vehicle (HOV) lanes, bus on shoulder operations, transit queue jumps and other transit priority systems.
- Planning for inclusion of transit facilities on regional roadways should become standard practice by CRB member municipalities and the Provincial government.

### **Principle 2 Support Active Transportation**

#### *Preamble*

Numerous benefits stem from the accessibility of facilities that allow active pursuits such as walking and cycling. Whether for health benefits, recreational endeavours, community building or as a mode of travel, these connections increase overall value to our transportation system. Within the Region, highways have provided a significant barrier to active transportation intra-regionally.

#### *Policies*

- The region's transportation system will support and enable a significantly stronger role for active transportation modes.
- Provide key active transportation corridors in the region that have convenient access and take advantage of scenic areas within the Capital Region whenever possible.
- Allow and plan for reasonable trail crossings of highways.

### **Principle 3 Support Multi-Modal Transportation Facilities**

#### *Preamble*

The multi-faceted regional transportation network not only provides flexibility for travelers to choose their method of travel – vehicle, public transit, active transportation – but is also designed for connectivity and accessibility for intra-regional and inter-modal networks. The Region’s transportation system also needs to acknowledge and to cater to connections between modes and include good connection to the region’s rail and air infrastructure for movement of people and goods.

#### *Policies*

- › The region’s transportation system will offer multiple routes and multiple points of access.
- › The Region’s transportation system shall provide ancillary facilities such as park and ride facilities and transit centres to enable travellers to access different modes of transportation for their journeys throughout the region.
- › The Region’s transportation system shall facilitate the multi-modal conveyance of goods using the region’s road, rail and air infrastructure.

## **3.3 REDUCTION OF ENVIRONMENTAL DEGRADATION**

### **Principle 1 Minimize Impacts associated with the Transportation Network**

#### *Preamble*

Maintaining a vibrant, sustainable Capital Region relies upon the protection of protecting the very essence of our livability – the natural resources and environment surrounding us. Growth and impacts of all transportation works shall strive to balance development with protection of natural features, minimizing environmental and ecological impacts to ensure sustainable quality of life now and in the future.

#### *Policies*

- › The region’s transportation system shall strive to minimize harmful emissions including greenhouse gases.
- › The regions’ transportation system shall minimize and mitigate impacts on natural features, water courses, wetlands, forests and wildlife habitat.
- › Any transportation related project that impacts the regional watershed or historical resources shall comply with all applicable federal and provincial legislation.
- › Utilize and support sustainable practices when upgrading, maintaining, or constructing new transportation corridors.

### **3.4 EFFECTIVE COORDINATION OF INFRASTRUCTURE BETWEEN ALL JURISDICTIONS**

#### *Preamble*

In order to develop an effective transportation system for the Capital Region all member municipalities as well as the provincial government must strive to cooperate and coordinate their activities for the benefit of the Region.

#### *Policies*

- › The type, location and timing of transportation improvements should reflect a shared commitment to a Region with a common and shared vision for its future.
- › Mechanism for greater on-going co-operation between the Province and CRB Municipalities should be pursued to ensure that the CRB Growth Plan aspirations are realized.



# 4.0 RECOMMENDED TRANSPORTATION SYSTEM

## 4.1 LAND USE AND TRANSPORTATION INTEGRATION – THE FOUNDATION FOR THIS PLAN

This Plan is founded upon a requirement to fully integrate land use and transportation in the Capital Region in order to move the Region to a more compact form of urban development that minimizes the Region’s footprint. While land use and transportation integration are often cited as key planning objectives, such integration is for a variety of reasons rarely well executed in practice. In order to achieve true land use and transportation integration, land use planners, transportation engineers and developers must collaborate to define the type of urban form that is intended and how to reflect this objective in appropriate roadway, transit and non-motorized. Traditional approaches that are based on traditional traffic impact analysis, predefined roadway functional classifications and traffic level of service concepts will not achieve the necessary integration that is demanded by the Capital Region Growth Plan.

## 4.2 REGIONALLY SIGNIFICANT ROADS DEFINED

The Capital Region’s transportation system is anchored by a network of “regionally significant roads”. For the purpose of this Integrated Regional Transportation Master Plan, “**regionally significant roads**” shall generally be defined as follows:

“Any arterial or higher order roadway that, regardless of jurisdiction, serves to connect CRB municipalities with each other and with other regions in Alberta and Canada”.

These regionally significant roadways will typically enable the conveyance of people and goods to satisfy economic, cultural, educational, social and recreational needs and activities which may be geographically separated.

The importance of these roads derives not from their size, standard, capacity or speed, but from their position and role in connecting population areas, industrial areas and commercial areas with each other. In addition, these roads may serve as conduits for Intermunicipal bus-based transit service, as corridors for LRT or other transit technologies, as well as the conveyance of goods.

Regionally significant roads may extend across multiple municipalities and may perform differing roles within different parts of the Capital Region. It is therefore quite acceptable for a “regionally significant road” to have differing characteristics and standards as it passes through different parts of the region.

### **4.3 REGIONAL ROADWAY CLASSIFICATION**

Traditionally, roadway planning and design has been based on a functional classification of roadways that defined roadway characteristics by essentially two variables that determine a roadway’s “service function” or role:

- A roadway’s role and importance in providing and accommodating vehicular through movement versus its role and importance in providing vehicular access to land.
- Traffic characteristics of a roadway (volume, speed, flow characteristics).

The Transportation Association of Canada’s Geometric Design Guide for Canadian Roads identifies service function and traffic characteristics as the key determinants of roadway classification.

Service function is defined strictly in terms of the balance between moving traffic and accessing land. In addition to service function, vehicular traffic characteristics such as traffic volume, traffic speed and traffic flow characteristics are also used as guides to defining roadway classification. Once roadway classifications have been determined, a “design vehicle” and “design speed” are selected as a basis for the remainder of the roadway’s design characteristics. Roadway design speed and design vehicles are then used to determine the physical characteristics of a roadway.

It is noted that this traditional approach to roadway classification and related design practices has led to a high degree of design standardization that does not take sufficient account of the adjoining land use context. In essence, all roads having the same classification are designed to exactly the same standards; deviations from these standards typically only occur when there are significant and/or costly barriers to achieving the desired standard.

More recently, roadway planning and design practices in some jurisdictions have begun to embrace a broader range of factors to be considered in the classifications and design of roadways. These more recent trends have placed much greater importance on the need to focus road classification and design on moving people rather than vehicles; the distinction being that movement of people can and should include moving people by bus, cycle or on foot, to a much greater degree. Furthermore, these more recent trends have also placed more emphasis on adjusting the road design to better align with the nature and character of the surrounding land use and development pattern.

As noted above, regionally significant roadways link municipalities, future growth areas, major destination centres, employment centres, as well as public spaces and amenities. Three main categories of regionally significant roadways are defined:

#### **1. Arterial Roads:**

In both urban and rural settings, arterial roads serve to carry relatively high numbers of people and goods from one part of a municipality to another, or from one municipality to another within a region. Arterial roads typically do not provide direct property access, although direct property access to commercial establishments or groups of commercial establishments is common in urban areas. Arterial roads will typically connect with lower order roadways (collectors and locals) which provide direct property access. Arterial roads connect with other arterials and lower order roads by way of level intersections which are controlled by yield control, stop control or traffic signals. Spacing of intersections along arterials can vary widely, but should generally fall in the 250 to 400m range, depending on the adjoining development patterns. In environments where land use patterns are highly diverse and mixed, and where a high level of multimodal accessibility is desired, intersections should be more closely spaced. Arterial roads should include elements that cater to vehicles, buses, pedestrians and bicycles with a high level of attention to travel by transit, bicycle and pedestrians. Arterial roads should be designed to respect the context and environment within which they will exist, as opposed to some pre-determined design parameters that bear no relationship with the surrounding context.

#### **2. Expressways:**

In both urban and rural settings, expressways are a form of arterial roads that are intended to operate at higher speeds than arterials with no direct property access. Expressways are typically intended to operate at speeds of 70 -100km/hr and typically intersect with other arterials in a roadway network. Intersections along expressways are typically further apart; 800 -1600 metres. Intersections along expressways may be either at-grade or may be grade separated. Expressways may or may not be an interim stage towards a fully free-flowing facility with no at-grade intersections. Expressways should be planned and design to respect the adjoining context in terms of access spacing, right of way, speed and design standard; expressways in urban areas should be designed to urban standards. Expressways within urban or urbanizing areas should have lower speed and closer intersection spacing than in rural areas. As with arterial roadways, expressways should be designed to cater to travel by transit, and should include measures to enhance and provide priority to transit vehicles, both on the expressway itself as well as on approach intersections and interchanges. Expressways may frequently connect with and provide access to industrial or commercial areas and should therefore be planned and designed to handle a higher proportion of commercial vehicles.

### **3. Freeways:**

Freeways are a type of arterial roadway that is aimed at conveying people and goods over relatively large distances and at relatively high speeds. Freeways may extend through just a single municipality across multiple municipalities or across multiple regions and provinces. Freeways are by definition aimed at rapid and conflict-free movement of people and goods and therefore have no at-grade intersections with other crossing roadways; all intersections are grade-separated and there are no direct accesses to any adjoining lands.

Speeds along freeways are typically higher than on arterial roadways and fall in the 80km/hr to 110km/hr range with the higher speed range being more common and appropriate in rural environments. Interchange spacing on urban freeways should be in the 1600 to 3200m range with actual spacing to be determined by the needs and development patterns and intensities of the adjoining areas. In rural areas, freeways interchanges may be spaced further apart, but again, the locations and spacing should consider the adjoining lands and development patterns and intensities.

While freeways will, by virtue of their intended purpose and role, have certain physical and design parameters associated with their design, they can and should be planned and designed to respect the context within which they are situated. This includes interchange spacing, design and posted speeds, design standards (urban vs. rural) as well as potential noise mitigation measures and aesthetic features.

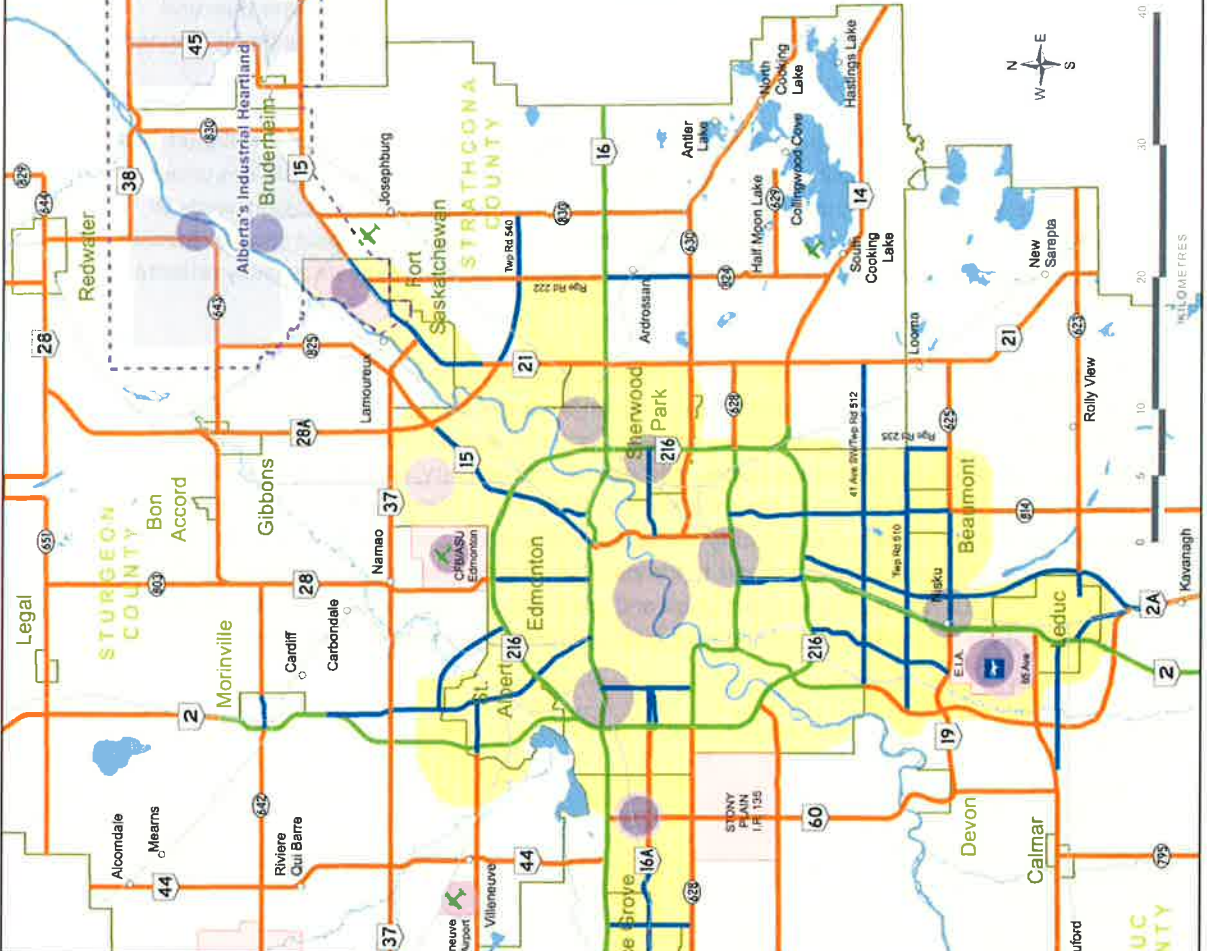
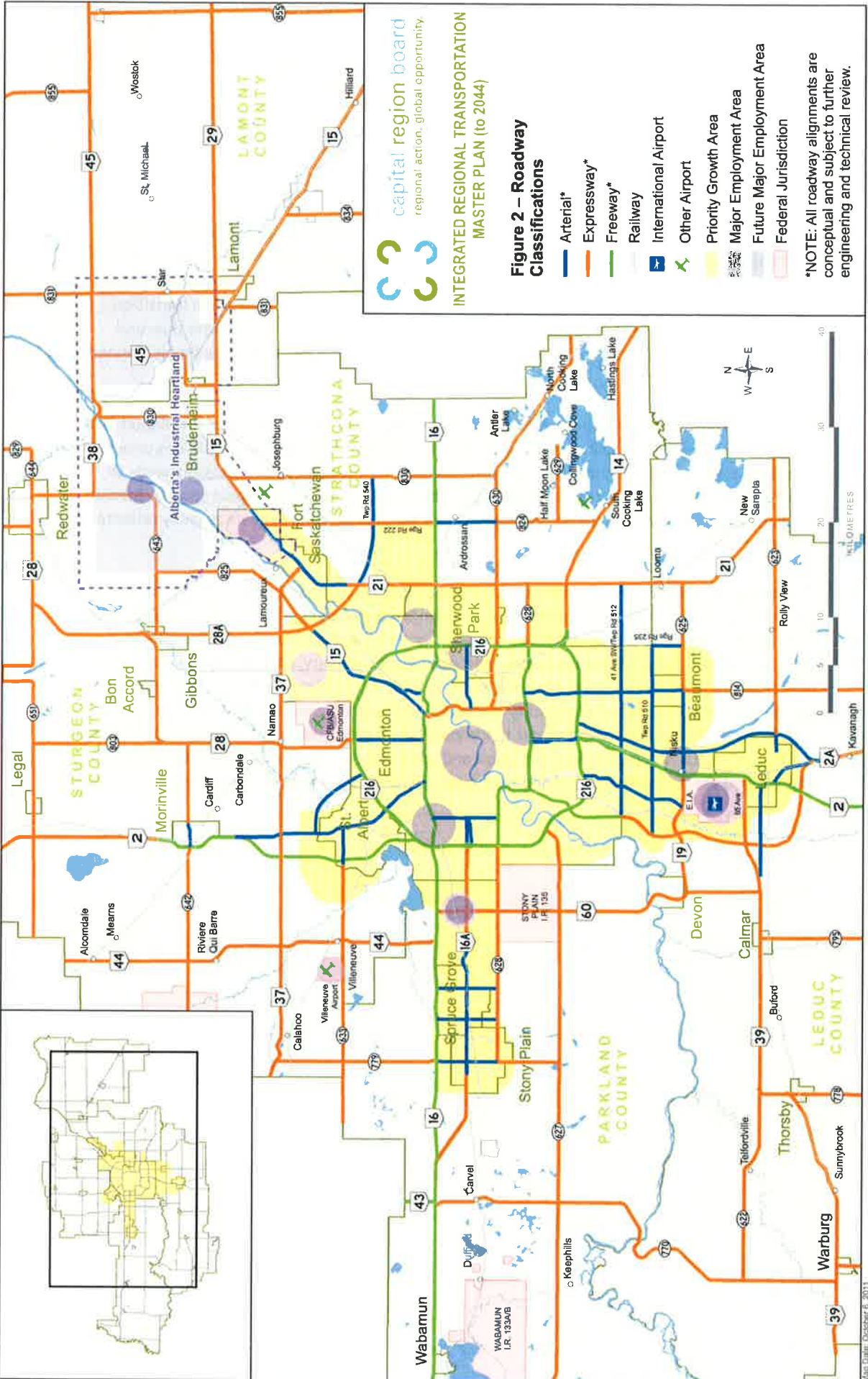
Figure 2 illustrates the proposed roadway classification that reflect the above definitions and that we deemed to align with the Capital Region Growth Plan.

#### **4.4 PLANNING AND DESIGN PHILOSOPHY**

The discussion on land use and transportation integration, as well as the definition a regional roadway classification in Section 4.3, requires the recognition and application of a planning and design philosophy that responds to the vastly diverse needs of a complex metropolitan region. The Capital Region includes areas that are urban, rural and in rural to urban transition. In choosing appropriate planning and design practices, it is necessary to consider this rural versus urban context in terms of the type of roadway and transit infrastructure that is planned, designed and built.

Many of the growth areas in the Capital Region are currently rural but will, when developed, be highly urban. These areas will need to have a transportation system that respects this urban nature. To that end, the planning and design philosophy for these areas in transition needs to ensure that road standards, right of way widths, spacing of collector and local streets, spacing of accesses and the provisions for vehicles, transit, pedestrians and cyclists are fully reflected at the outset.

The evolution of the Capital Region into a metropolitan area that has a tighter footprint and higher densities, demands that planning and design practices change from past practices that were in many respects driven by a focus on vehicular travel and engineering parameters that had little recognition of non-engineering factors such as liveability, community character and quality of life. Throughout North America, communities are aspiring to improve the quality of life in their communities and embracing changes in their planning and design practices that will enable these aspirations to be realized. It is imperative that the planning and design community within the Capital Region begin to recognize and apply planning and design practices that go well beyond the narrowly focused engineering design guidelines that are currently in active use.



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**INTEGRATED REGIONAL TRANSPORTATION MASTER PLAN (to 2044)**

**Figure 2 – Roadway Classifications**

- Arterial\*
- Expressway\*
- Freeway\*
- Railway
- International Airport
- Other Airport
- Priority Growth Area
- Major Employment Area
- Future Major Employment Area
- Federal Jurisdiction

\*NOTE: All roadway alignments are conceptual and subject to further engineering and technical review.

## 4.5 REGIONAL ROADWAY NETWORK

On the basis of analysis of several region-wide network alternatives, a recommended network of regionally significant roads has been identified for the Capital Region. The network includes provincial highways, and municipal roads, both existing and proposed. The network reflects those facilities that are deemed to provide the necessary linkages within the Region, as well as connections with other regions in Alberta regions and Canada.

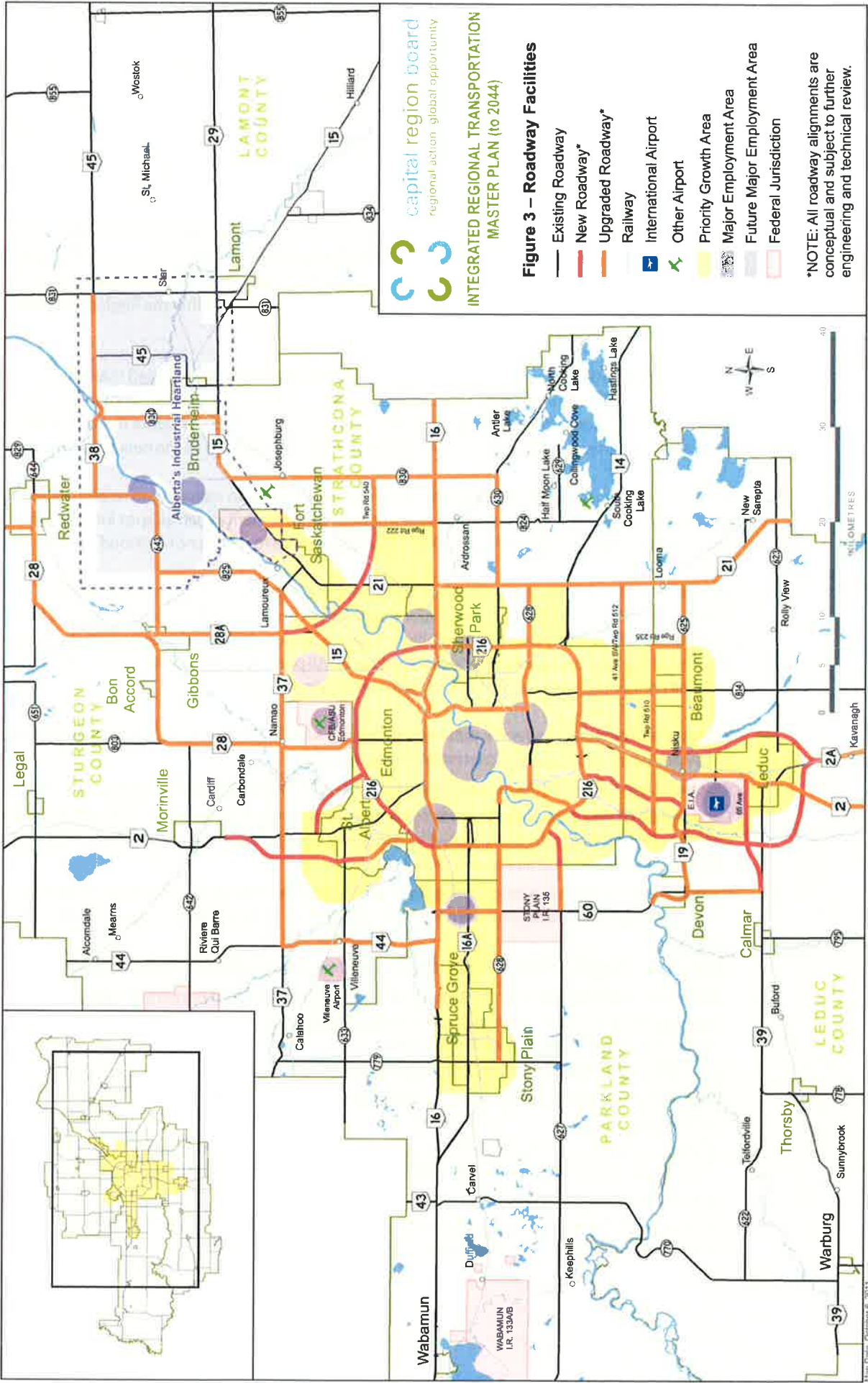
The identified network reflects all classifications as defined in Section 4.3 and therefore includes regionally significant arterials, expressways and freeways, regardless of jurisdictional responsibility. Figure 3 illustrates the regional roadway network and highlights those roadways that need to be improved as well as new roadways that will be added to the network in future.

For the purposes of this IRTMP, roadway “improvements” refer to major improvements such as roadway widening and interchange construction. Improvements such as spot intersection improvement, paving of gravel roads or overlaying of paved roads are not included.

In addition to identifying the regional roadway network, Figure 3 shows how this network relates to the Priority Growth Areas, major employment areas, as well as airports and rail lines. The regional roadway network shows a high degree of accessibility and connectivity between all parts of the Region, as well as with areas outside. All priority growth areas are well served and well connected with each other and major employment areas.

In addition to existing roadways that need to be upgraded in future, Figure 3 identifies a number of key additions to the regional network. These include:

- › Completion of the north leg of Anthony Henday Drive, from Highway 16 east to Highway 16 west.
- › Extension of Ray Gibbon Drive north to connect back to Highway 2 south of Cardiff Road; Ray Gibbon Drive would also be upgraded to a freeway and be designated as provincial Highway 2 and replace St Albert Trail through St. Albert.
- › Construction of a new river crossing just south of Fort Saskatchewan to connect Highway 28A with Highway 21 and Township Road 540 (subject to further engineering and technical review).
- › Extension of Highway 627 from 199 Street to Anthony Henday Drive at Cameron Heights Drive.
- › Extension and upgrading of 170 Street from the south city limit of Edmonton, along the west side of Edmonton International Airport, across Highway 39 and southeast to QE2 Highway and Highway 2A, south of the City of Leduc.
- › Construction of 65 Avenue westerly from QE2 Highway, along the south boundary of Edmonton International Airport and connect with Highway 39, west of the 170 Street extension.
- › Construction of the Nisku Spine Road as an arterial roadway from Edmonton through Nisku, along the east side of City of Leduc and then connecting with QE 2 Highway and Highway 2A south of the City of Leduc.
- › Extension of 127 Street from Anthony Henday Drive north onto Sturgeon County and connecting to Highway 2 at Township Road 544.





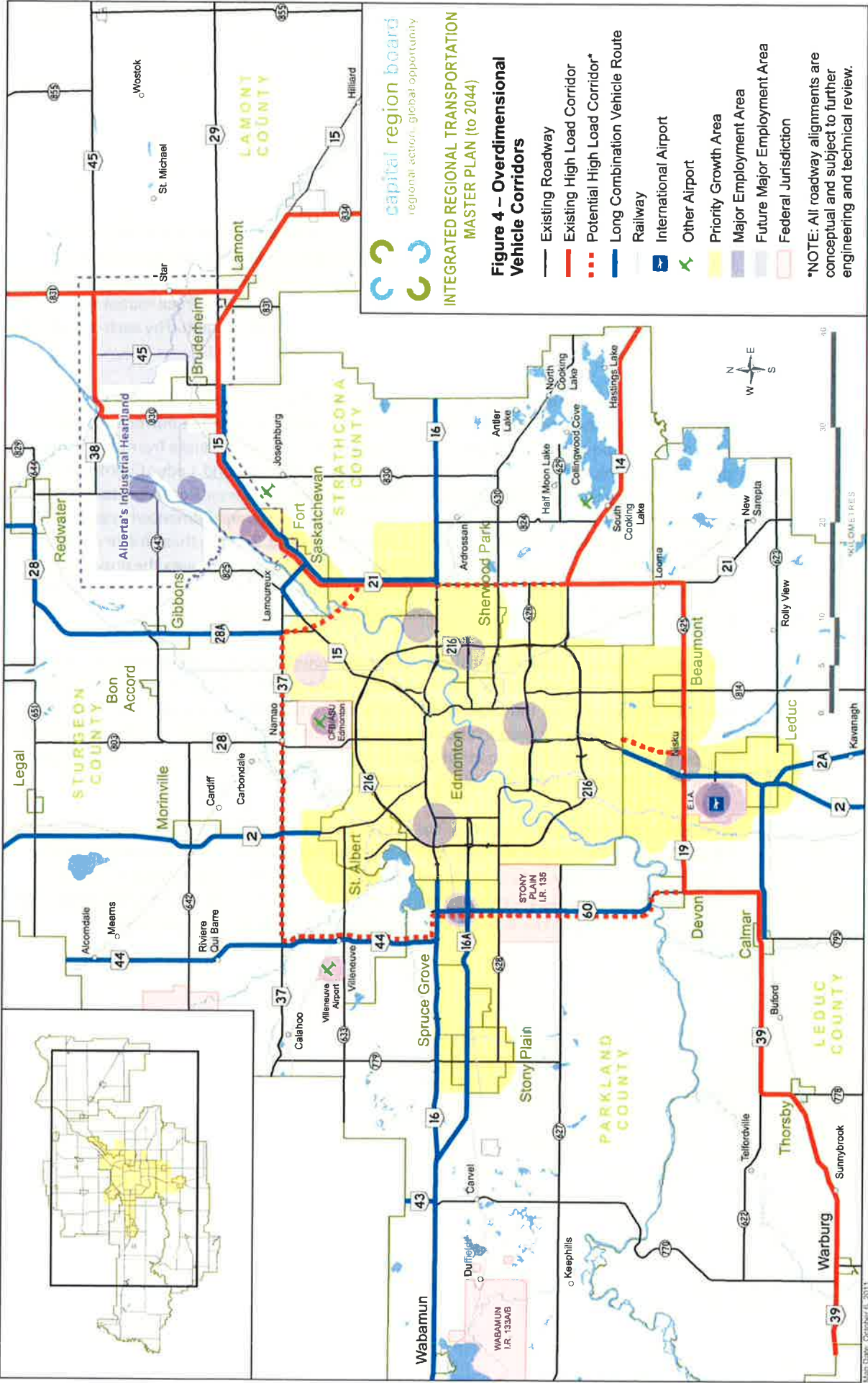
## 4.6 GOODS MOVEMENT

The Capital Region includes a number of areas with significant industrial and commercial development that depends on the transport of raw materials and or finished products to internal and external markets. All provincial highways which form part of the regional network in Figure 3 are designated as truck routes and dangerous goods route. Truck routes and dangerous goods route within urban municipalities are typically regulated by each municipality through a bylaw.

The Region's transportation system must recognize and respond to the complex and vast demands for transport and movement of raw and finished goods within the region as well as into and out of the region. The demands for movement of goods emanate from significant areas of economic activity that include Alberta's Industrial Heartland, Leduc County's Nisku and other industrial areas, Parkland County's Acheson Industrial area, Port Alberta, Edmonton International Airport, Strathcona County's petrochemical sites and Edmonton's central, southeast, north and northwest industrial/commercial areas. Serving these major areas of economic activity with appropriate transportation infrastructure requires the provision of adequate routes for movement of heavy vehicles and adequate provision of access off these routes to allow efficient access to the industrial and commercial sites.

The Capital Region is a significant site for the manufacture and distribution of equipment to oil and gas extraction sites in northern and central Alberta. As such, the Region generates considerable demand for the shipment of high or exceptionally long loads. To accommodate such demands, Alberta Transportation has designated a number of routes within the Capital Region to accommodate high loads as well as long loads. Figure 4, illustrates existing high load corridors and long combination vehicle routes.

A review of the existing routes, together with input from CRB members, indicated the need to fill some gaps in the current network. While the designation of such routes requires detailed investigation and analysis to confirm feasibility, tentative new linkages that are needed to fill gaps in route continuity have been indicated in Figure 4. It should be noted that the desired linkages may or may not be feasible and are subject to further detailed verification.



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**Figure 4 – Overdimensional Vehicle Corridors**

- Existing Roadway
- Existing High Load Corridor
- Potential High Load Corridor\*
- Long Combination Vehicle Route
- Railway
- ✈ International Airport
- ✈ Other Airport
- Priority Growth Area
- Major Employment Area
- Future Major Employment Area
- Federal Jurisdiction

\*NOTE: All roadway alignments are conceptual and subject to further engineering and technical review.

## 4.7 REGIONAL TRANSIT FACILITIES

A significant and defining policy orientation of the Capital Region’s Growth Plan is the significant role that public transit is expected to play in serving Priority Growth Areas and in reducing the regional footprint. The CRB’s Intermunicipal Transit Network Plan completed in 2009 set a foundation for a regionally coordinated set of transit facilities and services. The following describes refinements to that plan as a result of work completed by several municipalities since that time.

### LRT Network and Related Park and Ride

The LRT network within the City of Edmonton is evolving as the backbone of a regionally coordinated transit system within the Capital Region. As the LRT network expands outward within Edmonton’s boundaries, it becomes increasingly more a part of a regional asset that serves and attracts travellers from all sectors outside of Edmonton. The City of Edmonton has worked collaboratively with its neighbors to incorporate regional needs as they relate to LRT route selection. This collaboration has resulted in the definition of a long term LRT network that extends outwards from Edmonton’s downtown, toward the City’s neighboring municipalities.

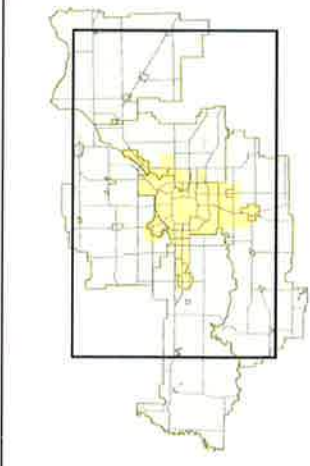
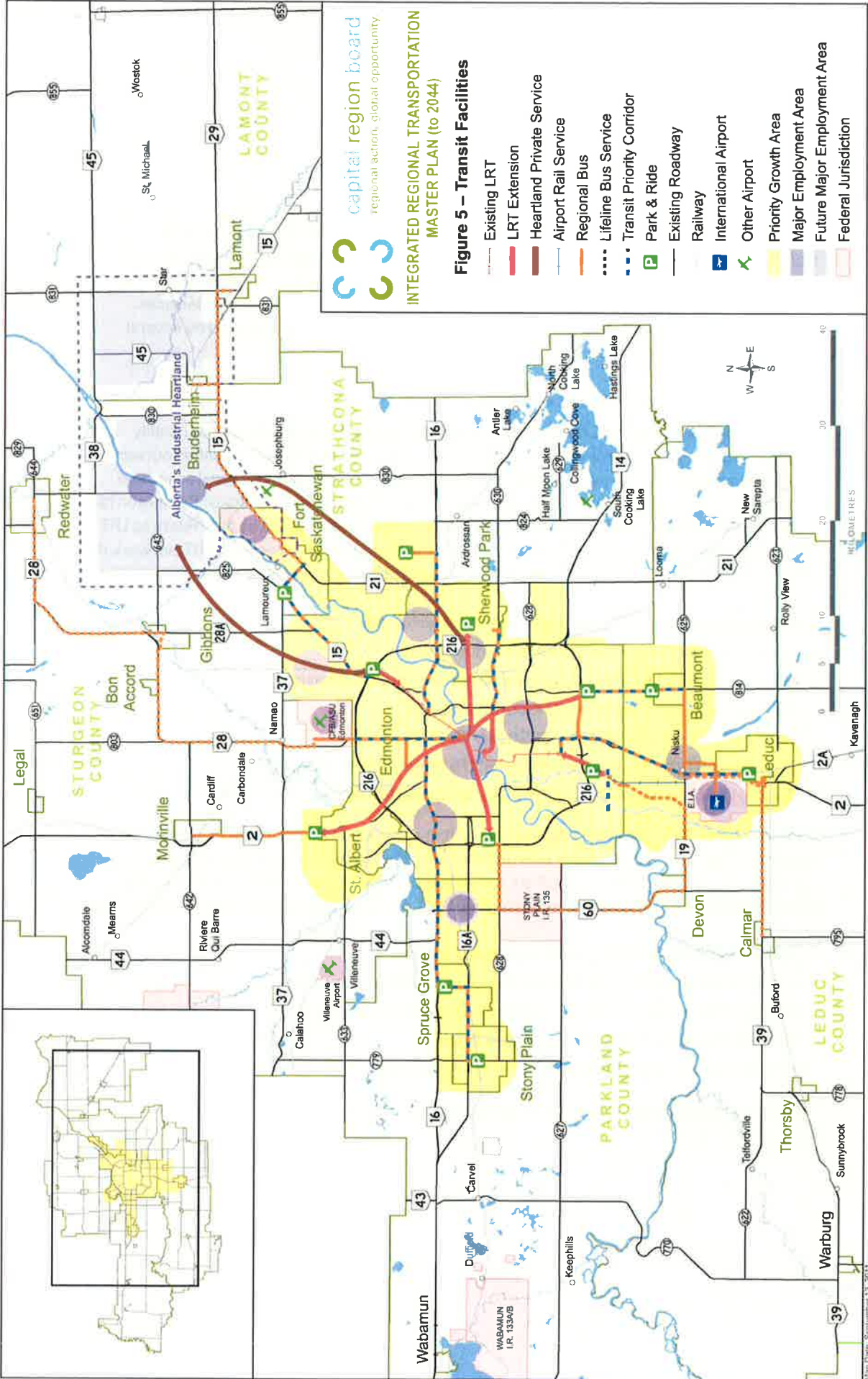
The following specific LRT alignments have been selected:

- › North LRT to NAIT via Kingsway Avenue/106 Street.
- › North/Northwest LRT to St. Albert via 113A Street and 153 Avenue.
- › Northeast LRT from Clareview to Gorman area.
- › South LRT to Heritage Valley via 111Street/135 Street.
- › Southeast LRT to Millwoods via 83 Street/75 Street/66 Street.
- › West to Lewis Estates via Stony Plain Rd/156 Street/87 Avenue.

To support the LRT’s role in serving markets within and outside Edmonton’s boundaries, a number of Park and Ride lots have been located near the terminus of each LRT line, generally near Anthony Henday Drive. These Park and Ride lots, each of which will have capacity for about 1500 parking stalls, will intercept regional LRT customers at convenient points of access.

- › Lewis Estates (near Anthony Henday Drive/87 Avenue)
- › Gorman Park and Ride (near Anthony Henday Drive/Manning Drive)
- › Heritage Valley near southwest Anthony Henday Drive/135 Street
- › Southeast on 50 Street, south of Ellerslie Road
- › St Albert area at Anthony Henday Drive/St. Albert Trail

Figure 5 conceptually illustrates the network of LRT lines and supporting Park and Ride lots in the Capital Region.



### **Regional Bus Service and Supporting Park and Ride Facilities**

As the Capital Region grows there is greater demand for alternatives to private automobile transportation. Municipalities that have reached a size and scale to warrant transit service are experiencing an unprecedented demand for service.

A network of regional bus services to serving the growing market for transit has been developed as illustrated in Figure 5. This network generally serves the current and future high demands for service between regional municipalities and Edmonton.

Urban municipalities such as Stony Plain, Spruce Grove, Beaumont, City of Leduc, Fort Saskatchewan, Sherwood Park and Strathcona County’s urban growth areas will all generate growing demand for regional bus service. In some cases this will increase demand for service already in existence and in other instances new service will need to be introduced.

As with the LRT network, the Regional Bus services will be supported by a series of Park and Ride lots that are strategically positioned to intercept travellers near their home base, so that they can travel conveniently to a collection point and transfer onto regional bus service for the remainder of their trip.

### **Rail Transit Corridor to Edmonton International Airport**

The Capital Region recognizes the Edmonton International Airport (EIA) as an important link to the outside world, be it other regions in North America, or other destinations around the globe. There is consensus that in order for the EIA to maintain and grow its importance to the Region it needs to be connected to by high quality rail based access. The City of Edmonton, Leduc County and EIA have engaged in preliminary planning activities and discussions aimed at protecting for a rail corridor connecting Edmonton with EIA. The exact technology and alignment for such a corridor remain the subject of further work. The rail corridor to the Airport is conceptually shown in Figure 5.

### **Lifeline Bus Services**

In addition to regularly scheduled daily regional bus service, there is a need for service on a less frequent basis from more remote areas of the Region into Edmonton for “lifeline” purposes such as specialty medical or other services that are not available in small communities.

These lifeline service routes are conceptually illustrated in Figure 5 and are typically connected to LRT or other transit service to allow for continuation of a trip.

### **Transit Priority on Regional Roads**

Convenient and effective mobility by public transit requires that transit service be competitive with its main rival, the private automobile. In the case of LRT service, this can be ensured using track segregation and/or LRT signal pre-emption tactics. In the case of bus service, it is important to provide surface bus operations with facilities on roadways that ensure that transit service can operate in a manner that is unimpeded by roadway congestion or collision events.

Most regional bus services will travel on regional roads either directly into Edmonton, or directly to Park and Ride lots at the end of LRT lines. In order to maintain the ability of bus services to travel to their destinations efficiently on regional corridors, a number of these corridors have been designated as “Transit Priority” corridors which should be supplemented with transit priority features as, when and where appropriate. These transit priority measures could include but are not limited to:

- › Bus on shoulder operation
- › Dedicated transit lanes
- › Bus-only ramps
- › Transit queue jump lanes
- › Transit priority signals at interchanges

Figure 4 illustrates the corridors in the Capital Region which have been designated as Transit Priority corridors.

## 4.8 AIR AND RAIL TRANSPORTATION

### Air Transportation

Air Transportation facilities in the Capital Region are by and large under the jurisdiction of Edmonton Regional Airports Authority (ERAA), which in turn is subject to federal regulations. ERAA currently operates four airports in the Capital Region, Edmonton International Airport (EIA), City Centre Airport, Villeneuve Airport and Cooking Lake Airport.

Edmonton International Airport is the region's primary air passenger and air cargo link. The Airport currently serves more than 6 Million Annual Passengers (MAP). EIA's recently released Master Plan outlines plans for expansion of the Airport's facilities in anticipation of an annual passenger traffic load of 13 MAP by 2035. The EIA Master Plan is intended to clarify the Airport's growth and development plans to handle the expected high growth in passenger and cargo traffic. The Airport's plans include significant expansion of passenger terminals, airside systems including a third runway, business aviation facilities, cargo facilities as well as parking and ground transportation services. The EIA's future success in sustaining its growth and profile in a highly competitive global marketplace requires coordination of the Airport's plans and aspirations with regional transportation initiatives. The Capital Region Board has recognized and lent its support to the EIA's Master Plan and is through this IRTMP committed to ensuring the necessary integration of regional multimodal facilities with EIA's on-site plans.

The City Centre Airport (formerly Blatchford Field) in central Edmonton is an airport serving fixed and rotary wing charter operations as well as aviation support services. City Centre airport is undergoing a transition that will see the decommissioning of all airport functions and redevelopment of the lands into a sustainable central community for some 30,000 people.

The Villeneuve Airport located along Highway 633 some 18 km northwest of Edmonton as a general aviation airport. The Villeneuve Airport houses 16 businesses, includes 12 hangars and two paved 3,500 foot runways. The airport focuses on aircraft flight training, fixed-wing aircraft maintenance, as well as helicopter maintenance and aviation operations. The Villeneuve Airport Master Plan (2006) identified the potential for an Airport Business Park on the southeast quadrant of the airport property. Due to runway limitations, the size of aircraft being served will not change. Villeneuve Airport is and will continue to be served by good highway connections that include Highway 633 and Highway 44.

Cooking Lake Airport is a general aviation airport and a regional seaplane base located about 30 km east of Edmonton along South Cooking Lake. It is primarily a recreational flying facility. The airport offers one paved runway and two float plane launch ramps.

In addition to the four airports operated by ERAA, Strathcona County owns and operates the Warren Thomas (Josephburg) Aerodrome. This airfield is located 1.6 kilometres north of Josephburg on Secondary Highway 830, and is approximately 5 kilometres south of the Heartland Industrial Area. The aerodrome is used for privately owned and commercial aircraft. The lands around the property are primarily used for agricultural purposes. The Warren Thomas Aerodrome has one 4560 foot runway, 28 bareland lease sites and 12 aircraft tie-downs.

### **Rail Transportation**

The Capital Region is served by an extensive network of railway facilities serving both passenger and cargo needs. Passenger rail service is currently provided by Via Rail operating on Canadian National's east-west mainline, which runs parallel to Highway 16/ Yellowhead Trail. The Region's only Via Rail station is currently located off 121 Street, just south of Yellowhead Trail.

Plans for development of High Speed Passenger Rail service serving the Edmonton Calgary corridor are under consideration by the Alberta Government and other parties. Conceptually, the corridor would link Downtown Edmonton with Downtown Calgary with potential stops at the two cities' international airports. Detailed engineering studies outlining alignments, rights of way and integration with other regional transportation facilities have not been carried out.

Rail based cargo transportation in the Capital Region is provided by the Canadian National (CN) and Canadian Pacific (CP) railways. Figure 6 indicates the existing and future rail infrastructure in the Capital Region. CN has the most extensive trackage in the Region which provides connections to continental ports at Vancouver, Prince Rupert, Halifax and New Orleans. CP Rail on the other hand, provides direct connections good connections between Alberta's Industrial Heartland and Asian markets by way of Vancouver, B.C. and U.S. markets through Coutts, Alberta and Kingsgate, B.C.

## **4.9 ACTIVE TRANSPORTATION IN THE CAPITAL REGION**

"Active transportation" refers to human-powered travel such as cycling, walking, roller-blading, skateboarding and jogging for commuting or non-recreational travel transportation purposes. In recent years municipalities have paid greater attention to non-motorized modes of travel as a legitimate and growing portion of the travel mark. Since active transportation tends to be very time-consuming for long distance trips, it is usually most viable for shorter, more localized trips. However, walking and cycling can be combined with transit service and thereby significantly increase the convenience and appeal of these modes.

Some municipalities have gone to significant effort to enhance the viability of active transportation modes within their communities. By way of example, Edmonton has developed a network of multi-use trails as well as a Bicycle Transportation Plan and followed this up with annual capital investment in sidewalks and multi-use trails along arterial corridors.

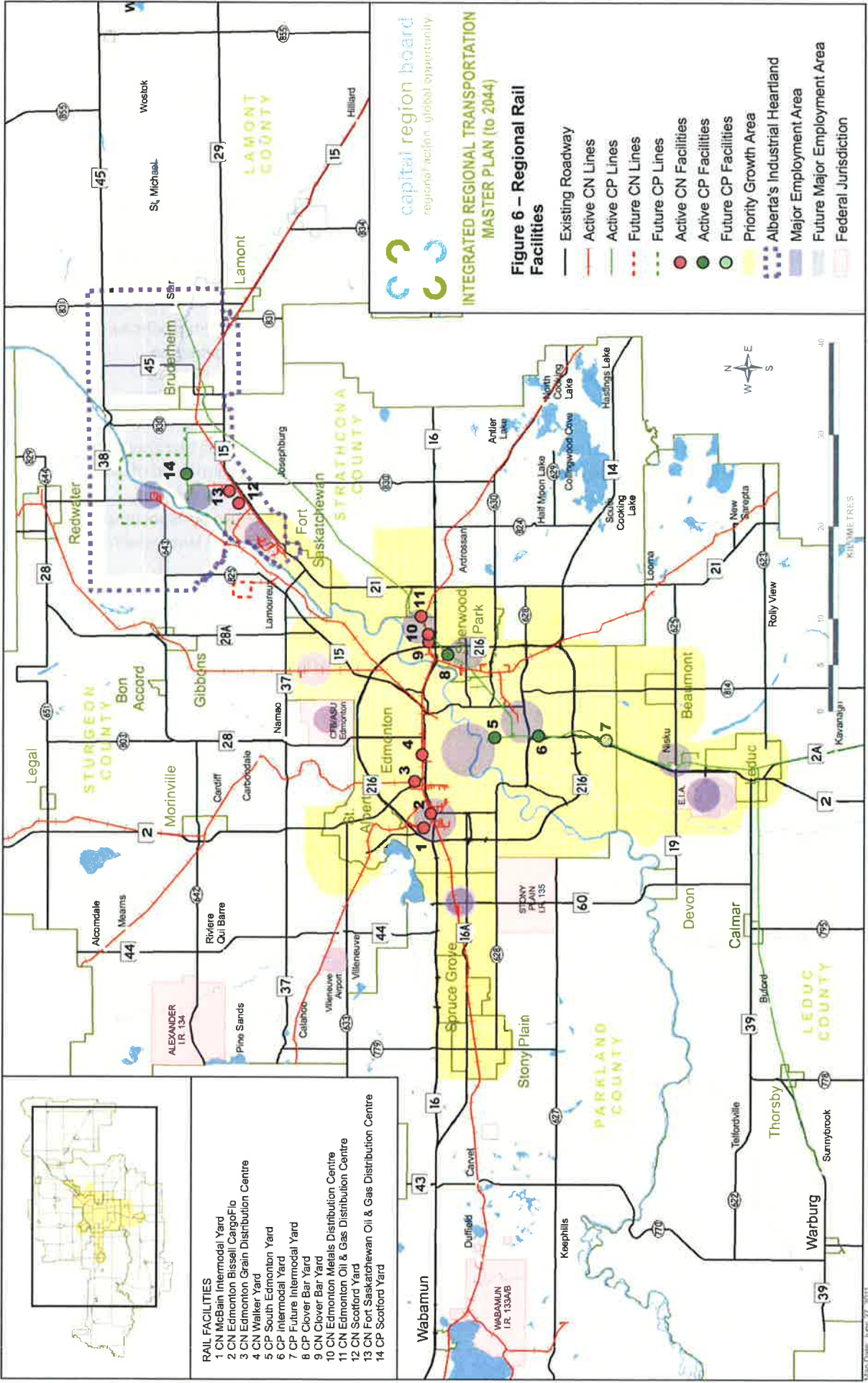


Other Capital Regional municipalities have also made investments in active transportation and these investments serve primarily local needs. The North Saskatchewan River Valley is one of few corridors that can provide Intermunicipal non-motorized access via walking and cycling trails. There are additional opportunities for Intermunicipal linkages using mechanisms such as Intermunicipal Plans (IDPs) or adjoining Area Structure Plans along shared municipal boundaries.

The definition of Priority Growth Areas in the Capital Region, together with related policies to intensify development densities and encourage transportation choices provides an opportunity to enhance the provision of active transportation in the new growth areas in the future.

The focus of regional active transportation initiatives should be on shorter trips that connect users to complementary land uses, such as residential and commercial, residential and office, or residential and education sites, as well as connecting people to public transit stations. Development plans in Priority Growth Areas should include facilities for active transportation users, whether it is separate paved trails, sidewalks for pedestrian modes, bike lanes, sharrows or wider curb lanes for cyclists.

Natural and man-made features such as rivers, creeks, ravines, rail corridors and freeways, should be recognized as obstacles to active transportation and as such require special attention in order to accommodate the needs of active transportation users.



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**Figure 6 – Regional Rail  
 Facilities**

- Existing Roadway
- Active CN Lines
- Active CP Lines
- Future CN Lines
- Future CP Lines
- Active CN Facilities
- Active CP Facilities
- Future CP Facilities
- Priority Growth Area
- Alberta's Industrial Heartland
- Major Employment Area
- Future Major Employment Area
- Federal Jurisdiction

- RAIL FACILITIES**
- 1 CN McBain Intermodal Yard
  - 2 CN Edmonton Bissell CargoFlo
  - 3 CN Edmonton Grain Distribution Centre
  - 4 CN Walker Yard
  - 5 CP Intermodal Yard
  - 6 CP South Edmonton Yard
  - 7 CP Future Intermodal Yard
  - 8 CP Clover Bar Yard
  - 9 CN Edmonton Metals Distribution Centre
  - 10 CN Edmonton Oil & Gas Distribution Centre
  - 11 CN Scofield Yard
  - 12 CN Fort Saskatchewan Oil & Gas Distribution Centre
  - 13 CN Fort Saskatchewan Oil & Gas Distribution Centre
  - 14 CP Scofield Yard



# 5.0 IMPLEMENTATION OF THE INTEGRATED REGIONAL TRANSPORTATION MASTER PLAN

This Plan lays out in broad terms the policy drivers and key elements of a highly integrated Transportation Master Plan for the Capital Region. The Plan ensures that all components are interconnected and mutually supportive both from a policy perspective as well as from an infrastructure investment perspective. The Plan strives to define a transportation system that “fits” and aligns with the principles and policies of the Growth Plan.

The success of this Transportation Master Plan will rely on the degree to which CRB members and provincial partner agencies such as Municipal Affairs and Transportation can arrive at action and implementation plans that are in keeping with the intent of the Capital Region Growth Plan. In addition, successful implementation will depend on a rational and well-coordinated execution of Plan elements over its 35 year planning horizon.

Following is a listing of suggested Ten Year Investment Priorities that indicates the nature of improvements that should be implemented in the initial ten years. It should be noted that these priorities are highly dependent on levels of funding available for transportation infrastructure from all sources. Figure 7 and 8 depict the Ten Year Road and Transit Priorities, respectively.

## 5.1 TEN YEAR INVESTMENT PRIORITIES

Investment priorities within the Capital Region have been identified below for different areas within the region as this allows for better consideration and understanding of groups of improvements in similar geographic areas.

### **Central Sector:**

In the central portion of the Region and predominantly within the City of Edmonton there will be a strong emphasis on pursuing an aggressive program of LRT implementation that includes:

- › LRT extension from Lewis Estates to Downtown Edmonton to Millwoods
- › LRT south extension from Century Park to Ellerslie

Roadway investments in Edmonton will be focused on improvements to goods movement routes and include:

- › Construction of Anthony Henday Drive North
- › Anthony Henday south/west upgrades; interchanges: Rabbit Hill Road to Yellowhead Trail
- › Widening of Manning Drive and 97 Street connections to Anthony Henday Drive North
- › Widening of Whitemud Drive: 53 Avenue to 149 Street
- › Widening of Whitemud Drive: Anthony Henday Drive to 231 Street
- › Widening of Whitemud Drive: 75 Street to 34 Street
- › Improvements to Yellowhead Trail: 156 Street to 66 Street
- › Improvements to Terwillegar Drive: Whitemud Drive to Anthony Henday Drive
- › Improvements to 75 Street: Whitemud Drive to Argyll Road
- › Widening 50 Street: South City limit to Anthony Henday Drive
- › Extension of Highway 627 from 199 Street to Anthony Henday Drive
- › Improvements to 170 Street: Anthony Henday drive to 41 Avenue SW

**Outside the City of Edmonton a series of key improvements will be required to the regional roadway network as follows:**

**West/Northwest Sector:**

- › Twinning Highway 60: Highway 16A to Highway 16
- › Twinning Highway 628: Guardian Road to Highway 60
- › Extension of Highway 627 from 199 Street to Anthony Henday Drive at Cameron Heights Drive
- › Park and Ride lot in Spruce Grove
- › Park and Ride lot at St. Albert Trail/Anthony Henday Drive

**South Sector:**

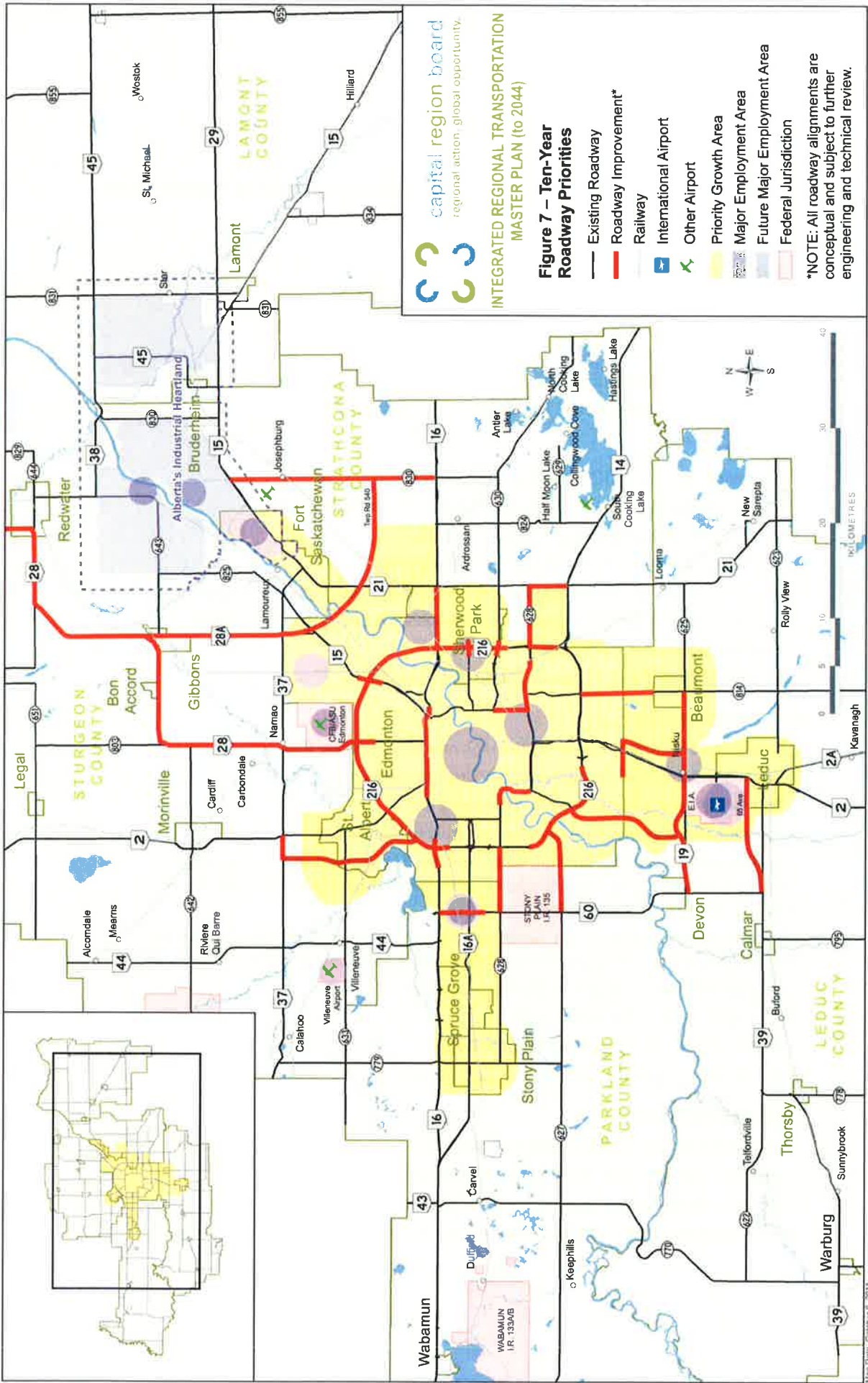
- › Twinning Highway 19: QE2 Highway to Highway 60
- › Upgrade and extension of 170 Street: 41 Avenue SW to Highway 19
- › Twinning of Highway 625: Nisku to Highway 814
- › Upgrade of 41 Avenue: 101 Street SW to 111 Street SW
- › New 65 Avenue arterial w/ QE2 Highway Interchange: QE2 Highway to Highway 39
- › Transit priority along QE2 Highway from 65 Avenue in Leduc to Ellerslie Road
- › Park and Ride lot in City of Leduc
- › New Nisku Spine Road: 41 Avenue SW to Highway 625

**East/Northeast Sector:**

- › Upgrading of Anthony Henday Drive: Highway 16 to Highway 628
- › Widening Highway 16: Anthony Henday Drive to Highway 21
- › Twinning Highway 21: Highway 16 to Highway 628
- › Twinning Highway 628: Anthony Henday Drive to Highway 21
- › Widening Highway 830: Highway 16 to Highway 15 (alignment and connection with Highway 16 to be subject to completion of Highway 16 Functional Planning Study (east of RR 222 to Elk Island Park)
- › New River Crossing: S. of Fort Saskatchewan connecting with Highway 21/Twp 540 and Highway 28A (subject to further engineering and technical review)
- › Upgrade Twp Rd 540: Highway 21 to Highway 830
- › Park and Ride lot in Sherwood Park
- › Transit priority along Baseline Road/98 Avenue
- › Transit priority on Wye Road/Sherwood Park Freeway/Whyte Avenue

**North/Northeast Sector:**

- › Twinning Highway 28: 195 Avenue to Highway 63
- › Twinning Highway 28 A: Highway 37 to Highway 28 at Gibbons
- › Intersection Improvement: Highway 37 at Highway 825
- › Twinning and Extension of Ray Gibbon Drive: Anthony Henday to Villeneuve Road



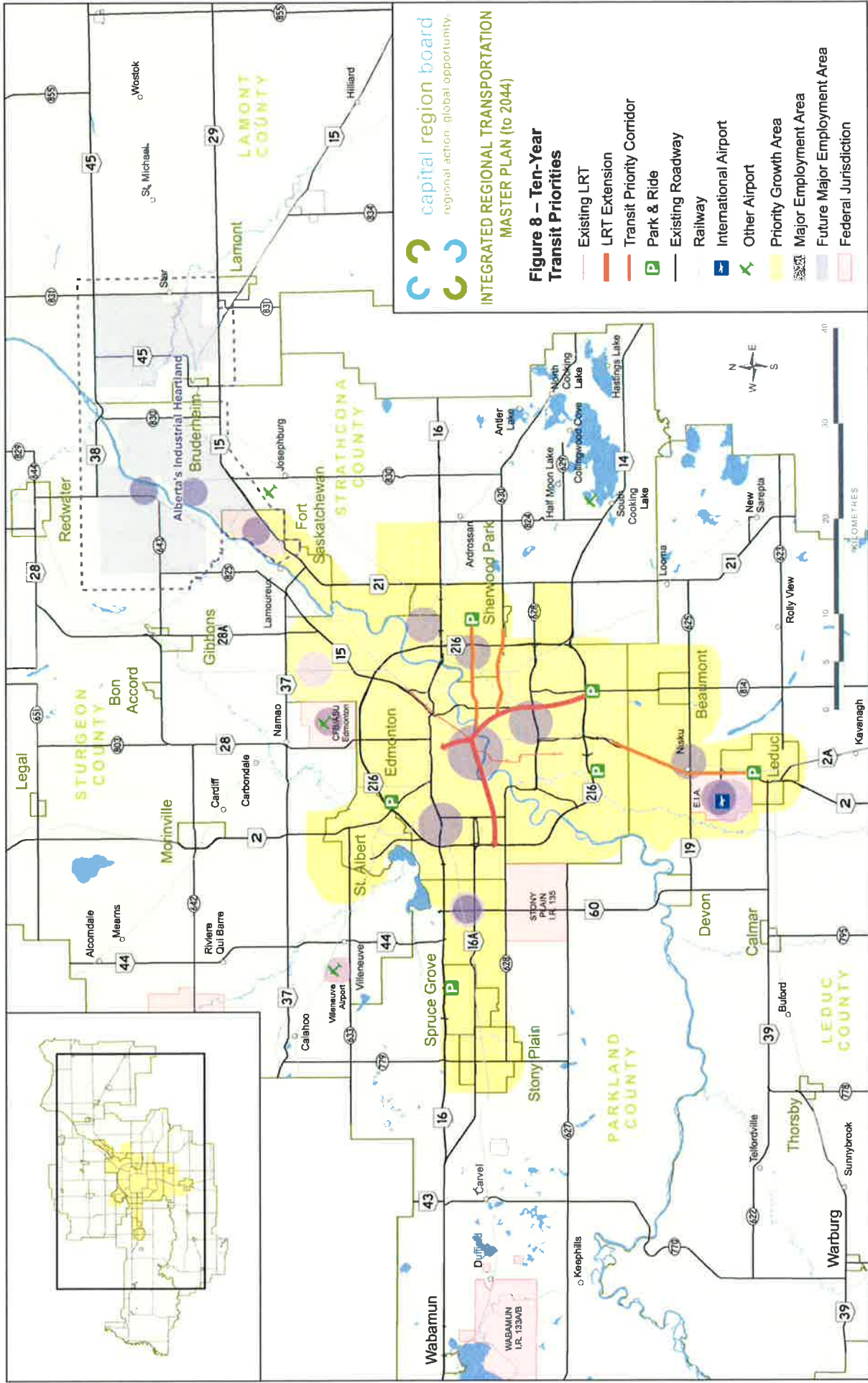
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**Figure 7 – Ten-Year Roadway Priorities**

- Existing Roadway
- Roadway Improvement\*
- Railway
- International Airport
- Other Airport
- Priority Growth Area
- Major Employment Area
- Future Major Employment Area
- Federal Jurisdiction

\*NOTE: All roadway alignments are conceptual and subject to further engineering and technical review.





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