

THE WAY WE MOVE

IMPLEMENTATION PLAN

TRANSPORTATION MASTER PLAN

JUNE 2012



TRANSFORMING | **EDMONTON**

BRINGING OUR CITY VISION TO LIFE



THE CITY OF
Edmonton

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.

The Transportation Master Plan, *The Way We Move* establishes a framework for how the City will address its future transportation needs and was approved by City Council in 2009. The Way We Move has two companion documents: an Implementation Plan that outlines the policies, procedures and projects that are necessary to achieve the Vision and a Progress Measures Report which provides insight into the City's progress towards the Strategic Goals. This version of the Implementation Plan is an update to the Interim Implementation Plan that was approved by Council in 2010 and has been aligned with the capital and operating budgets. Future Implementation Plans will be prepared in 2014 and 2017.

The implementation plan outlines the projects, plans and initiatives that will advance the Vision by describing:

- **What We Did** – projects completed from 2009-2011
- **What We are Currently Doing** – these are activities that were funded prior to 2012 and we will keep doing them unless otherwise directed
- **What We Will Do** – initiatives to be started in 2012-2014 as they were approved as part of the capital or operating budget or can be done with existing resource.
- **What We Could Do** – important priorities that advance the goals and are achievable in the 10 years based on today's funding sources.
- **What We Aspire To** – important priorities that may not be possible in the next four to 10 years and beyond as funding may not be in place.

To have an understanding of the cost to achieve the vision of *The Way We Move* a number of different investment strategies were developed. It is clear that all of the projects cannot be completed with today's funding levels and as a result, tough decisions regarding priorities need to be made.

For the next capital budget period, 2015-17, two general scenarios were developed. 'Could Do' represents the funding requested as an extension of the 2012-14 commitments in key areas related to infrastructure renewal. The 'Aspire To' scenario includes additional operating and capital spending needed to meet Council targets. 'Aspire To' scenarios have been developed for the next three capital budget cycles, projecting well over \$1 billion dollars annually in capital and operating funds.

The Implementation Plan is laid out in three key focus areas: The services that are required to keep citizens moving (Foundational Services), What the City does to take care of our current infrastructure (Asset Management and Maintenance) and new infrastructure projects (Planning for the Future).





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1.0 INTRODUCTION

1.1 What is *The Way We Move*?

Transportation is more than moving people, goods and services on Edmonton roads, buses, sidewalks, buses 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.

The Way We Move is about building a sustainable, 21st century city and 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 for moving people; 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.

The Transportation Master Plan approved by Council in 2009 establishes the framework for how the City of Edmonton will address its future transportation needs and is aligned with 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. Together these goals contribute to creating the kind of safe, vibrant, economically robust, culturally active and environmentally sustainable city Edmontonians said they envision. *The Way We Move* has two companion documents: an Implementation Plan and a Progress Measures Report, which provides insight into the City's progress towards the Strategic Goals.

THE WAY WE **MOVE** STRATEGIC GOALS

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

THE WAY WE **GROW** STRATEGIC GOALS

Sustainable Urban Form
Integrated Land Use and Transportation
Complete, Healthy and Liveable Communities
Urban Design
Supporting Prosperity
Natural Environment
Working Within Our Region
Managing Land and Resources
Food and Urban Agriculture



1.2 A Guide To This Document

This version of the Implementation Plan is an update of the July 2010 Interim Implementation Plan and aligns with the 2012 Operating Budget and the 2012-14 Capital Budgets approved by City Council in December 2011. The purpose of the Implementation Plan is to create accountability for delivering on the goals of *The Way We Move*. It translates strategic direction into day-to-day action so that all employees in Transportation Services see their contribution to the Vision.

The Implementation Plan outlines the projects, plans and initiatives that will advance the Vision of *The Way We Move* by describing to Council and citizens:

- **What We Did** – projects completed from 2009-2011
- **What We are Currently Doing** – these are activities that were funded prior to 2012 and we will keep doing them unless otherwise directed
- **What We Will Do** – initiatives to be started in 2012-2014 as they were approved as part of the capital or operating budget or can be done with existing resource.
- **What We Could Do** – important priorities that advance the goals and are achievable in the 10 years based on today's funding sources.
- **What We Aspire To** – important priorities that may not be possible in the next four to 10 years and beyond as funding may not be in place.

This is laid out in the Plan in three key focus areas:

Foundational Services

- *The Way We Move* is not just about new projects, it is about keeping the lights on and delivering the basic services that are required to keep the city moving. Foundational services that are expected by our citizens are fundamental to the success of *The Way We Move*. [Section 6.0]

Asset Management and Maintenance

- Taking care of our current infrastructure is also very important for success in achieving *The Way We Move*. In this section, the major renewal projects for LRT, buses and roads are outlined, with an overview of the goals that are supported. [Section 7.0]

Planning for the Future

- New infrastructure to support the Goals is also very important. In this section, the major growth projects and initiatives for active modes, LRT, buses and roads are outlined, with an overview of the goals that are supported. [Section 8.0]

Future Implementation Plans will be prepared in 2014 and 2017 to discuss what has been accomplished, set projects for the following ten years, align with the capital budget cycles, and respond to changes in the Progress Measures. Each Implementation Plan will be presented to Council for information.



1.3 Alignment with Other Strategic Plans

The Way We Move is guided by and designed to achieve the City Vision. City Council has identified six ten-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 to implement the City Vision. *The Way We Move* is consistent with and supportive of these goals.

The City has been guided recently in the completion of a number of Transformational Projects which will significantly affect the way Edmonton is perceived at the Provincial and National Scale as well as provide a source of civic pride for Edmontonians. These long term projects, such as the Arena District and City Centre Redevelopment, require careful attention to integration of sustainable transportation modes within the largest network. In addition, completion of the Southeast to West LRT and the Quarters Revitalization will shape the city for generations to come.

The implementation of *The Way We Move* will also be supported by actions undertaken by the five other City strategic plans known as the Ways: *The Way We Grow*, *The Way We Live*, *The Way We Green*, *The Way We Prosper* and *The Way We Finance*. In addition, implementation of each of these plans will rely heavily on successful implementation of key transportation projects. Some examples of this are discussed below:

- For *The Way We Green* building the LRT network and active transportation facilities enables citizens to shift from single occupant vehicles and reduce their reliance on fossil fuels and reduce transportation contribution to greenhouse gases. Expansion of active modes facilities supports the growth of healthy, active communities.
- For *The Way We Live* continued delivery of DATS to citizens is important for achieving goal "Edmonton is a caring, inclusive, and affordable community". Expansion of active modes facilities supports the growth of healthy, active communities.
- For *The Way We Grow* the new urban LRT system integrates transportation and land use by encouraging development around the stations and giving citizens the option to live near high quality transit to get to the places they need to go.

As demonstrated, the goals in each of these plans are highly related and interconnected and as a result, success in achieving *The Way We Move* is contingent on the success of each of these other plans and vice versa. Achievement of these plans will require us to work together as one City and as a result we have to set time aside in our workplans to achieve integration and work together.

The Way We Move is the long-range strategic plan that provides direct guidance to achieve the Strategic Goal: Shift Edmonton's Transportation Mode. However, *The Way We Move* provides a much broader scope of direction by laying out a framework to address all future transportation needs. *The Way We Move* provides guidance to establish a robust, integrated transportation system to address all aspects of transportation.



CITY VISION

THE WAY AHEAD



1.4 The Ways Implementation Plans

Strategic and Directional Planning

The Way Ahead - the City's strategic plan - was established by City Council in 2008 and updated in 2011. The plan contains:

- the 30-year City vision
- six 10-year strategic goals: Transform Edmonton's Urban Form; Shift Edmonton's Transportation Mode; Improve Edmonton's Livability; Preserve and Sustain Edmonton's Environment; Ensure Edmonton's Financial Sustainability; and Diversify Edmonton's Economy
- corporate outcomes, corporate performance measures, and three-year and 10-year performance targets for each strategic goal.

Directional plans, referred to as the Ways plans, guide the City's work to both achieve the 10-year strategic goals and to deliver existing services to citizens. Each of these plans addresses one of the six strategic goals. Directional plans are highly interdependent and reflect goals and objectives that impact, support and drive each other. Directional plans are:

- **The Way We Grow** - Municipal Development Plan
- **The Way We Move** - Transportation Master Plan
- **The Way We Live** - Edmonton's People Plan
- **The Way We Green** - Edmonton's Environmental Strategic Plan
- **The Way We Finance** - Edmonton's Financial Sustainability Plan
- **The Way We Prosper** - Economic Development Plan

Implementation Plans

Initiatives necessary to implement each of the Ways plans are summarized in a corresponding Ways implementation plan. With the complexity of urban environments, many of these initiatives are highly interdependent and impact and depend on each other for successful implementation and completion.

What's common between implementation plans

Implementation plans outline corporate and departmental actions to be undertaken over a 10-year period to achieve the Ways plans. Each plan:

- aligns to the corporate outcomes, performance measures and targets identified in *The Way Ahead* categorizes initiatives into one of five groupings:

- **What We Did** – projects completed from 2009-2011
- **What We are Currently Doing** – these are activities that were funded prior to 2012 and we will keep doing them unless otherwise directed
- **What We Will Do** – initiatives to be started in 2012-2014 as they were approved as part of the capital or operating budget or can be done with existing resource.
- **What We Could Do** – important priorities that advance the goals and are achievable in the 10 years based on today's funding sources.
- **What We Aspire To** – important priorities that may not be possible in the next four to 10 years and beyond as funding may not be in place.
- identify capital and operating funding needs and resource impacts on other departments.

What's unique between implementation plans

The implementation plans are unique and different due to the nature of the work to achieve the relevant strategic goal. The plans are organized and designed to respond to those differences. Plans vary in the following ways:

- *type of plan* - range from policy-oriented plans to infrastructure-based plans
- *type of initiatives* - some plans focus on initiatives around strategy and guideline development while others focus on specific projects
- *internal vs. external collaboration* - plans range in their need for external collaboration to implement their initiatives
- *cross-departmental participation* - initiatives in some plans are lead and controlled primarily by one department while other plans rely extensively on others for successful implementation, resourcing and completion of initiatives
- *type of resourcing* - resourcing requirements to implement initiatives varies between plans; some are more capital resource intensive, while others are more operating intensive, relying on existing resources to complete initiatives
- *structure of plan* - initiatives are aligned to one goal and/or objective or to many goals and objectives.

Summary of uniqueness between Implementation Plans

	The Way We Grow	The Way We Move	The Way We Live	The Way We Green	The Way We Finance	The Way We Prosper
Type of Plan	policy	infrastructure & policy	infrastructure & policy	policy	policy & financial modeling tool	policy
Type of initiatives	strategy/ policy & guidelines	strategy/ guidelines & projects	strategy/ guideline & projects	strategy/ guideline	strategy/ policy	strategy/ policy
Collaboration	internal and external	internal & external	internal & external	internal & external	mostly internal	external & internal
Cross- departmental participation	cross- departmental	cross- departmental	cross- departmental	cross- departmental	cross- departmental	cross- departmental
Resourcing	operating	capital & operating	operating & capital	operating & capital	operating	operating
Plan structure	initiative to goal	initiative to many goals	initiative to goal	initiative to objective to goal	may have initiatives; a financial modeling tool	action plans to initiatives to goals

2.0 A LOOK BACK AND A LOOK FORWARD

2.1 Investments Towards *The Way We Move*

Over the past ten years, the City of Edmonton has made significant investment in Edmonton's transportation system, including both infrastructure and operations. This has provided residents with greater transportation choice and improved network efficiency.

2.1.1 Investment in Goods Movement and Roads

There has been a number of dollars invested in goods movement and roads, such as construction of interchanges on 23 Avenue/Gateway Boulevard, Calgary Trail/Ellerslie Road, Whitemud Drive/34 Street, and along Yellowhead Trail at 156 Street and 184 Street. Corridors have also been added to expand the route options of goods movement, such as the extension of Terwillegar Drive. Investment in bridges has also occurred to improve the ability to cross the North Saskatchewan River and maintain user safety, including the Clover Bar Bridge, and major rehabilitation of the Capilano, High Level, Low Level, James MacDonald and Quesnell Bridges.

The past decade has also seen the Province construct and continue the expansion of Anthony Henday Drive. The southwest leg was opened in 2006, the southeast leg in 2007 and the northwest leg in 2011.

As Edmonton has expanded in geographic area into the west, southwest and southeast, there has also been a major expansion of the arterial road network to serve these areas. Much of the capital cost for this expansion has been funded by private developers through the Arterial Roads for Development Bylaw 14380, otherwise known as the Arterial Road Assessment (ARA) program.

2.1.2 Investment in Neighbourhoods

In 2009, City Council proactively supported the establishment of a Neighbourhood Renewal Program. This program outlines a cost-effective, long-term strategic approach to address Edmonton's neighbourhood infrastructure needs, and the renewal and rebuilding of roads, sidewalks, and streetlights in existing neighbourhoods. Funds were allocated from Government of Alberta programs, and a tax levy funding pool was established to cover remaining municipal costs and guarantee an ongoing commitment to renewing neighbourhood infrastructure.

2.1.3 Investment in Transit

The last decade has also seen investment in projects that give Edmontonians a greater variety of transportation choices. The South LRT has been expanded with the opening of South Campus, Southgate and Century Park Stations. In addition, Clareview and Belvedere Stations have been upgraded. The Centennial Garage was opened in 2011, which is the first new garage for ETS in 25 years. There has also been the start of construction of the LRT line to NAIT and approval of about 40 km of planned routes that would extend LRT to the north, northeast, south, southeast and west.

Bus service has also been expanded with new or upgraded transit centres at Mill Woods, Heritage, Kingsway, Castle Downs, Leger, South Campus, Meadows, Lewis Farms, Eaux Claires, and the upgraded Southgate Transit Centre. The Belgravia Busway opened and bus lanes along key corridors have been added. There were over 180 buses added to the bus fleet to provide expanded service such that the fleet is now fully accessible.

2.1.4 Investment in Active Modes

In the latter half of the decade, increased investment in active modes of transportation has occurred, with the development of an Active Transportation Policy that supports the implementation of the updated Bicycle Transportation Plan and Sidewalk Strategy.



2.2 A Look Forward

Some of the key challenges and opportunities that *The Way We Move* Implementation Plan is responding to are outlined below. Many of the challenges mentioned are not unique to Edmonton—they are national and global challenges, as cities continue to grow and urbanize.

- GROWING POPULATION** Edmonton is the fifth-largest of Canada's municipalities with a population of approximately 810,000. It is part of a thriving region that currently includes over one million people. Over the next 30 years, Edmonton's population is expected to exceed one million people, while the region is anticipated to exceed a population of 1.6 million people. This growth will bring about enormous levels of challenge and opportunity, as with new people come new ideas, perspectives and attitudes. These may help move the City in its desired direction in the delivery of services to new people, businesses and industries.
- CHANGING DEMOGRAPHICS** In the next 30 years there will be significant population growth in the City of Edmonton. Increases in 65+ age group, sustained immigration, and a growing number of young families will have a significant impact on future travel patterns and associated transportation system requirements. This may also lead to positive changes in the way the transportation system grows to accommodate changing needs on non-auto modes of transportation and push for further improving the accessibility of the city.
- ENERGY** (From *The Way We Green*) Global consumption of fossil fuels has nearly doubled every 20 years since 1900. Fossil fuels (mainly oil, coal and natural gas) currently provide more than 90 per cent of the world's total energy. While ongoing debate occurs on the quantity of fossil fuels that remain available, there is general agreement that societies that continue to rely on inexpensive oil and gas will become increasingly vulnerable to supply disruptions and higher prices. Although this challenge will be mainly addressed through *The Way We Green*, there is an opportunity for *The Way We Move* to play a role in providing infrastructure so that citizens are able to shift from single occupant vehicles and reduce their reliance on fossil fuels.
- CHANGING BEHAVIOURS** Edmonton residents make about 2.5 million trips on a typical fall weekday. Currently, over 75 per cent of these trips are made in an auto. One of the key directions of *The Way We Move* is that more people use transit and active modes as a preferred transportation choice. Fundamentally important to the successful implementation of *The Way We Move* is the understanding that this plan involves changing behaviours. Recent surveys on attitudes towards transportation conducted by the City found that 70 per cent feel that "Edmontonians need to drive less"¹. The time is right to tap into Edmontonians' growing awareness of the need for a mode shift.
- BALANCING GROWTH AND RENEWAL** With both an aging and growing city, balancing investment choices between renewal and growth is a significant challenge. Public infrastructure is essential to all residents and businesses and critical to the competitiveness of our economy, the quality of life citizens enjoy and the delivery of public services. The ability to build and properly maintain infrastructure assets is essential to ensure Edmonton can provide services and remain an attractive and cost-effective place to live and do business.
- FUNDING CHALLENGES** Implementation of large-scale infrastructure projects such as LRT and major roadway improvements requires funding from other levels of government. The current global economic downturn has resulted in constrained funding and there are many competing priorities for the same dollars, such as education and health care. The City is seeking innovative funding and partnership models that will help advance the actions necessary to make Edmonton one of Canada's most livable cities. The City of Edmonton is committed to leveraging dollars from other orders of government and community partners to maximize its investments.

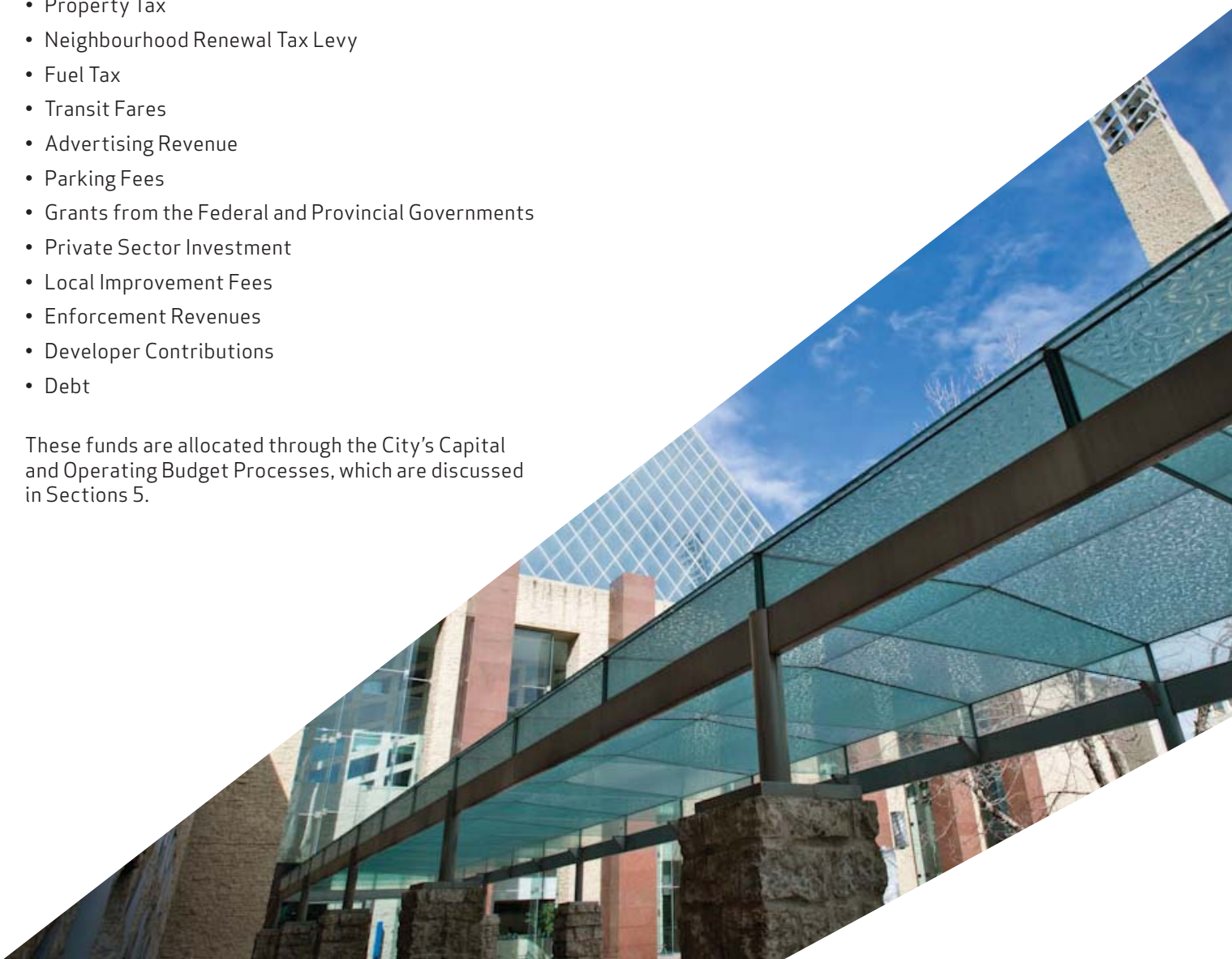
¹ City of Edmonton & Leger Marketing, *The Way We Move* Social Marketing Research, Fall 2011.

3.0 FUNDING

The City of Edmonton uses a diverse set of sources to fund investments in its transportation infrastructure. Most of the sources vary from year to year, but there is a general level of base funding that is generated locally or from longer term commitments from higher orders of government. Some of the funds Edmonton receives are project specific or project type specific. The funding sources listed below provide the dollars for implementing projects that support *The Way We Move*. A more detailed description of the funding sources can be found in Appendix 2.

- Property Tax
- Neighbourhood Renewal Tax Levy
- Fuel Tax
- Transit Fares
- Advertising Revenue
- Parking Fees
- Grants from the Federal and Provincial Governments
- Private Sector Investment
- Local Improvement Fees
- Enforcement Revenues
- Developer Contributions
- Debt

These funds are allocated through the City's Capital and Operating Budget Processes, which are discussed in Sections 5.



4.0 OUTCOMES, PERFORMANCE MEASURES AND TARGETS

4.1 *The Way We Move* Progress Measures

Progress Measures monitor the progress towards the Goals, and the Targets provide accountability for achievement of the Measures, Goals and direction of *The Way We Move*. When the Targets are aligned with funding, they provide an indication as to whether existing funding levels are sufficient to achieve the Goals, and allow City Council to shift funding if necessary. The Progress Measures are updated and reported each year to allow for the Implementation Plan to respond to the Measures. It may be necessary to shift funding or start new projects depending on the progress towards the Measures and Targets. It may also be necessary to refine the Targets, Measures and

budget based on how quickly or slowly the Goals are being met and when new information is available. For more information on Progress Measures, please see the companion document, *The Way We Move* Progress Measures Report 2012.

Corporate Measures and Targets were developed by Council to advance *The Way Ahead* and *the Ways* plans. The Corporate Measures are shown on the following page, and the Targets for these Measures were approved by Council in 2011.




CORPORATE OUTCOMES	CORPORATE MEASURES	3-YEAR TARGETS	10-YEAR TARGETS
CITIZENS USE PUBLIC TRANSIT AND ACTIVE MODES OF TRANSPORTATION	<ul style="list-style-type: none"> Transit ridership per capita Overall transportation mode split 	<ul style="list-style-type: none"> Increase to 100 rides per capita Overall mode split is typically measured once a decade (no 3-year target) 	<ul style="list-style-type: none"> Increase to 107 rides per capita Auto driver: -2% Auto passenger: +0.5% Transit: +1% Walk: +0.3% Cycle: +0.2%
GOODS AND SERVICES MOVE EFFICIENTLY THROUGH THE CITY	<ul style="list-style-type: none"> Business satisfaction survey on the transportation system Travel time and reliability for goods and services movements on select corridors 	<ul style="list-style-type: none"> Increase business satisfaction survey results to 51% satisfied or very satisfied Maintain a weighted average trip time below 75+/-7 seconds per kilometre 	<ul style="list-style-type: none"> Increase to 55% satisfied or very satisfied Maintain a weighted average trip time below 75+/-7 seconds per kilometre
THE TRANSPORTATION SYSTEM IS INTEGRATED, SAFE AND GIVES CITIZEN CHOICE TO THEIR MODE OF MOVEMENT	<ul style="list-style-type: none"> Rate of collisions at intersections per 1,000 population Rate of transportation-related injuries per 1,000 population Rate of criminal code incidents on transit per 100,000 rides Proportions of missing links of sidewalk and shared-use paths constructed in existing areas of the City Proportions of total planned kilometres of on-street cycling facilities implemented 	<ul style="list-style-type: none"> 15.8 vehicle collisions at intersections per 1,000 population 7 or fewer transportation related injuries per 1,000 population 1.02 incidents per 100,000 ridership 150 km of sidewalks and shared-use paths to be constructed 120 km of the on-street cycling network constructed 	<ul style="list-style-type: none"> 13.5 vehicle collisions at intersections per 1,000 population 7 or fewer transportation related injuries per 1,000 population 0.87 incidents per 100,000 ridership 500 km of sidewalks and shared-use paths to be constructed[*] 400 km of the on-street cycling network constructed

* The targets for this measure represent the anticipated length of missing links of sidewalks and shared use paths, which is one aspect of the infrastructure plan for the Sidewalk Strategy. The measure indicates the percentage of progress towards the 10-year target. Meeting the three-year target represents 30% of the 10-year target.






PROGRESS MEASURES SUMMARY



















LEGEND




















STATUS DESCRIPTION

	Measure is currently on track to meet established target
	Measure is moderately off of established targets
	Measure is not meeting established targets
TBD	In development
N/A	Not available, outdated, or only one year of data available.

TREND DESCRIPTION

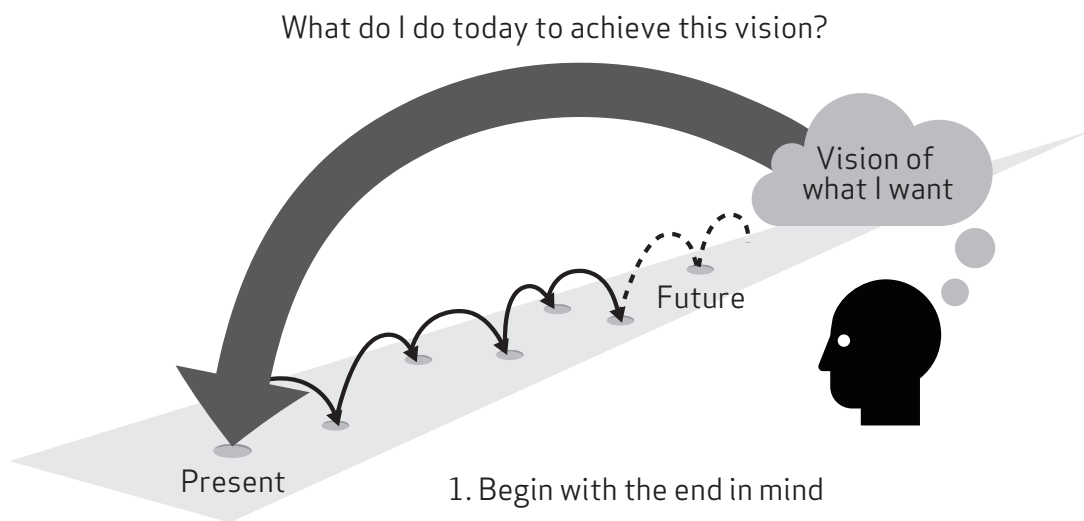
	Measure is trending favourably up over last reporting period
	Measure is trending unfavourably up over the last reporting period
	Measure has not changed substantially over last reporting period
	Measure is trending unfavourably down over last reporting period
	Measure is trending favourably down over the last reporting period

STRATEGIC GOAL	STATUS	TREND	LAST DATA YEAR
TRANSPORTATION AND LAND USE	N/A		TL.1 Average Commute Distance 2006
	TBD	N/A	TL.2 Count of Dwelling Units within 400 m of Existing LRT Stations and Transit Centres N/A
	TBD	N/A	TL.3 Commercial and Institutional Floor Area within 400 m of Existing LRT Stations and Transit Centres N/A
ACCESS AND MOBILITY			AM.1 Proportion of Missing Links of Sidewalk and Shared-use Paths Constructed in Existing Areas of the City 2011
			AM.2 Proportion of Total Planned Kilometres of On-street Cycling Facilities Implemented 2011
			AM.3 DATS Ride Accommodation Rate 2011
			AM.4 Number of Transportation System Management Tools Implemented 2011
			AM.5 Travel Time and Reliability of Goods and Services Movements on Select Corridors 2011
		N/A	AM.6 Travel Time and Reliability for Transit between Select Origins and Destinations 2010
TRANSPORTATION MODE SHIFT	N/A		TM.1 Overall Mode Split 2005
	N/A		TM.2 Commute to Work Mode Split 2006
			TM.3 Transit Ridership per Capita 2011
			TM.4 Vehicle Registrations per Capita 2011

STRATEGIC GOAL	STATUS	TREND		LAST DATA YEAR
SUSTAINABILITY	Statistic Only		SU.1 Transportation Sector Greenhouse Gas Emissions per Capita	2010
	Statistic Only	N/A	SU.2 Asset Sustainability Ratio for Transportation	Revised Measure
	Statistic Only		SU.3 Proportion of Average Edmonton Household Expenditures that are Spent on Transportation	2009
HEALTH AND SAFETY			HS.1 Rate of Vehicle Collisions at Intersections per 1,000 Population	2011
			HS.2 Rate of Transportation-related Injuries per 1,000 Population	2011
			HS.3 Rate of Criminal Code Incidents on Transit per 100,000 Ridership	2010
WELL MAINTAINED INFRASTRUCTURE			WM.1 Condition Rating Distribution for Arterial Roads	2010
			WM.2 Condition Rating Distribution for Neighbourhood Roads	2011
			WM.3 Condition Rating Distribution for Bridges	2011
			WM.4 Instances of Snow Removal from Major Roads within 48 Hours of a Snow Plow Event	2011-12 Winter Season
ECONOMIC VITALITY			EV.1 Number of People Entering the Downtown by All Modes	2009
		N/A	EV.2 Results of the Business Satisfaction Survey on the Transportation System	2011

5.0 MAKING IT HAPPEN

To achieve the vision of *The Way We Move*, the City will have to advance projects that best support the vision and balance the funding and political realities of the short term. To do this, we will use one principle from The Natural Step, where we will be strategically firm but tactically flexible in each step that we take to get there, as shown in figure below. The projects, plans and initiatives presented in the Implementation Plan will help the City move towards this vision, but will be flexible in the short term.



1. Begin with the end in mind
2. Move backwards from the vision to the present
3. Move step by step towards the vision

Source : The Natural Step



5.1 Social Marketing Plan

One of the Strategic Goals is to Shift Transportation Modes. Edmonton residents make about 2.5 million trips on a typical fall weekday and currently over 75 per cent of these trips are made in an auto. *The Way We Move* does not aim to force residents to shift all trips, but aims to encourage each of us to consider making a change for one or more, or many of our trips. If every Edmontonian makes one shift per week, the cumulative effect can be substantial.

A priority to achieve *The Way We Move* is to enhance transportation options. Values, however, do not change along with infrastructure. Essential to the implementation of *The Way We Move* is an engaged community inspired to change the way we get around our city. To be successful, *The Way We Move* must help Edmontonians understand the impact of their transportation choices, know their options, and be inspired to choose and advocate for more sustainable modes.

A social marketing program that shifts transportation behaviours begins by talking to Edmontonians to learn what motivates and prevents that shift. Broad-reaching information campaigns combined with community-based programs will build awareness and educate residents about transportation options. Edmontonians will be inspired to change as these programs help them to see the benefits and overcome the obstacles of exchanging the car keys for another mode, like cycling or transit, even once a week.

As we begin to encourage change in Edmontonians, the City of Edmonton will lead the way. City staff will benefit from the same information campaigns offered to other residents and from the same or similar programs. By modeling the way, the City of Edmonton can inspire businesses and residents.

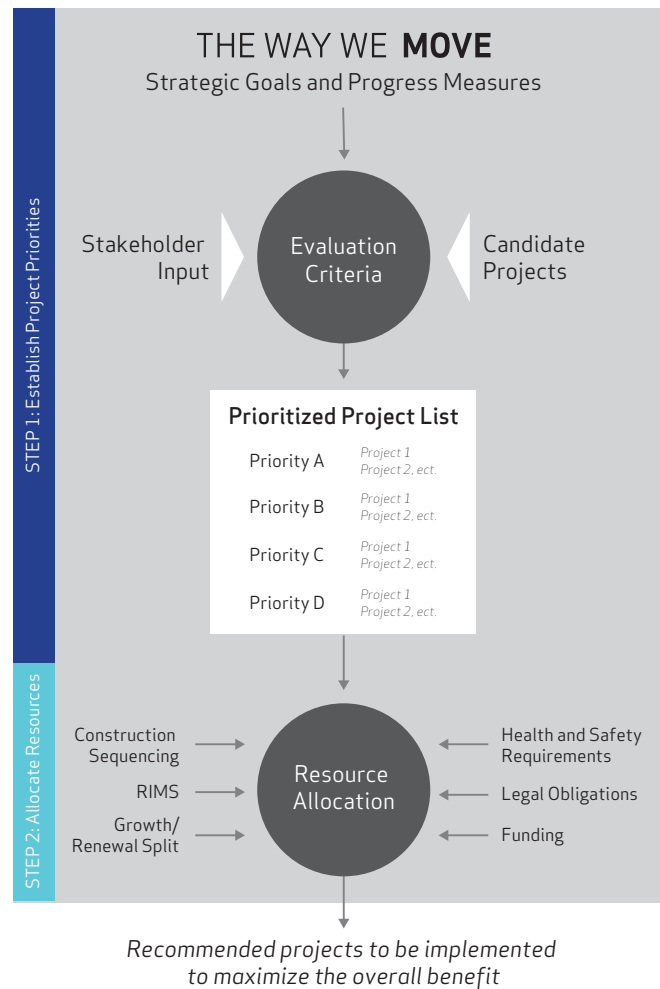


5.2 Project Prioritization Models

To determine the projects included in the categories *What We Will Do*, *What We Could Do* and *What We Aspire To*, a project prioritization model was developed for capital and operating initiatives. For the Capital Budget, the development of this model also responds to the 2006 audit of the Transportation Planning Branch that recommended that the branch develop a transportation decision model with appropriate criteria for selection of department priorities.

The Capital Budget Project Prioritization Model is a two-step approach, as shown in the following figure: evaluate priorities and then allocate resources. First, a project is evaluated to determine how much it contributes to the criteria that represent the strategic goals of *The Way We Move*. Appendix 3 provides the detailed criteria for capital growth projects. Using this evaluation, the projects are grouped in priority A, B, C, D and E projects, with priority A projects being the highest priority. Step two is resource allocation, where external funding opportunities, legal requirements, health and safety requirements, construction sequencing of projects, and growth versus renewal splits are applied. To prioritize operating initiatives, a two step evaluation

Capital Project Prioritization



was used as shown in the following diagram. This model was used to aid in developing a list of recommended projects (*What We Will Do*). Operating initiative ideas were gathered from consultation with various level of department staff with the goal of improve services to citizens, realizing cost efficiencies or advancing strategic priorities of Council. The large number of potential initiatives was refined and presented to senior management. The complete list of operating initiatives is contained in Appendix 4 and defines what Transportation Services will do for 2012 to 2014

Operating Project Prioritization



It should be noted that the prioritization model is only a tool to assist in the decision-making process and that the final decision on project priorities rests with City Council. Appendix 5 shows a detailed overview of the approved Capital budget for 2012-14.



5.3 Investment Strategies

Resourcing *The Ways* Implementation Plans

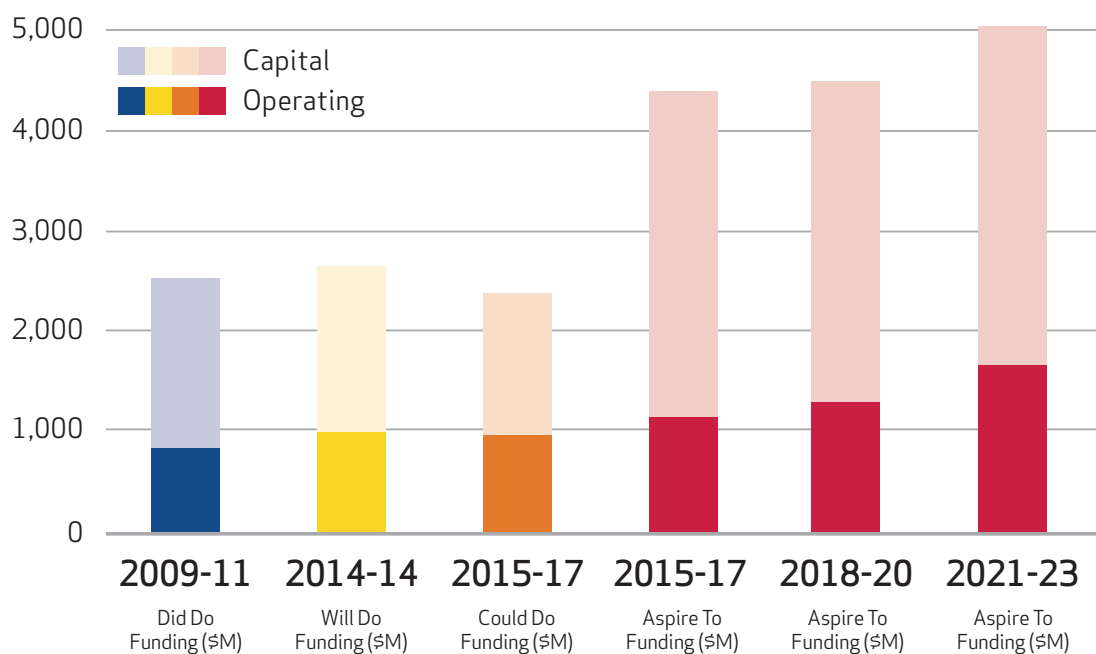
The City's vision builds on the strong base of programs, services and amenities that already exist. However, there are many choices that could be made as the City continues to grow. The initiatives outlined in the implementation plans provide the means to action the corresponding Ways Plan. They help direct our work towards achieving the City of Edmonton vision.

Through identifying initiatives, the implementation plan provides enhanced information for decision-making related to programs, services, and infrastructure. Initiatives, and the magnitude of resources required to fulfill them, help to inform prioritization and resource planning, particularly where limited resources need to be allocated amongst competing demands.

The following chart provides a general picture of the magnitude of spending associated with realizing the initiatives, along with how soon they can be accomplished.

As an outline of the next 10 years, the graph below shows five capital budget periods, from 2009 to 2023. For the next capital budget period, 2015-17, two general scenarios were developed. 'Could Do' represents the funding requested as an extension of the 2012-14 commitments in key areas related to infrastructure renewal. A different scenario, the 'Aspire To' scenario, includes additional operating and capital spending needed to meet Council targets. 'Aspire To' scenarios have been developed for the next three capital budget cycles, projecting requirements with well over \$1 billion dollars annually in capital and operating funds.

Funding levels to meet 'Aspire To' levels will require significant new resources, likely from coordination between multiple levels of government. Even with additional funding, choices will need to be made regarding borrowing, project timing and goal priorities. Still, the intent of these scenarios is to show that achieving a common vision is not impossible or unattainable.



5.4

The Relationship between Operating and Capital Funding

The relationship between operating and capital funds has a significant effect on the implementation scenarios. The 'Could Do' scenario generally reflects a level of activity that is achievable within current operating budgets, however additional capital is needed for key projects, such as infrastructure renewal. 'Aspire To' reflects a significant increase in both capital and operating budgets.

To date, Council has dedicated significant resources to achieve the City Vision and department Goals outlined in *The Way We Move*. This has required a mix of capital and operating spending, which are established through separate budgeting processes. There is a need to recognize the complex interactions between capital and operating spending. In general, they are linked by four themes:

- **Capital spending on asset renewal is strongly linked to operating maintenance required.** In the past, due to funding pressures during the capital budget process, spending on renewal or replacement of obsolete assets or assets that have reached the end of their lifespan has been deferred. This creates an infrastructure 'debt' that requires additional capital spending in future periods and increases the operating budget required to maintain the asset in a serviceable condition for the current period. An example of this situation is bus renewal, whereby deferring capital investments in bus replacement increases the operating cost to maintain the aging fleet.
- **New infrastructure often requires additional operating budget.** As new infrastructure is constructed, operating spending is often required to maintain and operate the infrastructure. An example of this is for the North LRT, where capital was funded in part through Provincial grants. However the ongoing operation of the LRT is entirely the responsibility of the City of Edmonton.
- **Operating services require capital budget support.** In the broadest sense, all City services have some associated capital requirements such as buildings, vehicles and equipment. However, certain areas have significant capital requirements governed by operating initiatives or program service level requirements set in policy standards. For example, fleet purchases for transit buses are determined by the need to support operating program service levels.
- **Capital investments can decrease net operating requirements.** Certain types of projects, usually related to implementing advancements in technology, create operating efficiencies or generate additional revenue. An example of this would be LED streetlight renewal, where an increased spending in the capital budget will decrease net operating requirements.

5.5

Alignment with *The Way We Move* Strategic Goals

All initiatives and services delivered by Transportation Services align with one or more of the strategic Goals within *The Way We Move*. Project alignment is demonstrated by attributing the following icons, which represent the seven strategic goals.

**Transportation and Land Use Integration**

The transportation system and land use/urban design complement and support each other. These ensure that the use of transit and transportation infrastructure, including transit, 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. This provides reasonable access with a variety of modes for people across demographic, geographic, socio-economic, and mobility spectrums.

**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.

**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 services—contributing to Edmonton's livability.

**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 accommodate future growth 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 enhance the economic vitality and competitive advantage of Edmonton and the region.



6.0 FOUNDATIONAL SERVICES

Building a 21st Century city—shaping an Edmonton that will meet the needs of our diverse and growing population—is not just about building new infrastructure. In many cases it is important to continue doing *What We are Currently Doing*. There are many plans and programs that keep the city moving. Continued success in these areas is foundational to the successful implementation of *The Way We Move*.

TRANSPORTATION SERVICES represents a significant portion of the City's resources. Approximately one-quarter of the City's workforce makes up the Transportation Services' five branches:

- Edmonton Transit
- Transportation Operations
- Transportation Planning
- Roads Design and Construction
- LRT Design and Construction

Annual operating costs for the transportation system represent approximately one-third of the City's operating budget.

WHAT WE ARE CURRENTLY DOING

Workplace Safety

- › A number of citizens are employed by the City, either directly or as contractors; our practices must ensure a safe work environment.

Environmental Protection

- › The Transportation Services is fully ISO 14001 compliant and we strive to deliver our services in a manner that protects our environment.

EDMONTON TRANSIT SYSTEM (ETS) plays a critical role in connecting people, businesses and citizens within Edmonton and the Capital Region. Edmonton transit ridership has grown steadily for several years and reached 80.3 million in 2011. Cumulative ridership is estimated to increase 7.9% over from 2011 to 2013.

WHAT WE ARE CURRENTLY DOING

Bus and LRT Transit

- › To meet ridership demands, ETS employs over 2,100 employees and provides over 2 million service hours annually. Bus operations has a fleet of 953 buses operating on 189 different bus routes serving 26 transit centres. LRT operations has 74 Light Rail Vehicles (LRVs) that operate between 15 LRT stations.

DATS

- › Offers door-to-door service for adults who cannot use conventional service for trips due to physical or cognitive disability. Wheelchair lift-equipped vans, minivans and passenger vans are used to provide DATS service to over 10,000 registrants.

Transit Safety and Security

- › Safety within ETS is achieved through an integrated service delivery model comprised of an appropriate balance of community consultation, partnership, prevention, and enforcement.

TRANSPORTATION OPERATIONS enables the smooth operation of the existing transportation network. Branch activities include a wide range of services that affect all citizens, including operating the traffic signal network, snow and ice control, maintaining street lighting, and performing roadway maintenance, including neighbourhoods.

WHAT WE ARE CURRENTLY DOING

Traffic Signals

- › Properly functioning traffic signals allow Edmonton's traffic to flow smoothly and safely. The City of Edmonton owns and operates over 1,100 traffic signals.

Street Lighting Infrastructure and Operations

- › The City of Edmonton owns approximately 98,300 streetlights and pays for the operation and maintenance of these lights.

Traffic Signs

- › Traffic control signs are essential for the safe direction of vehicles and people. The City of Edmonton maintains approximately 130,000 traffic control signs. The traffic control sign inventory includes overhead signs, ground mount information signs, and standard road signs.

Basic Roadway Maintenance

- › Winter and summer road maintenance is an important service for citizens. This includes, snow and ice control, spring clean-up, pothole filling, patch paving, sidewalk repair, street cleaning, and bridge maintenance.

Snow and Ice Control

- › The City of Edmonton is committed to providing snow and ice control that will make it possible for citizens to travel more safely. In any given snow event, Transportation Services has a priority system to keep traffic flowing smoothly: cross-river roadways, hills and overpasses, arterial roads, collector and bus routes, roads adjacent to schools, hospitals and homes for the aged, and rural roads - in accordance with the City's Snow and Ice Control Policy (City Policy # C409G).

WHAT WE ARE CURRENTLY DOING

...Continued

Snow Storage Sites

- › All snow picked up throughout the City is taken to one of Edmonton's snow storage facilities. These facilities are governed by Provincial and Federal environmental regulations. The City's snow storage facilities have meltwater ponds with liners to protect the groundwater and soil from contaminants like salt, sand, antifreeze and engine oil. When the snow melts in spring, the sand is collected and cleaned so that it can be reused the following winter.

Engineering Services

- › This group performs materials research and testing, quality assurance, and structural design and analysis of pavements; coordinates the aggregate recycling program; provides construction surveying, geotechnical engineering, and noise and vibration monitoring services; and monitors and repairs landslides and erosion control.

Office of Traffic Safety

- › The Office of Traffic Safety (OTS) collaborates with Edmonton Police Services (EPS), Edmonton Federation of Community Leagues (EFCL), Edmonton Public Schools Board (EPSB), Edmonton Catholic School District (ECSD) and other traffic safety organizations, to address urban traffic safety through education, engineering and enforcement. OTS oversees automated enforcement program and performs traffic safety reviews and analysis of collision data. Based on an evidence based philosophy, OTS reviews and recommends initiatives and community safety programs.

TRANSPORTATION PLANNING includes both long- and short-term planning activities for all transportation modes in Edmonton. The development and implementation of strategic plans and policies guides department actions in order to achieve the overall Vision as described in *The Way We Move*. The branch also performs ongoing reviews of infrastructure put in place by the City and developers to ensure that well-planned projects are being implemented on a day-to-day basis. Public consultation and engagement is another key aspect of all transportation planning initiatives.

WHAT WE ARE CURRENTLY DOING

Development Application Reviews

- › Development Planning and Engineering reviews and approves the transportation components of land use plans and engineering designs for new growth areas. These carry into inspection and acceptance of the entire City's private roadway development.
- › Liaises with Sustainable Development throughout land development process.
- › Administers and applies the Arterial Roadway Assessment Bylaw.

Sustainable Transportation

- › Leads the implementation of the City's Active Transportation Policy and coordinates capital construction of bicycle and pedestrian infrastructure.
- › Conducts development reviews and liaises with Sustainable Development for the central area.

WHAT WE ARE CURRENTLY DOING

...Continued

Data Collection and Evaluation

- › Collects and maintains traffic and public transit data that is the foundation of transportation decision-making.
- › Employs transportation forecasting models to project future scenarios for transportation planning, including vehicle emissions forecasting and traffic microsimulation modeling.

Budget Coordination

- › Coordinates development of the three-year and 10-year Capital Priority Plan (CPP) and the operating budget for Transportation Services.

Strategic Planning and Policy Development

- › Develops and implements the Transportation Master Plan and its supporting strategic plans, guidelines, and policies.

Facility Planning and Conceptual Design

- › Develops concept plans for roadway, walking and cycling infrastructure and major transit infrastructure.
- › Coordinates with Design and Construction groups as projects proceed to further detailed design development.

Public Involvement

- › Leads engagement and communication with public stakeholders in accordance with the City's Public Involvement Policy (City Policy #C513).
- › Provides useful and timely information to citizens regarding transportation department activities, such as road closures and parking bans.

ROADS DESIGN AND CONSTRUCTION provides engineering and project management services to maintain the roadway system within the City of Edmonton.

WHAT WE ARE CURRENTLY DOING

Engineering and Project Management Services for Roads

- › The types of projects include freeway interchanges, bridge rehabilitation and reconstruction, active transportation facility construction, street lighting and alley projects, major roadway corridor rehabilitation and reconstruction and streetscape projects.

Coordination with the Office of Great Neighbourhoods.

- › Roadway Design and Construction provides engineering support for the Neighbourhood Renewal Program (NRP). This program outlines a cost effective, long-term plan to address the needs of Edmonton's neighbourhood roads, sidewalks and streetlights. The program involves the renewal and rebuilding of roads, sidewalks and streetlights in existing neighbourhoods and collector roadways.

LRT DESIGN AND CONSTRUCTION provides engineering and project management services for LRT projects.



WHAT WE ARE CURRENTLY DOING

Engineering and Project Management Services for LRT

- › This branch is responsible for efficiently and effectively delivering LRT capital projects. This includes preparing detailed drawing to effective project management during construction. Efficient administration of these projects is key to ensuring funding agreements with other levels of government can be reached and honoured.



Foundational Services Initiatives

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
Comprehensive Transit Review	Lead Group: Office of the General Manager/ Edmonton Transit	This project was identified during the 2012 Operating Budget deliberation. It involves the review of a number of aspects in ETS, including (but not limited to) fleet, fare policy, regional governance, system design, etc.	      
Fare Policy Review	Lead Group: Transit Key Partners: Community Services	Develop a framework for how ETS charges for fares, including drivers for costs/revenues (distance, time, etc.)	   
DATS Eligibility Process Update	Lead Group: Transit Key Partners: Community Services	Introduce in-person assessments for DATS eligibility.	   
Trip Planner Strategic Review	Lead Group: Transit Key Partners: IT	Strategic Review of the Trip Planner and new technology required based on projects like SMART Bus, which will require integration of applications and consideration of the role of open source environments.	   
Student Outreach Programs to Support <i>The Way We Move</i>	Lead Group: Transportation Planning Key Partners: Transit	Programs that encourage elementary, junior and senior high students to develop transportation habits that support transit and active modes, have a significant potential to positively affect mode shift. New programs will be developed along with increased coordination of the programs that are currently in place.	      
Seniors Transportation Strategy	Lead Group: Transportation Planning Key Partners: Transit, Transportation Operations, Sustainable Development, Community Services	In view of demographic trends within the City of Edmonton, addressing the needs of a growing senior population is critical. This would include a review of all modes of the transportation network from a senior's point of view, ensuring the overall transportation system is efficient, accessible and senior-friendly.	   

7.0 ASSET MANAGEMENT AND MAINTENANCE

TMP Strategic Objective:

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

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 \$10.59 billion in 2010 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.

The City has a number of programs that focus on the renewal of our existing transportation system: neighbourhood renewal, roadway preventive maintenance and renewal, and transit renewal. Additional information on how the department has allocated dollars for each of the renewal programs can be found in Appendix 5: Capital Budget Information Sheets.

Risk Infrastructure Management System (RIMS)

The Office of Infrastructure develops and manages tools to assist the City as it deals with a growing and acute gap between available infrastructure funding and renewal needs. One of the tools developed is the Risk Infrastructure Management System (RIMS). Using a risk based approach to evaluate asset deterioration, the RIMS model has developed funding targets based on various asset classes, such as arterial roadway, streetlights, transit vehicles, and so on. The funding targets represent the required level of funding to stabilize asset risk within the next 30 years. These funding targets are included in the 'Aspire To' scenarios as appropriate.



7.1 Neighbourhood Renewal

- › **Lead Group:** Transportation Operations/
Roadway Design and Construction –
Neighborhoods Roadways
- › **Key Partners:** Office of Great Neighbourhoods
- › **Support of *The Way We Move*:**



One of the proactive approaches used by the City is the Neighbourhood Renewal Program (NRP), which is a cost-effective and strategic approach to ensure the City's neighbourhoods are sustainably maintained. The program involves approximately 300 neighbourhoods (including industrial) within the City of Edmonton. By effectively combining reconstruction, rehabilitation, and preventative maintenance, the NRP allows all Edmonton neighbourhoods to receive improvements within 30 years, whereas a reconstruction-only program would take many more years to complete at a significantly higher cost.

WHAT WE DID*Refer to Map*

The following map shows the neighbourhoods that were a part of the NRP in 2009-11.

In addition, approximately 96 km of mainly collector roadways were renewed in other neighbourhoods throughout the city.

WHAT WE WILL DO*Refer to Map and Table*

Neighbourhood Renewal Program	Total Annual Funding (in 2012 dollars)
WILL DO	\$114 million

Work planned for the 2012-14 Neighbourhood Renewal Program:

- Sixteen Neighbourhood Reconstructions (\$182 million over three years)
- Overlay and Microsurfacing of Neighbourhoods (\$50 million annually)
- Pavement Management Centre Relocation

The neighbourhoods that are part of the NRP in 2012 to 2014 are shown in the following map.

WHAT WE COULD DO*Refer to Map***COULD DO**

\$138 million

To achieve the department target of renewal activities in all neighbourhoods within 30 years, the ongoing program targets are:

- Five to six neighbourhood reconstructions (\$17.5 million each)
- Six overlay neighbourhoods (\$2.5 million each)
- Five microsurfacing neighbourhoods (\$500,000 each)

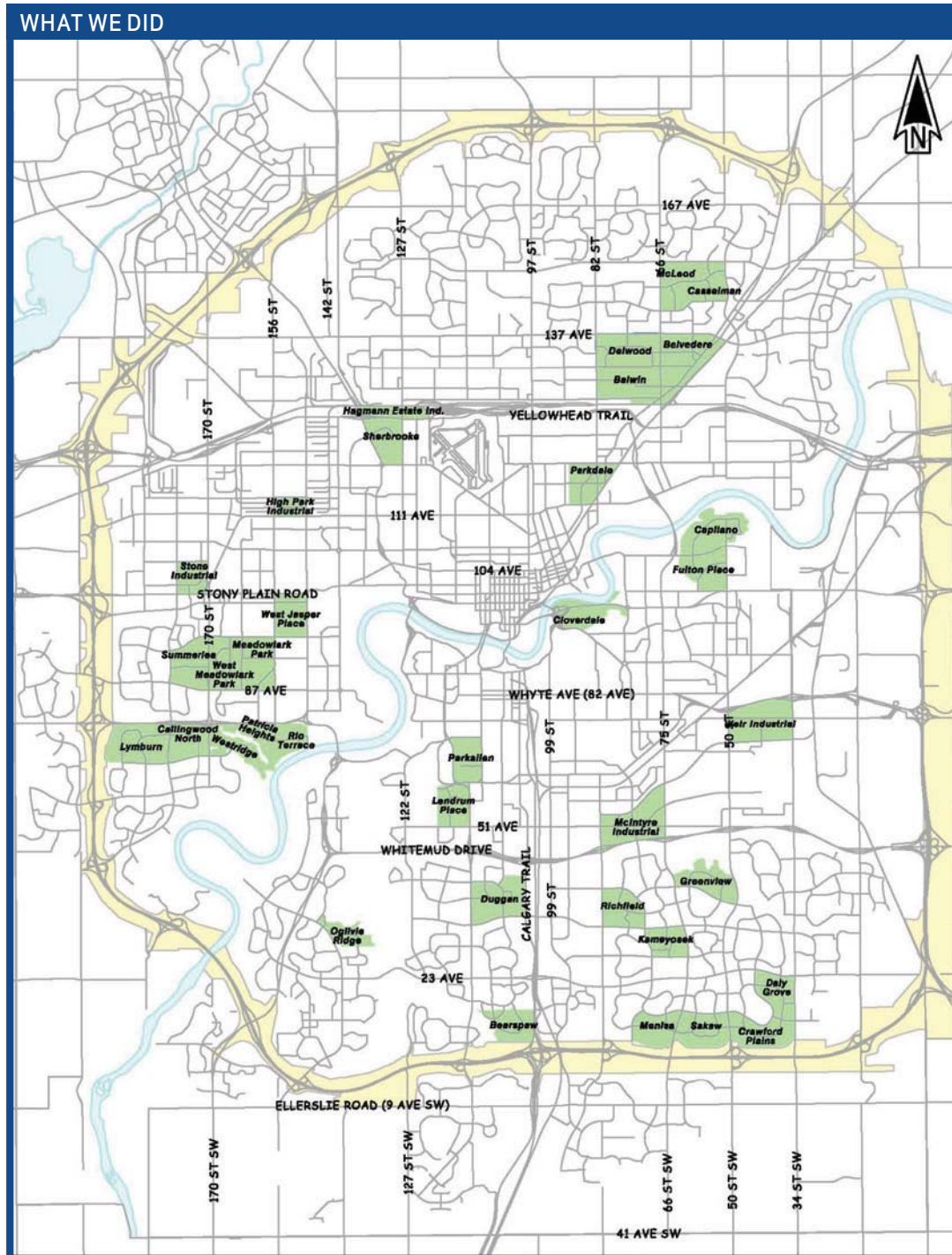
This program is fully funded based on Council budget motions and a dedicated tax levy. The following map shows the neighbourhoods planned for 2015-18.

WHAT WE ASPIRE TO**ASPIRE TO**

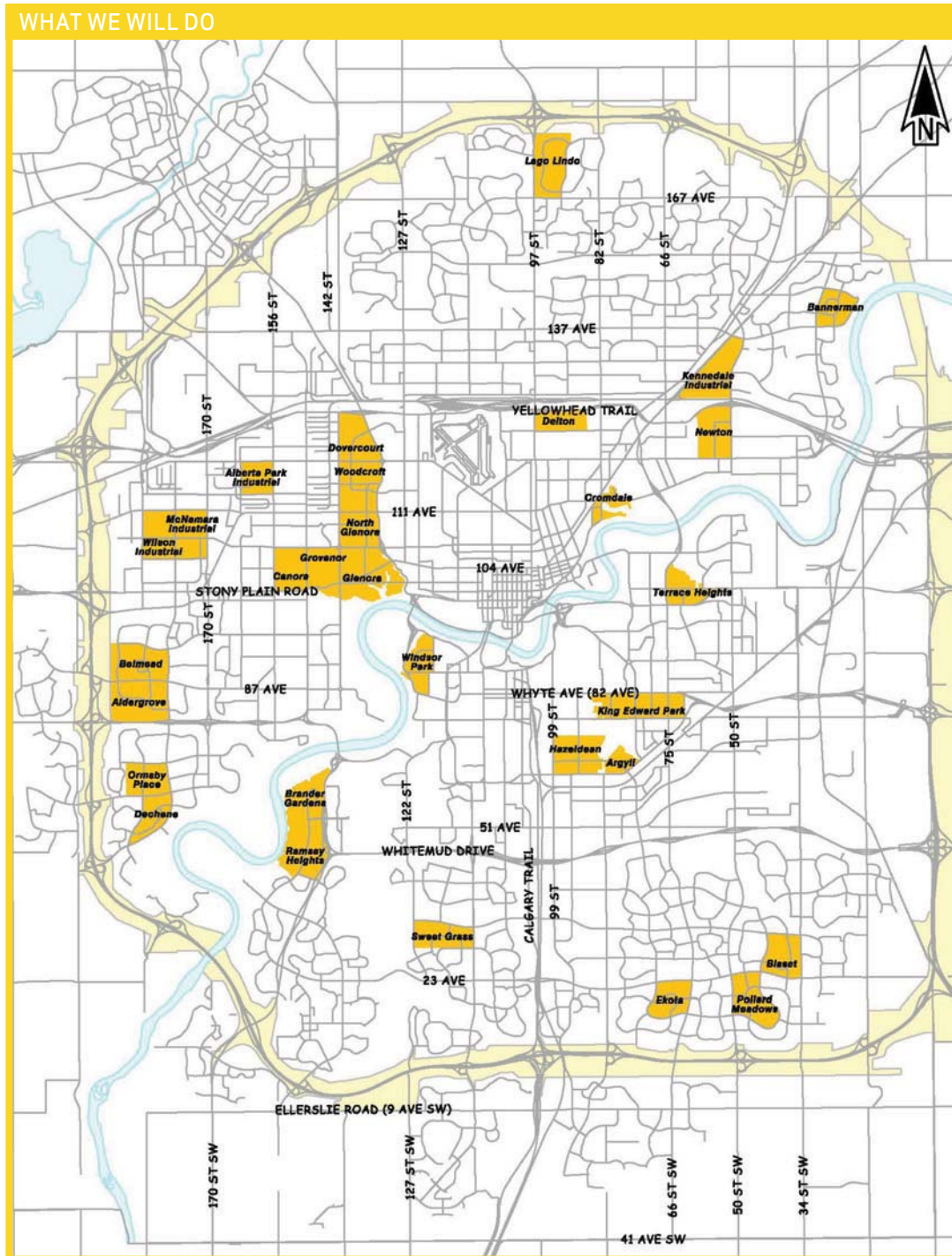
\$140 million

To achieve the department targets for neighbourhood condition ratings, the City needs to complete the program as outlined in the 'Could Do' scenario. This program is fully funded based on Council motions and a dedicated tax levy target of a 1.5% annual increase. The ultimate goal is a sustainable funding source that will allow renewal of infrastructure to keep pace with the annual rate of decay.

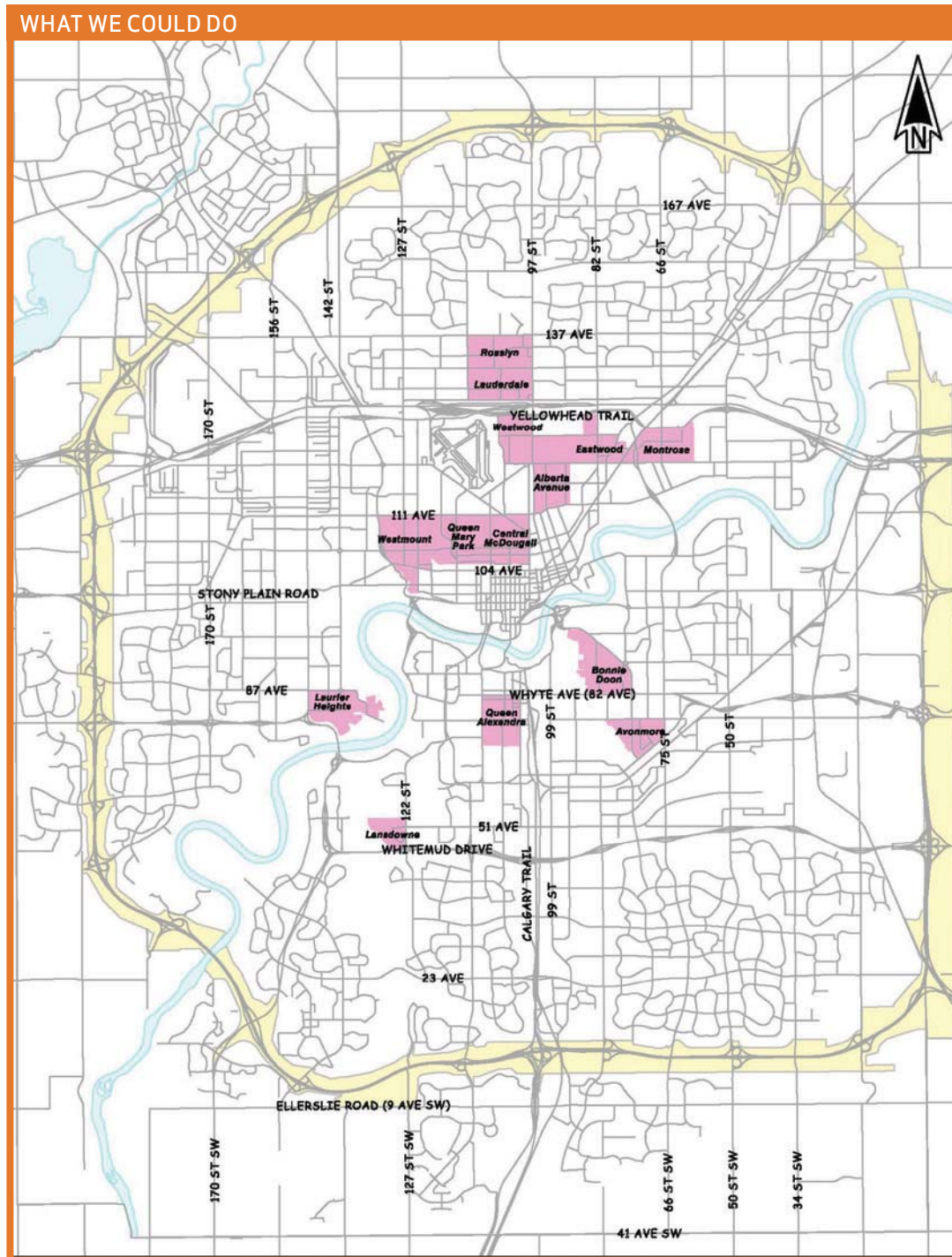
Neighborhood Renewal Program, 2009-2011



Neighborhood Renewal Program, 2012-2014




Neighborhood Renewal Program, 2015-2017



Note: Neighborhood Renewals for Alberta Avenue, Eastwood, Montrose, and Queen Alexandra have not yet been scheduled.

Neighborhood Renewal Initiatives

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
Pavement Management Centre Relocation (2014)	Lead Group: Transportation Operations Key Partners: Transportation Planning, Infrastructure Services, Sustainable Development	The pavement management Centre relocation is the construction of a facility that centralizes all pavement management staff into one location. These services are currently operated out of several temporary facilities throughout Edmonton.	



7.2 Arterial Roadway Renewal

- › **Lead Group:** Transportation Operations
- › **Key Partners:** Roadway Design and Construction – Arterial Roads
- › **Support of *The Way We Move*:**



Roads are the foundation of Edmonton's transportation system and affect the economic vitality and competitiveness of Edmonton and the Capital Region. The City uses an approach that optimizes investment through a mix of preventive maintenance, rehabilitation and reconstruction. Deferring capital investments in roadway renewal will ultimately increase the need for maintenance work in the future, including pothole and base repairs, as well as patch paving.



WHAT WE DID*Refer to Map*

From 2009-11 there was an extensive program of roadway renewal projects, as there were favourable economic conditions and a number of grant programs available. In addition, there was the regular program of pothole filling and minor roadway maintenance.

WHAT WE WILL DO*Refer to Map*

Arterial Roadway Renewal Program	Total Annual Funding (in 2012 dollars)
WILL DO	\$15.5 million

Work planned for the 2012-14 Arterial Renewal Program consists of 21 km of arterial roadways renewed. This reflects a significant variation from recent funding levels. At this level of funding for 2012-14, there is an anticipated backlog of renewal and reconstruction projects for 2015 and beyond. It is anticipated that a larger number of potholes will need to be filled and more patch paving will have to be done, which will impact the operating budget due to the underfunding of this program. In addition, deferral of roadway rehabilitation will accelerate life cycle replacement, increasing overall capital costs.

The following map shows the planned roadway renewal projects 2012-14.

WHAT WE COULD DO

Arterial Renewal Program	Total Annual Funding (in 2012 dollars)
COULD DO	\$46 million

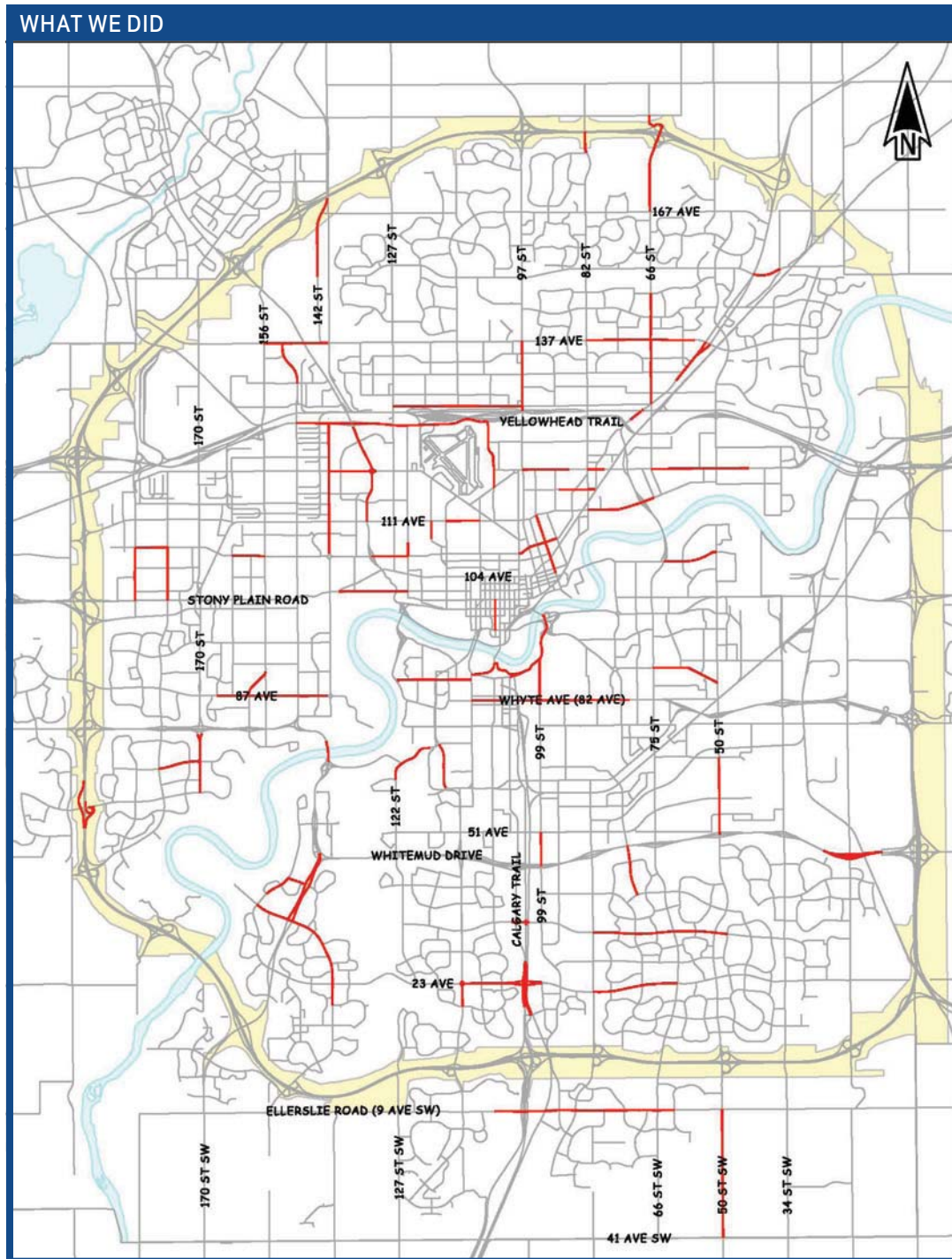
Based on the level of funding requested in CPP, the overall Arterial Roadway Program could deliver 52 km of roadway renewal. The projects to be completed would incorporate those that were deferred in 2012-14.

WHAT WE ASPIRE TO

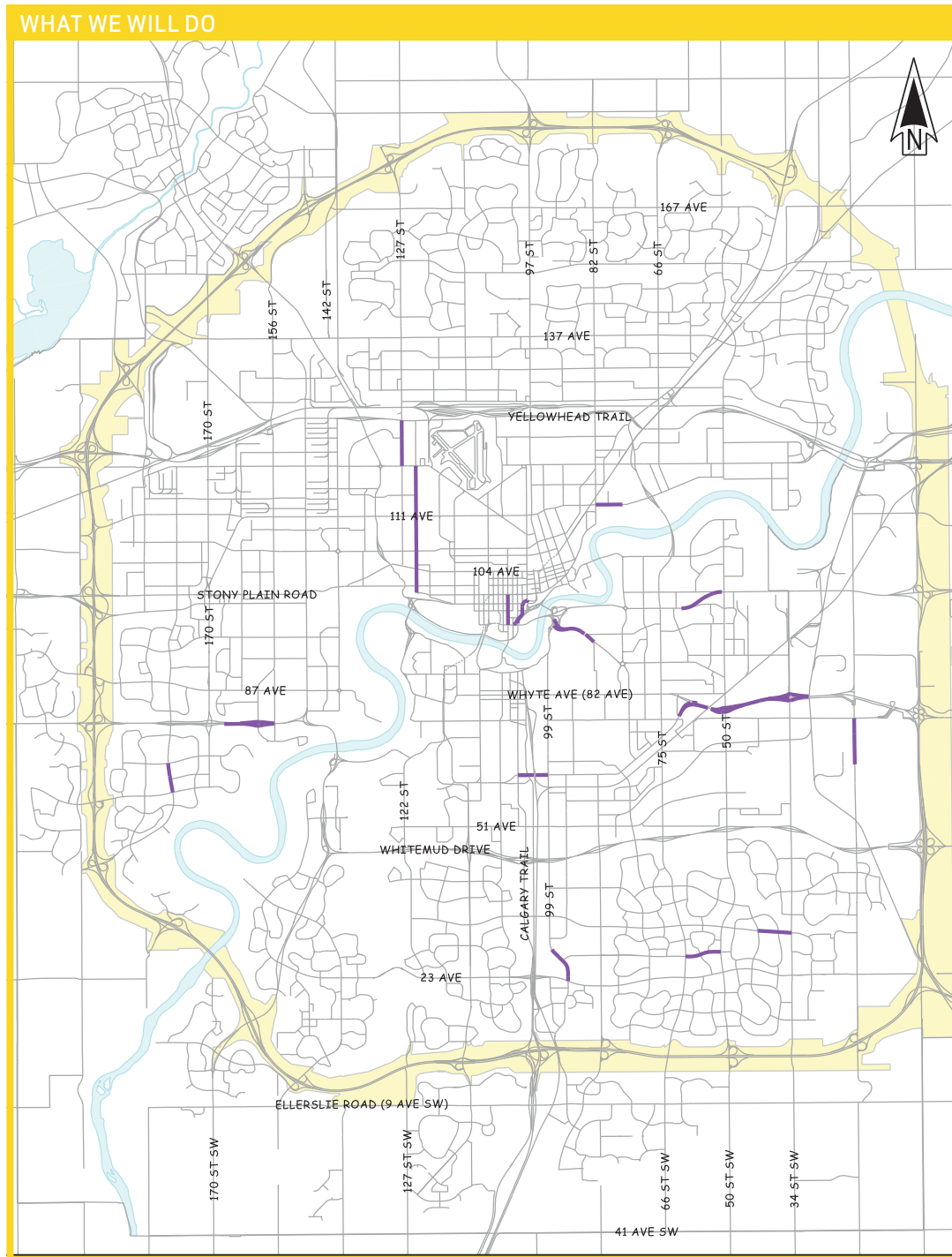
Arterial Renewal Program	Total Annual Funding (in 2012 dollars)
ASPIRE TO	\$60 million

The City is responsible for 833 km of centreline of arterial roadway. Given that roadways have an average service life of 12 years, approximately 70 km of roadway should be renewed annually. The average cost per kilometre of standard four-lane arterial is \$880,000. This level of funding would require significant additional resources to manage and administer this level of funding, however pothole and patch paving requirements would be reduced.

Arterial Renewal Program, 2009-2011



Arterial Renewal Program, 2012-2014



7.3 Bridge Renewal

- › **Lead Group:** Transportation Operations
- › **Key Partners:** Roadway Design and Construction – Special Projects
- › **Support of *The Way We Move***



Bridges are a vital link in the transportation system as they provide access across the river, creeks, ravines, major roadways, and railways for people and goods. Because of the importance of bridges, they are inspected on a regular basis. The City of Edmonton is responsible for monitoring and maintaining the structural integrity of bridges and culverts. This program includes major and minor rehabilitation, reconstruction, preventive maintenance and condition assessments of inventory. Inspection and maintenance 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. Rehabilitation and maintenance are prioritized using a risk based approach to ensure functionality of critical links within the overall system.



WHAT WE DID

Over the past three years, the City has completed a number of major bridge rehabilitation projects:

- Whitemud Drive/Quesnell Bridge Widening and Rehabilitation
- St. Albert Trail Bridge Widening and Rehabilitation
- Dawson Bridge Rehabilitation

WHAT WE WILL DO*Refer to Table*

Bridge Renewal Program	Total Annual Funding (in 2012 dollars)
WILL DO	\$54.6 million
<p>In the coming year, the City will complete an update to the Bridge Investment Strategy, which governs the overall condition rating and assessment of structures managed by the City of Edmonton. The City will continue to maintain an ongoing bridge inspection program. The following capital projects are planned for completion within the next three years:</p> <ul style="list-style-type: none"> • Walterdale Bridge Replacement (\$132 million) • 82 Avenue Bridge over the Argyll Road Connector • 102 Avenue Bridge over Groat Road 	

WHAT WE COULD DO












Bridge Renewal Program	Total Annual Funding (in 2012 dollars)
COULD DO	\$16.5 million
<p>In order to maintain stable funding of all bridges, annual program funding between \$14 million and \$20 million is recommended. Based on targets established in the City's risk-based infrastructure renewal mode, RIMS, the funding level is \$16.5 million annually.</p>	

WHAT WE ASPIRE TO

Bridge Renewal Program	Total Annual Funding (in 2012 dollars)
ASPIRE TO	\$23.7 million
<p>Department targets are that no critical structures are allowed to deteriorate to 'Very Poor', with a target of no more than 18 per cent in 'Poor' condition. It is expected that this situation can be maintained with the level of funding outlined in the 'Could Do' scenario. A major rehabilitation of the Groat Bridge over the North Saskatchewan River and the Victoria Trail Bridge over Groat road are anticipated.</p>	

Bridge Renewal Initiatives

For more information see Appendix 5

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	COST	STRATEGIC GOALS
Walterdale Bridge Replacement	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction Transportation Operations, Sustainable Development, Community Services	A new bridge will be constructed to replace the Walterdale bridge, spanning the North Saskatchewan River to connect Queen Elizabeth Park Road, Walterdale Hill Road, and 105 Street. The project represents a signature bridge structure that will enhance overall connectivity across the river valley.	\$132 million over three years	      
Bridge Renewal and Rehabilitation	Lead Group: Transportation Operations Key Partners: Transportation Planning	Renewal of key bridges in the City, including: <ul style="list-style-type: none"> › Composite Renewal Program › 102 Avenue over Groat Road › 82 Ave connector over Argyll Road 	\$33.1 million over three years	   

7.4

Enabling Roadway Infrastructure Renewal

- › **Lead Group:** Transportation Operations
- › **Support of *The Way We Move*:**



To enable the efficient operation of Edmonton's roadways, the City delivers daily essential support services. These include snow storage sites, operating yards, traffic control equipment, parking metres and geo-environmental. These are primarily capital support to operating programs. All of these facilities require ongoing capital renewal.



WHAT WE DID

In the past 3 years, renewal of the many enabling systems that support the roadway network has been undertaken. Funded principally through composite programs, renewal spending was identified in the following areas:

- Operating Yards
- Snow Storage Facilities
- Traffic Control Equipment
- Streetlighting
- Geo-environmental

WHAT WE WILL DO *Refer to Table*

Enabling Roadway Infrastructure	Total Annual Funding (in 2012 dollars)
WILL DO	\$14 million

Due to funding constraints in the 2012-14 CPP, programs such as streetlighting, traffic signals and geo-environmental were not all fully funded.

WHAT WE COULD DO

Enabling Roadway Infrastructure	Total Annual Funding (in 2012 dollars)
COULD DO	\$28.2 million

‘Could Do’ funding involves full funding of infrastructure renewal requested in the CPP.


WHAT WE ASPIRE TO *Refer to Table*








Enabling Infrastructure Renewal	Total Annual Funding (in 2012 dollars)
ASPIRE TO	\$46.8 million

Beyond CPP funding requests, RIMS estimated additional funding to achieve a sustainable infrastructure condition within 20 years. In addition to meeting RIMS targets for infrastructure renewal, full funding of LED streetlight replacement is part of the ‘Aspire To’ scenario.

Enabling Roadways Renewal Initiatives

For more information, see Appendices 4 and 5

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
Snow and Ice Control	Lead Group: Transportation Operations Key Partners: Community Services	The City of Edmonton is leading two important initiatives related to with roadway design and construction standards: <ul style="list-style-type: none"> › Impact of Urban Design on Snow and Ice Control › Roadside Snow Storage Strategy 	  

INITIATIVES ASPIRE TO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
LED Streetlight Replacement	Lead Group: Transportation Operations Key Partners: Community Services	Replacement of current streetlights with longer lasting and energy efficient LED lamps will result in long-term savings for the City of Edmonton. Currently, replacement of lamps is being coordinated with neighborhood renewal. The 'aspire To' funding would fast-track this replacement to take place within five years, the average lifespan of a traditional high pressure sodium lamp.	      

7.5 Transit Fleet and Facilities Renewal

- › **Lead Group:** Edmonton Transit
- › **Key Partners:** Fleet Services
- › **Support of *The Way We Move*:**



Transit fleet and facilities renewal projects are essential to ensure that Edmonton Transit can deliver transit services to connect Edmontonians to the places they want to go. Fleet renewal and refurbishment allows total asset life to be extended, which significantly reduces life cycle costs. The transit facilities that citizens use on a daily basis, such as transit centres and LRT stations, deteriorate over time and require capital investment to maintain functionality.



WHAT WE DID

In the past three-year period, the City has undertaken a substantial amount of bus and LRT fleet and facility renewal. The LRT major refurbishment program initiated in 2007 will allow LRT vehicles purchased in the 1980s to operate efficiently for an additional 20 years beyond their original anticipated lifespan. Specific project initiatives include:

- Bus Fleet Renewal
- LRV Retrofit Program
- Bus Transit Centre Rehabilitation

WHAT WE COULD DO

Transit Fleet and Facilities Renewal

Total Annual Funding (in 2012 dollars)

COULD DO

\$42.8 million

Restoring funding levels for bus renewal will increase funding to \$34 million annually. The balance of annual funding targets for bus and LRT facilities are based on RIMS targets for infrastructure renewal. No major rehabilitation project needs have been identified for 2015-23.

WHAT WE WILL DO

Refer to Table

Transit Fleet and Facilities Renewal

Total Annual Funding (in 2012 dollars)

WILL DO

\$23.4 million

In the 2012-14 CPP, resource constraints resulted in significant reductions in bus fleet and facilities renewal. The LRT Renewal program will be completed in the 2012-14 period as well as major repairs to the Central Station roof structure, which is underneath Jasper Avenue.

WHAT WE ASPIRE TO

Transit Fleet and Facilities Renewal

Total Annual Funding (in 2012 dollars)



ASPIRE TO

\$42.8 million

Department targets regarding asset condition are achieved with the level of funding outlined in the 'Could Do' scenario. No further major projects are anticipated from 2015-23.

Transit Fleet Renewal Initiatives

For more information see Appendix 5

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
LRT Fleet Renewal	Lead Group: Transportation Operations Key Partners: Community Services	In order to achieve optimal life span of U2 Light Rail Vehicles (LRV) purchased in the 80's, a mid life refurbishment program began in 2007. The vehicles undergo a complete overhaul which will permit an additional service life of 20 years.	   
Bus Fleet Renewal	Lead Group: Transit Key Partners: Fleet Services	Edmonton Transit operates a fleet of over 1000 vehicles which require ongoing renewal in order to provide service to the City of Edmonton. The bus fleet renewal program is currently funded at 50 per cent of the identified need, resulting in 42 buses that will be operating past their service life at an additional projected annual cost of \$1.3 million in 2014.	   
Central Station Roof Repair	Lead Group: Transit Key Partners: Roadway Design and Construction	The roof structure of Central Station has deteriorated and now requires major rehabilitation in order to address damaged structural concrete and to install a new waterproofing membrane. In addition, the renewal of the road is required, providing the opportunity to implement the first phase of the Jasper Avenue New Vision Plan.	    

7.6 Enabling Transit Infrastructure Renewal

New infrastructure is also needed to move Edmonton in the direction of *The Way We Move's* Vision. Additional information on how the department has allocated dollars for growth projects can be found in Appendix 5: Capital Budget Information Sheets.

- › **Lead Group:** Edmonton Transit
- › **Support of *The Way We Move*:**



In addition to fleet vehicles and stations, there is a significant amount of supporting infrastructure that enables the continued operation of the transit system. This includes transit garages, CCTV cameras, LRT system electrification and supporting equipment. All of these systems are subject to deterioration and require investment to maintain and renew. These are the behind the scenes facilities that are critical for transit to operate effectively. These capital renewal investments ensure there are places where buses go to get fixed, where security is coordinated, and where staff can clean the LRT trains each day.



WHAT WE DID

In the past three-year period, the City has undertaken a substantial amount of bus and LRT fleet and facility renewal. Specific project initiatives included:

- Northeast LRT Electrification and Signals Upgrades
- Life Cycle Replacements of the CCTV and Security Systems

WHAT WE WILL DO

Refer to Table

Transit Fleet and Facilities Renewal

Total Annual Funding (in 2012 dollars)

WILL DO

\$7.9 million

In the 2012-14 CPP, funding was identified in the following areas:

- CCTV Camera Replacement
- Communication Equipment Renewal
- LRT Line and Equipment Renewal
- Westwood Garage Minor Rehabilitation

Due to funding constraints, full funding for all the programs was not provided. In addition, no funding was provided for fare equipment renewal.

WHAT WE COULD DO

Transit Fleet and Facilities Renewal

Total Annual Funding (in 2012 dollars)

COULD DO

10.4 million

‘Could Do’ represents restoring funding levels to meet CPP requests for renewal of enabling transit system components. No major renewal projects have been identified for 2015-23.

WHAT WE ASPIRE TO

Transit Fleet and Facilities Renewal

Total Annual Funding (in 2012 dollars)




ASPIRE TO

\$11.9 million

A slight increase in funding from the ‘Could Do’ scenario will result in achieving RIMS targets spending. No further major renewal projects are anticipated from 2015-23.

Transit Enabling Renewal Initiatives

For more information see Appendix 5

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	COST	STRATEGIC GOALS
Westwood Garage Minor Rehabilitation	Lead Group: Transit Key Partners: Fleet Services	The Westwood garage has been in service for 60 years and requires rehabilitation in order to maintain functionality for the next 5 years. In the long term, this facility is planned to be replaced by a new transit garage that will serve Northeast Edmonton.	\$6 million	  

8.0 PLANNING FOR THE FUTURE

New infrastructure is also needed to move the city in the direction of *The Way We Move's* Vision. Additional information on how the department has allocated dollars for growth projects can be found in Appendix 5: Capital Budget Information Sheets.

8.1 Transportation and Land Use Integration

TMP Strategic Objective:

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

The Way We Move and *The Way We Grow* were developed concurrently to recognize that land use and transportation are linked. The projects outlined below will link the transportation system and land use so that they support each other, and so that the use of transit and transportation infrastructure is optimized and supports best practices for land use. Over the next 10 years, a number of joint initiatives will be done to achieve this goal.

Transportation Planning supports a number of key projects that are lead by Sustainable Development.

Support for Sustainable Development
















- Stony Plain Road Streetscape
- Jasper Avenue Streetscape
- Downtown Plan Implementation
- TOD Implementation by completing Station Area Plans at McKernan Belgravia and Mill Woods
- Designing New Neighbourhoods Guidelines
- City Centre Redevelopment Plan

In addition, a number of joint initiatives have been undertaken over the past three years to improve Transportation and Land Use Integration:

- Transit Oriented Development Guidelines
- The Downtown Plan





















Integrating Transportation and Land Use Initiatives

For more information, see Appendix 4














INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
Complete Streets	Lead Group: Planning Key Partners: Transportation Operations, Infrastructure	Complete Streets have street designs that are based on surrounding area and a guideline aims to increase the attractiveness, convenience and safety of all modes of transportation within the overall network.	      
Multimodal Level of Service (MMLOS) and Congestion Policy	Lead Group: Planning Key Partners: Transit, Operations, Sustainable Development	The City is developing a Multimodal Congestion in a consistent and cost effective manner. Multimodal Level of Service (MMLOS) is the approach that will be used for both planning and evaluating the performance of current or planned infrastructure. MMLOS is a rating system that is used to broadly assess the travel experiences for pedestrians, bicycles, autos, transit and trucks along a specified corridor or location that focuses on journey quality.	   
Traffic Impact Assessment Guidelines	Lead Group: Transportation Planning Key Partners: Transit, Operations, Sustainable Development	To help facilitate review of Traffic Impact Assessments (TIA), a guideline is being developed that provides a criteria, and requirements related to when a TIA would be required and what types of analysis are necessary as part of the process.	  
Urban Traffic Noise Policy (UTNP) Update	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction, LRT Design and Construction, Transit, Transportation Operations, Sustainable Development	The UTNP was last updated in 2004 and is based on a review of the 1983 Urban Traffic Noise Policy Study and the traffic noise policies of other Canadian jurisdictions. It seeks to mitigate excessive traffic noise for residential land uses adjacent to major transportation corridors.	 

Integrating Transportation and Land Use Initiatives

For more information, see Appendix 4

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
Urban Corridor Planning	Lead Group: Office Transportation Planning Key Partners: Transit, Operations, Sustainable Development	Based on upcoming roadway design and construction projects, a review of roadway configuration in consultation with affected communities is planned to focus on supporting adjacent land uses and encourage greater mobility. Review is planned for: <ul style="list-style-type: none"> > 112 Avenue (Highlands) > 127 Street (118 Avenue to Yellowhead Trail) Will incorporate associated work with Complete Streets Guidelines	   
Maintenance and Snow Clearing Policy for Active Transportation and Transit-oriented Development (TOD) Areas	Lead Group: Planning Key Partners: Transit, Transportation Operations, Sustainable Development, Community Services	Recognizing Edmonton's identity as a Winter City requires a holistic approach to all seasons mobility. An active transportation maintenance policy would provide clarity and encourage year-round mode shift. This is increasingly important as the City invests in active modes infrastructure and supports TOD.	     
Household Travel Survey Preparation Work	Lead Group: Transportation Planning	Detailed traveler information was last collected in 2005, prior to the opening of the South LRT and Anthony Henday Drive, and requires updating. In anticipation of completing the next Household Travel Survey, preparation work needs to be completed.	  
Jasper Avenue Streetscape	Lead Group: Roadway Design and Construction Key Partner: Transit, Sustainable Development	Based on a vision to re-establish Jasper Avenue as a main street that Edmonton's citizens can be proud of, significant changes are planned. The first phase of this project is being completed as part of the rehabilitation of the Central Station roof structure.	  
Transit and Other Modes Integration	Lead Group: Transportation Planning Key Partners: Transit, Vehicle for Hire Commission	As active modes and LRT infrastructure is expanded throughout the city, there is a growing need to focus on multi modal integration, such as bicycles to LRT, "kiss and ride" and provision of dedicated taxi stalls.	   

Integrating Transportation and Land Use Initiatives

INITIATIVES COULD DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
Increased Trip Planning Support for Citizens	Lead Group: Transportation Planning Key Partners: Transit	As the City expands transit and active modes, trip planning support for citizens is critical to ensure the transportation system is well understood by the general public. This includes expanding traditional outreach programs to include all modes of travel, as well as information systems to provide up-to-date information on available transportation alternatives.	      
Strategic Infrastructure Funding Review	Lead Group: Transportation Planning Key Partners: Transit, Finance	As the City makes major investments in transportation infrastructure, the various levels of subsidies applied from different orders of government becomes a critical part of funding discussions. Past studies have found disproportionate levels of subsidy towards automobile modes relative to transit and active modes. In addition, full cost accounting analysis of infrastructure expansion, including consideration of maintenance and renewal, will inform budget processes and system planning.	 
Utilities Coordination Strategy	Lead Group: Transportation Operations Key Partners: Transportation Planning, Infrastructure Services, Sustainable Development	To improve efficiency and coordination of underground work that takes place in neighborhoods along City-owned right-of-way, a review of industry practices and trenching technologies has taken place. This has included a review of in-house capacity compared with continuing use of EPCOR, and has resulted in a recommendation to proceed with either a new agreement or delivering services with in-house capacity.	   

Integrating Transportation and Land Use Initiatives

INITIATIVES ASPIRE TO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION
Additional Transportation and Land Use Studies	Lead Group: Transportation Planning	<ul style="list-style-type: none">› Household Travel Survey› Transit Avenue Guidelines› Arterial Roads for Development Bylaw Review› Life Cycle Cost Analysis – Decision Framework› Prioritization study for infill stations on existing LRT system› East LRT Alignment Study› Green Roads Design Guidelines for Edmonton (including review of green paving for transportation facilities)› Transit Service Enhancements

8.2 Transit System Growth

TMP 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 shift, and spur the development of compact, urban communities.
- 5.2 The City will develop an efficient, effective, accessible and integrated bus network to serve Edmonton with connections to the region.
- 5.3 The City will provide a comprehensive system of transit options for persons with mobility challenges.
- 5.4 The City will develop park-and-ride facilities located towards the extremities of LRT lines or at key transit centers where land cannot be used for more intensive transit-oriented development.
- 5.5 The City will implement essential supporting measures to enhance the viability and success of the public transportation system.

- › **Lead Group:** Edmonton Transit
- › **Key Partners:** Transportation Planning, LRT Design and Construction
- › **Support of *The Way We Move*:**



To make public transportation the preferred choice for more people, the City must continue to invest in major improvements to the transit system. A comprehensive public transit system, with LRT available to all sectors of the city, is key to achieving the City's Vision and Strategic Goals.

WHAT WE DID

In the past three years, a number of new components have been completed within the bus and LRT transit network, largely due to available funding through specific Federal and Provincial grants.

- Transit Centres Opened for Service in Leger, Meadows, Lewis Farms and Eaux Claires
- Centennial Garage Opened for Service
- Northeast LRT Electrification and Signals Upgrades
- Purchased 11 Additional Light Rail Vehicles
- South LRT from South Campus to Century Park
- Five-car LRT Platform Extensions from Health Sciences to Century Park Complete
- Detailed Design Engineering for North LRT to NAIT Complete
- Started North LRT to NAIT Construction
- Concept Planning and Preliminary Engineering for Future LRT Projects (West, Southeast, Northwest, South to Heritage ValleyPark-and-ride, Northeast to Gorman)

WHAT WE WILL DO

Refer to Table

Transit Fleet System

Total Annual Funding (in 2012 dollars)

WILL DO

\$216.7 million

Over the next three years, a number of high-profile projects are planned as part of the strategic expansion of the transit system. These include: various transit service pilots, such as SMART Bus, Night Ride and an Airport Service. The completion of the North LRT to NAIT will allow operation of the first new branch of the current LRT line since the service began in 1979. Preparation for future expansion of the LRT system is underway, with plans to complete the Southeast and West LRT Preliminary Engineering and required land acquisition. Long term planning for system expansion continues with Concept Planning of NWLRT to the City limits.

WHAT WE COULD DO

Refer to Table

Transit System Growth

Total Annual Funding (in 2012 dollars)

COULD DO

\$28.8 million

Future funding of LRT expansion is largely dependant on funding support from Provincial and Federal governments. Based on previous City lead spending levels, the following programs could be implemented:

- LRT Fleet Growth to Meet Future Ridership Needs
- Fleet-wide Implementation of SMART Bus Technology

WHAT WE ASPIRE TO

Refer to Table

Transit Growth System

























Total Annual Funding (in 2012 dollars)

ASPIRE TO














\$351.5 million

Council targets see significant expansion of the LRT system through the Southeast and West program. System expansion is also possible through a number of important, but smaller scale, transit expansion projects. This level of funding would require significant new commitments from other levels of government.




















Transit System Growth Initiatives

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	ESTIMATED COSTS	STRATEGIC GOALS
North LRT	Lead Group: Transit Key Partners: LRT Design and Construction	The NAIT LRT extension is planned for service to commence in April 2014. The line will operate from Health Sciences to NAIT over 8.5 km of line. The new construction includes 20 vehicles, three stations, and 3.5 km of new double track from Churchill Station to NAIT. This service represents a total of 33,904 service hours annually.	Capital Budget: \$755 million Net Operating Impact: 44.5 FTEs (\$7.6 million)	     
Northwest LRT Concept Planning	Lead Group: Transportation Planning Key Partners: Transit, Operations, Sustainable Development	The City of Edmonton is planning to extend the LRT from the NAIT station currently under construction to the northwest city limits. Following an extensive corridor evaluation process, 113A Street was approved by City Council as the future Northwest LRT route on July 7, 2010.	Consulting Budget: \$1.5 million	     
LRT Network Prioritization and Business Case	Lead Group: Transportation Planning Key Partners: Transit, Operations, Sustainable Development	The City's long-term program for LRT expansion has created competing needs for capital and operating resources. An overall network prioritization and supporting business cases would allow efficient allocation of resources, as well as effective construction staging to support funding applications.	TBD	     
Southeast and West LRT Preliminary Engineering	Lead Group: LRT Design and Construction Key Partners: Transportation Planning, Transit, Operations, Sustainable Development	The Southeast to West LRT is now in the preliminary design phase. Preliminary design will build on the approved concept plans by conducting more detailed analysis of how the new low-floor urban LRT will operate, as well as how the system will integrate into the existing and planned transportation network and adjacent communities.	\$39 million	     















Transit System Growth Initiatives

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	ESTIMATED COSTS	STRATEGIC GOALS
LRT Sustainable Urban Design Integration Guidelines	Lead Group: LRT Design and Construction Key Partners: Transportation Planning, Transit, Operations, Sustainable Development	The LRT Design Guidelines provide standards, guidance and performance-based design criteria for engineering and building LRT in Edmonton. These guidelines ensure that the City designs and builds a uniform system that is easy to maintain and upgrade.	Part of preliminary engineering assignment	    
Airport Service	Lead Group: Transit Key Partners: Edmonton International Airport	Route 747, Edmonton Transit's direct service to the Edmonton International Airport, is provided through a partnership between the City of Edmonton and the Edmonton International Airport. Buses travel directly from Century Park Transit Centre to the International Airport and return (no stops en route).	\$222,000 net annual requirement (2012 service package)	   
Late Night Service (Night Ride)	Lead Group: Transit Key Partners: Responsible Hospitality Edmonton	The Night Ride late night transportation pilot on Whyte Avenue operated Friday and Saturday nights between 1:30 a.m. and 3:30 a.m. The pilot project completed its last run on the weekend of April 13-14, 2012. The intent of the pilot was to test feasibility of late night service delivery.	\$556,000 net annual requirement (2012 service package)	   

Transit System Growth Initiatives

INITIATIVES COULD DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	ESTIMATED COSTS	STRATEGIC GOALS
SMART Bus Implementation	Lead Group: Transit Key Partners: Information Technology, Fleet Services	SMARTBUS improves the experience for the transit customer and minimizes operating costs by using technology to modernize the transit fleet. In addition, customer experience will be improved by features that offer real-time bus information, improved security and more reliable service.	\$32.6 million over five years	      
Transit Service Enhancements (ongoing)	Lead Group: Transit Key Partners: Transportation Operations	<p>ETS will continue to develop service plans that address the changing travel needs of Edmonton residents. Some of these service enhancements could include:</p> <ul style="list-style-type: none"> • Service quality improvements • Cross-town Service • Overload and Schedule Adherence • Transit Technology Review • New Late Night service • New Off-peak service • New Weekday Peak service • Off-peak Frequency Enhancement 	TBD yearly as a part of the service hour required in coordination with system performance review	      
Central Area Circulator Alignment Study	Lead Group: Transportation Planning Key Partners: Transit, Sustainable Development	Develop an alignment recommendation for the Central Area Circulator will provide clarity for stakeholders improve opportunities for long term corridor planning. The need for LRT service to create a wider Downtown network area was identified in the LRT Network Plan.	Consulting Budget: \$1.2 million	    

Transit System Growth Initiatives

INITIATIVES ASPIRE TO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
Construction of Southeast and West LRT	Lead Group: Transit Key Partners: LRT Design and Construction	The implementation of the LRT line from Lewis Farms to Mill Woods is part of the TMP's Vision to expand LRT service to all sectors of the City by 2040. City Council approved the concept plan for the Southeast and West LRT lines on Jan 19, 2011. The concept plan has defined station locations, track alignment along the corridor and neighborhoods, and business and pedestrian accesses. Urban style low-floor technology will be adopted for the new line.	      
Other Transit Expansion Projects	Lead Group: TBD Key Partners: TBD	<ul style="list-style-type: none"> › East LRT Alignment Study › New Transit Centres in Heritage Valley, Windermere, Ellerslie East, and Big Lake 	      

8.3

Transit Enabling Infrastructure Growth

To achieve and maintain mode shift goals associated with expansion of the transit system, associated expansion of transit enabling infrastructure is required. This critical supporting infrastructure includes garages and operating yards as well as fare collection and security systems.

WHAT WE DID

In 2010, the City completed its Centennial Garage, which provides bus service that complements and supports the extension of LRT to Century Park. At over 300,000 square feet, it is the largest ETS facility, with room to house over 250 buses. This will take the pressure off the City's three existing, overcrowded transit garages.

WHAT WE WILL DO

Transit Enabling Infrastructure Growth

WILL DO

Total Annual Funding
(in 2012 dollars)

\$4.7 million

Due to constraints in Westwood Garage, a new facility for northeast Edmonton is required. The planning and design for the facility will be completed in 2012-14, with an approved budget of \$14.8 million.

WHAT WE COULD DO

Transit Enabling Infrastructure Growth

COULD DO

Total Annual Funding
(in 2012 dollars)

\$21.8 million

In order to accommodate growth of the existing LRT system, an additional storage facility and additional vehicles are required.

WHAT WE ASPIRE TO

Refer to Table

Transit Enabling Infrastructure Growth

ASPIRE TO



Total Annual Funding
(in 2012 dollars)







\$80.4 million

'Aspire To' involves two major projects. The construction of a new transit garage in northeast Edmonton. In addition, the implementation of SMART Cards across the transit system would help support Strategic Goals to increase transit ridership by providing more fare choice for riders. For additional information, see Appendix 5.

Transit Enabling Infrastructure Growth Initiatives

For more information see Appendix 5

INITIATIVES COULD DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
New LRT Maintenance Facility	Lead Group: Transit Key Partners: Fleet Services	With the opening of the NAIT LRT expansion the current vehicle storage facility will be over capacity. To store additional vehicles a new facility is required.	 

INITIATIVES ASPIRE TO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
New Transit Garage	Lead Group: Transit Key Partners: Fleet Services	A strategically located new Transit Garage will service the rapidly growing Northeast Quadrant of the city and provide state of the art technology for maintaining the bus fleet.	  
SMART Card	Lead Group: Transit Key Partners: TBD	SMART Card is a mature technology solution that would allow riders to pay fare by passing a card over a terminal. This type of cash-less system will improve security, provide increased fare flexibility and allow for additional responsiveness in service planning.	  

8.4 Active Transportation

TMP Strategic Objective:

- 6.1 The City will create a walkable environment
- 6.2 The City will create a cycle-friendly city
- 6.3 The City will create an integrated network of multi-use trail facilities

- › **Lead Group:** Transportation Planning - Sustainable Transportation, Key Partners: Roadway Design and Construction, Sustainable Development
- › **Support of *The Way We Move*:**



Active transportation includes any form of human-powered transportation, the most common modes being walking and biking. A key direction of *The Way We Move* is to develop an integrated and sustainable transportation system in Edmonton to enable citizens to shift to these modes. This program is guided by the City's Active Transportation Policy (City Policy #C544), which aims to "optimize Edmontonians' opportunities to walk, roll and cycle regardless of age, ability or socio-economic status; to enhance the safety, inclusivity and diversity of our communities, and to minimize the impact of transportation activities on Edmonton's ecosystem".

WHAT WE DID

In the past three years, significant progress has been made towards planning to provide options for Edmontonians to use active transportation:

- Developed the Active Transportation Policy (City Policy #C544)
- Developed the Bicycle Transportation Plan
- Developed the Sidewalk Strategy
- Built 20 Kilometres of On-street Bicycle Routes in 2011 (\$1.6 million)

WHAT WE WILL DO

Refer to Table

Active Modes Program

Total Annual Funding (in 2012 dollars)

WILL DO

\$6.4 million

Based on approved funding in the 2012-14 CPP, the City will continue to expand active modes facilities throughout Edmonton:

- Construction of Sidewalks in Various Areas in the City
- Approximately 50 Bus Stops are to be Retrofitted Per Year to be Accessible
- Approximately 100 curb Ramps are to be Constructed per Year
- Construction of Various Shared-use Paths
- Expansion of On-street Bike Routes
- Approximately 200 Bike Racks are to be installed per Year

WHAT WE COULD DO

Active Modes Program

Total Annual Funding (in 2012 dollars)

COULD DO

\$10 million

In order to complete some of the infrastructure expansion outlined in the Bike Plan and Sidewalk Strategy within the next 30 years, annual funding of \$10 million is required. This could be delivered within the City's current operating environment.

- Continued Construction of Accessible Bus Stops and Curb Ramps
- Continued Installation of Bike Racks
- 142 Street and Whitemud Drive Pedestrian Bridge
- Shared Use Trails
- On-street bike lanes

WHAT WE ASPIRE TO

Active Modes Program

Total Annual Funding (in 2012 dollars)











ASPIRE TO

\$32.0 million

'Aspire To' scenarios represents significant additional capital and operating spending that would be required to achieve the following Council-provided targets while maintaining core level of service:

- Construct 500 km of Sidewalks and Shared-use Paths Over the Next Ten Years
- Complete 400 km of the On-street Cycling Network in Ten years

Active Modes Initiatives

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	ESTIMATED COSTS	STRATEGIC GOALS
Update Shared-Use Paths Master Plan	Lead Group: Transportation Planning Key Partners: Transit	The Multi-Use Trail Corridor Study was completed in 2001, with implementation ongoing since that time. Edmonton's growth and its need to establish shared-use pathways (formally known as Multi Use Trails) in and across the Trans-utility Corridor (TUC) will be the focus of the next update.	Within Base Budget	    
Downtown Cycling Master Plan	Lead Group: Transportation Key Partners: Transit, Transportation Operations	The downtown is a critical area where bicycle facilities need to be strategic located within a densely structured urban environment. Ensuring that the wider network integrates with the central area will significantly contribute to the successful implementation of the Bicycle Transportation Plan.	Within Base Budget	    

8.5 Roads Growth

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

As the City continues to expand, additional roadway infrastructure will be required. In addition, to support the economic vitality of the city major roadway improvements will focus on the efficient movement of goods and services.

- › **Lead Group:** Transportation Planning – Facility and Capital Planning, Key Partners: Roadway Design and Construction
- › **Support of *The Way We Move*:**



WHAT WE DID

The City of Edmonton has expended significant resources in the past three years to expand the roadway system and support movement of goods and people through the following projects:

- Whitemud Drive/17 Street Interchange
- Gateway Boulevard/23 Avenue Interchange
- Whitemud Drive /Quesnell Bridge
- Anthony Henday Drive Connector - Lessard/Callingwood
- Anthony Henday Drive Connector - 66 Street/167 Avenue to 195 Avenue
- Anthony Henday Drive Connector - 142 Street from 153 Avenue to 167 Avenue
- Anthony Henday Drive Connector - 153 Avenue from Fort Road to Manning Drive
- Anthony Henday Connector - 82 Street from 180 Avenue to Anthony Henday Drive
- Anthony Henday Drive Connector - 167 Avenue from Manning Drive to 50 Street
- Anthony Henday Drive Connector - 184 Street from 122 Avenue to the T.U.C.

A significant component of the City's investment in roadway growth has followed the investment made by the Provincial Government in Anthony Henday Drive, the regional ring road. In addition, a significant proportion of new roadways were completed by private developer funding administered through the Arterial Roadway Assessment (ARA) bylaw process.

WHAT WE COULD DO*Refer to Table*

Roadway Growth

Total Annual Funding
(in 2012 dollars)**COULD DO**

\$28.3 million

There are a significant number of projects that could be completed in the future, based on allocated funding levels. The 'Could Do' scenario is focuses on goods movement projects and limited arterial roadway expansion over the next 10 years.

WHAT WE ASPIRE TO*Refer to Table*

Roadway Growth

Total Annual Funding
(in 2012 dollars)**ASPIRE TO**

\$92.5 million

'Aspire To' level of funding would allow the implementation of the Yellowhead Trail Strategic Plan, estimated at \$425 million over 10 years. In addition, this would support growth initiatives such as arterial roadways, Anthony Henday Drive connectors and other major goods movement projects at a funding level of approximately \$35 million annually.

WHAT WE WILL DO*Refer to Table*







Roadway Growth

Total Annual Funding
(in 2012 dollars)**WILL DO**









\$50.3 million

The City will continue to support roadway expansion through a number of key strategic roadway projects.

Road Growth Initiatives











INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	ESTIMATED COSTS	STRATEGIC GOALS
Arterial Expansion	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction	<p>The arterial roadway program was supplemented by the following priorities that were identified by Council through the 2012-14 budget process:</p> <ul style="list-style-type: none"> • 34 Avenue: 34 Street to 48 Street • Parsons Road: Ellerslie Road to 19 Avenue • Guardian Road/Lewis Estates Boulevard: Grantham Drive to Potter Greens Drive • 153 Avenue: Manning Drive to 50 Street • 23 Avenue: 34 Street to Mill Woods Road East • 34 Street: 23 Avenue to 34 Avenue • 38 Avenue: 21 Street to 34 Street • 184 Street: 107 Avenue to 116 Avenue 	Capital Budget: \$43 million	
QEII Highway and 41 Avenue SW	Lead Group: Roadway Design and Construction Key Partners: Transportation Planning, Alberta Transportation	To improve goods movement near a major railway intermodal facility, the City of Edmonton is working in partnership with the Government of Alberta to construct a new interchange on QE II Highway and 41 Avenue.	\$72 million (City of Edmonton), \$205 million overall	 
Goods Movement Strategy and Truck Route Update	Lead Group: Transportation Planning Key Partners: Transit, Transportation Operations	<i>The Way We Move</i> speaks of the City's commitment to support efficient goods movement in order to enable economic development and competitiveness. Identification of key goods movement corridors would allow efforts to be focused on the most appropriate locations, and update the truck routes and dangerous goods routes accordingly; the last complete review occurred in 1996.	Within Base Budget	  

Road Growth Initiatives

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	ESTIMATED COSTS	STRATEGIC GOALS
Yellowhead Trail Strategic and Concept Plan	Lead Group: Transportation Planning Key Partners: Transit, Operations, Sustainable Development	Yellowhead Trail is the most highly used goods movement corridor in Edmonton. As part of the national highway network and the inner ring road, it is a key facility for the city, as well as for the region and regional economy. The Yellowhead Trail Strategic Plan is ongoing, with improvements, including interchanges and access closures, being identified along the corridor.	Within Base Budget	   
Transportation Systems Management Strategy	Lead Group: Transportation Planning Key Partners: Transportation Operations, Transit	Transportation Systems Management has the potential to significantly improve the operation of existing roadways. To coordinate the delivery of this technology-based approach, an overall strategy is needed that would include linkages to current transit and operations projects. The current plan in place was developed in 1999 and is now obsolete.	External Services: \$250,000	   

Roadway Growth Initiatives

For more information see Appendix 5

INITIATIVES COULD DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	ESTIMATED COSTS	STRATEGIC GOALS
Arterial Expansion	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction	Arterial Expansion is anticipated to respond to growth and development of the city.	\$150 million over ten years	
Yellowhead Trail	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction	The first stage of Yellowhead Trail Strategic plan includes improvements related to relocating direct business accesses in order to improve overall traffic flow.	\$25 million over 3 years	   
Anthony Henday Connectors	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction, Alberta Transportation	As the Province continues expansion of the Anthony Henday Drive Ring Road, the City will be responsible for completion of various projects to connect city managed arterial roads to the provincial facility.	\$50 million over 10 years	 
Concept Plan for 75 Street	Lead Group: Transportation Planning Key Partners: Transportation Operations,	This planning study will identify the benefits and impacts of the proposed east leg of the Inner Ring Road, including Right-of-Way (ROW) roadway requirements and an extensive program of public involvement.	Consulting Budget = \$1.5 million	  

Roadway Growth Initiatives

For more information see Appendix 5

INITIATIVES ASPIRE TO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	ESTIMATED COST	STRATEGIC GOALS
Arterial Expansion	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction	Arterial Expansion is anticipated to respond to growth and development of the city.	\$150 million over ten years	
Yellowhead Trail	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction	In addition to access management measures, several new interchanges are required in order to achieve the vision of a free flow facility: <ul style="list-style-type: none"> > 149 Street to 142 Street > 127 Street to 121 Street 	\$425 million over ten years	
Key Goods Movement Corridors	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction	In addition to Yellowhead Trail, there are a number of key goods movement corridors that will require expansion to meet anticipated growth of the City, e.g. 75 Street, Whitemud Freeway.	\$250 million over ten years	
Anthony Henday Connectors	Lead Group: Transportation Planning Key Partners: Roadway Design and Construction, Alberta Transportation	As the Province continues expansion of the Anthony Henday Drive Ring Road, the City will be responsible for completion of various projects to connect City managed arterial roads to the provincial facility. The aspire to option contains funding for an accelerated construction schedule to match the province's schedule.	\$50 million over 5 years	

8.6

Roads Enabling Infrastructure Growth

As the roadway system expands, additional roadway support infrastructure is required, such as storage sites and equipment yards. The City shows leadership by implementing industry best practices and continuing to hold itself to the highest environmental and safety standards. As safety issues are identified, engineering and enforcement measures are implemented to improve safety for all roadway users.

WHAT WE DID

In 2011 the City has completed the Horse Hills Snow Storage Facility (\$29.6 million) which provides snow storage and run off management for the growing Northeast quadrant of the City.

- › **Lead Group:** Transportation Operations
- › **Support of *The Way We Move*:**



WHAT WE WILL DO

Refer to Table

Roadway Enabling Infrastructure Growth

Total Annual Funding (in 2012 dollars)

COULD DO

\$6.3 million

In its 2012-14 CPP, the City will continue to expand its snow clearing facilities and integrated speed equipment, which is funded through operating revenues. A number of strategic projects are planned to review roadway design related to safety and implementation of parking management framework. For additional information, see Appendix 4 and 5.

WHAT WE COULD DO

Roadway Enabling Infrastructure Growth

Total Annual Funding (in 2012 dollars)

COULD DO

\$26.6 million

'Could Do' scenario involves meeting funding requested in the CPP in a number of key areas:

- Parking Management Equipment
- Traffic Safety

WHAT WE ASPIRE TO

Refer to Table

Roadway Enabling Infrastructure Growth

Total Annual Funding (in 2012 dollars)




ASPIRE TO




\$35.8 million



'Aspire To' scenario involves meeting program funding requested in the CPP, as well as needed upgrades to the Kennedale Traffic Shop.

Roads Enabling Infrastructure Growth Initiatives

For more information, see Appendix 4 and 5

INITIATIVES WILL DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	ESTIMATED COSTS	STRATEGIC GOALS
Safe Roadway Systems Strategy	Lead Group: Transportation Operations Key Partners: EPS, Transportation Planning, U of A Research Chair, Monash University Research Center, CRISP	Several jurisdictions are applying the Safe System philosophy to develop and implement successful road safety programs. This project will follow successful work completed between the Office of Traffic Safety (OTS) and the Capital Regional Intersection Safety Partnership (CRISP).	TBD	
Parking Management Framework	Lead Group: TBD Key Partners: Transportation Operations, Sustainable Development, Finance	The City is in the process of completing a strategic review of parking management, including review and analysis of parking control technology and procedures. Once the strategic review is completed, the City will proceed with technology replacement and organizational adjustments to enable integration of parking policy, management and enforcement across the corporation.	TBD	 

INITIATIVES COULD DO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
Streetlights, Signals and Infrastructure	Lead Group: Transportation Operations	Additional funds are required to operate streetlights, signals, and infrastructure as a result of increased development.	
Snow and Ice Control	Lead Group: Transportation Operations	With increasing roadway inventory additional operating funds are required to maintain current snow and ice control services.	
Street Cleaning, Roadway, and Sidewalk Maintenance	Lead Group: Transportation Operations	To provide current service levels for increased inventory and maintain adherence to street cleaning policy additional operating funding will be required.	

INITIATIVES ASPIRE TO	LEAD GROUP/ KEY PARTNERS	DESCRIPTION	STRATEGIC GOALS
Kennedale Traffic Shop	Lead Group: Transportation Operations Key Partners: Infrastructure Services, Community Services	In 2009, the Long-range Facilities Plan identified the need for a new, larger Traffic Operations shop at the Kennedale location. Land was acquired for the new facility in 2010 for \$3.3 million, adjacent to the existing northeast Roadway Maintenance yard. The new facility will approximately double physical capacity, allowing sufficient capacity for current resources and future growth. The project is estimated to cost \$27.5 million over three years.	 

APPENDIX 1

SUMMARY OF INITIATIVES



What We Did – projects completed from 2009-2011

What We are Currently Doing – these are activities that were funded prior to 2012 and we will keep doing them unless otherwise directed

What We Will Do – initiatives to be started in 2012-2014 as they were approved as part of the capital or operating budget or can be done with existing resources

What We Could Do – important priorities that advance the goals and are achievable in the 10 years based on today's funding sources

What We Aspire To – important priorities that may not be possible in the next four to 10 years and beyond as funding may not be in place

Legend

Transform Edmonton's Urban Form



Shift Edmonton's Transportation Mode



Improve Edmonton's Livability



Preserve & Sustain Edmonton's Environment























































Ensure Edmonton's Financial Sustainability





































































Diversify Edmonton's Economy





































































Initiative Name		Objectives Supported
Workplace Safety Initiatives	Currently Doing	
Environmental Protection – ENVISO 14001	Currently Doing	 
Bus and LRT Transit	Currently Doing	     
DATS	Currently Doing	 
Transit Safety and Security	Currently Doing	  
Operate Traffic Signals and Streetlights	Currently Doing	    
Traffic Signage	Currently Doing	  
Basic Roadway Maintenance	Currently Doing	 
Snow and Ice Control	Currently Doing	 

Initiative Name		Objectives Supported
Snow Storage Sites	Currently Doing	 
Office of Traffic Safety	Currently Doing	 
Development Application Reviews	Currently Doing	    
Sustainable Transportation	Currently Doing	     
Data Collection and Evaluation	Currently Doing	  
Budget Coordination	Currently Doing	
Strategic Planning and Policy Development	Currently Doing	   
Facility Planning and Concept Design	Currently Doing	   
Public Involvement	Currently Doing	  
Engineering and Project Management for Roadway Projects	Currently Doing	  
Engineering and Project Management for LRT Projects	Currently Doing	  
Coordination with Great Neighborhoods	Currently Doing	     
Comprehensive Transit Review (2012 and ongoing)	Will Do	    
Fare Policy Review	Will Do	   
DATS Eligibility Process Update	Will Do	 
Transit Trip Planner Strategic Review	Will Do	  
Student Outreach Programs to support The Way We Move	Will Do	   
Seniors Transportation Strategy	Will Do	    

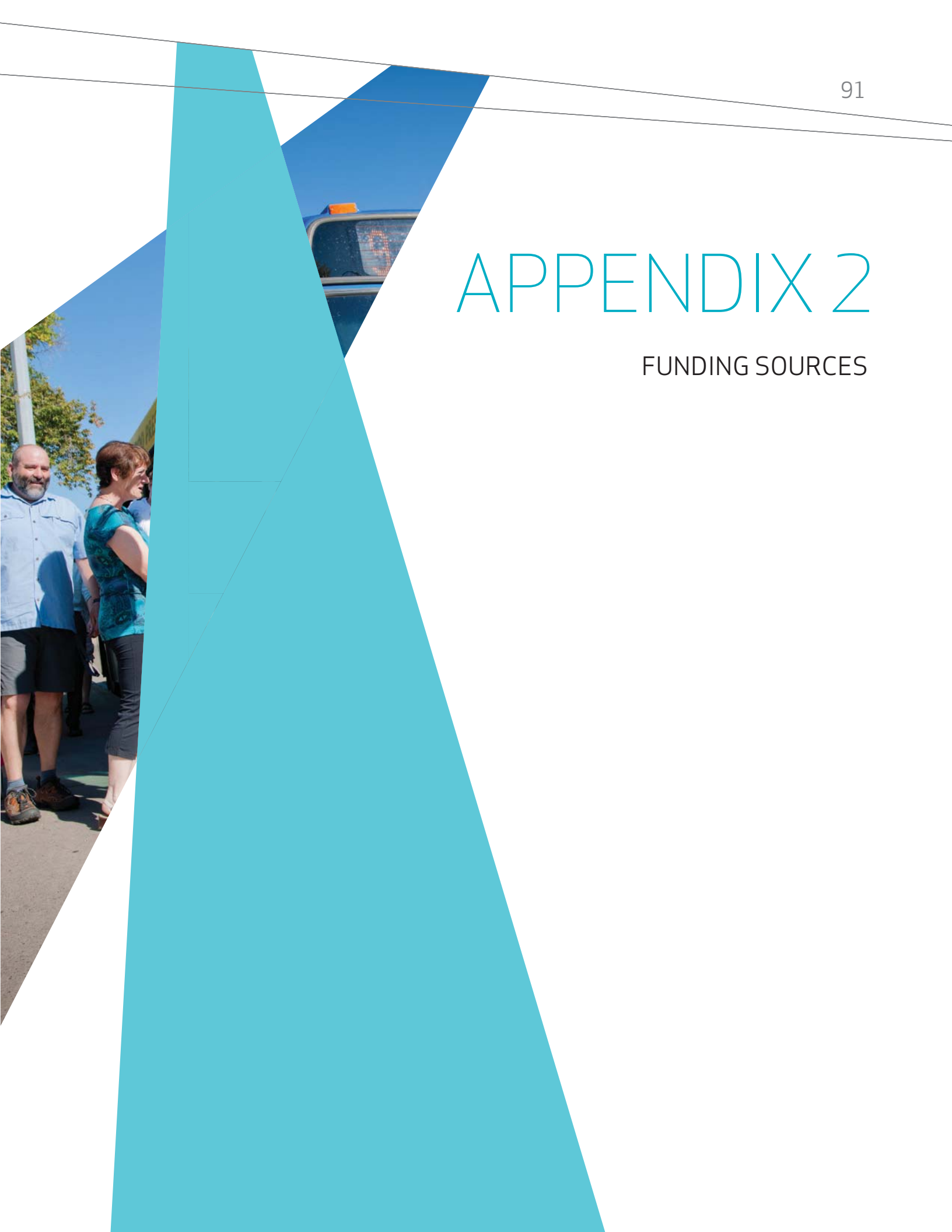
Initiative Name		Objectives Supported
Neighborhood Renewal	Will Do	   
Pavement Management Centre Relocation	Will Do	
Arterial Roadway Renewal	Will Do	 
Bridge Renewal	Will Do	 
Walterdale Bridge Replacement	Will Do	   
Enabling Roadway Infrastructure Renewal	Will Do	 
LED Streetlight Replacement (in 5 years)	Aspire To	   
Impact of Urban Design on Snow and Ice Control	Aspire To	   
Roadside Snow Storage Strategy	Aspire To	    
Transit Fleet and Facilities Renewal	Will Do	    
Enabling Transit Infrastructure Renewal	Will Do	    
Complete Streets Guidelines	Will Do	   
MMLOS and Congestion Policy	Will Do	   
Traffic Impact Assessment Guidelines	Will Do	   
Urban Traffic Noise Policy	Will Do	 
Urban Corridor Planning	Will Do	   
Maintenance and Snow Clearing Policy for Active Transportation	Will Do	  
Household Travel Survey Preparation Work	Will Do	 

Initiative Name		Objectives Supported
Increased Trip Planning Support for Citizens	Could Do	  
Strategic Infrastructure Funding Review	Could Do	
Utilities Coordination Strategy	Could Do	
Transit and Other Modes Integration	Aspire To	    
Household Travel Survey	Aspire To	 
Transit Avenue Guidelines	Aspire To	   
Arterial Roads for Development Bylaw Review	Aspire To	  
Life Cycle Cost Analysis –Decision Framework	Aspire To	 
Prioritization study for infill stations on existing LRT system	Aspire To	    
Green Roads Design Guidelines for Edmonton	Aspire To	  
Transit System Growth	Will Do	    
North LRT	Will Do	    
NWLRT Concept Planning	Will Do	    
LRT Network Prioritization and Business Case	Will Do	    
SE and W LRT Preliminary Engineering	Will Do	    
Airport Service Pilot	Will Do	     
Late Night Service Pilot	Will Do	     
SMART Bus Implementation	Could Do	     

Initiative Name		Objectives Supported
Transit Service Enhancements	Could Do	     
Central Area Circulator Alignment Study	Could Do	    
Construction SE and W LRT	Aspire To	     
Integration Strategy for Transit to Other Modes	Aspire To	    
East LRT Alignment Study	Aspire To	    
Review of Private lands for interim Park and Ride	Aspire To	 
Transit Priority Corridors Implementation Plan	Aspire To	   
Transit Enabling Infrastructure Growth	Will Do	   
Active Modes	Will Do	  
Downtown Cycling Master Plan	Will Do	  
Downtown Cycling Master Plan	Will Do	  
Update Shared Use Paths Master Plan	Will Do	   
Roads Growth	Will Do	 
Arterial Roadway Expansion	Will Do	
Goods Movement Strategy and Truck Route Update	Will Do	 
Yellowhead Trail Strategic Plan	Will Do	 
Transportation Systems Management Strategy	Will Do	  
Concept Plan for 75 Street	Could Do	  
Safe Roadway Systems Strategy	Will Do	
Parking Management Implementation	Will Do	
Enabling Roadway Infrastructure Growth	Will Do	
Kennedale Traffic Shop	Aspire To	

APPENDIX 2

FUNDING SOURCES



Funding Sources

The City of Edmonton leads operating and capital programs that are funded from a variety of sources. Often funding sources will guide expenditures – for example grant funding from other levels of government may be associated with certain types of spending. Ultimately, the City seeks to increase its financial sustainability and maximize the use of available funding.

Property Tax

Residential property taxes are used by the City to pay for services, amenities and infrastructure including transportation. The remaining costs are paid for by grants, user fees, and business and non residential taxes.

Fuel Tax

The Federal and Provincial governments provide the City of Edmonton with funding from the federally and provincially administered taxes that are levied on purchases of gasoline and diesel.

This Provincial funding from fuel taxes has provided the City \$105 million on average for each of the years from 2009 to 2011. Beginning in 2011, changes to the program's funding methodology will see Edmonton receive less fuel tax dollars than previously projected for 2012-2014. Based on information from the Province, the City's allocation is projected to go from \$107 million in 2010 and \$102 million in 2011, to \$97 million in 2012, \$92 million in 2013, and \$87 million in 2014. While the City's allocation beyond 2014 is unknown, an inflation factor of five per cent per year has been used to project CTF funding for 2015-2021.

Edmonton's current allocation of Federal Gas Tax is \$43.6 million per year until 2014, which is the end of the current contribution agreement. While the City's allocation beyond the existing agreement is not known, the Federal government has confirmed this as an ongoing funding program that will continue beyond 2014.

Transit Fares

The transit services provided by the City of Edmonton generate revenue that offset over 44% of the operating costs of the service. Revenue from transit services was about \$104 million in 2011. ETS also provides contracted service to regional destinations and provides services for special events. This generated about \$2.1 million in 2011 which is used to offset the cost of providing the service.

Advertising Revenue

Advertising revenue is currently generated by the advertisements placed at bus stops, in LRT stations and Transit Centres, and on/in buses. In 2011, advertising generated almost \$5.5 million.

Parking Fees

On street parking meters in the City of Edmonton generate revenue for city operations. In 2011, about \$6.1 million was generated from parking meters.

Federal Government

The Federal Government, through Building Canada, provides a group of funding initiatives including Provincial-Territorial Base Funding, the Municipal GST Rebate, Gas Tax Fund, and the Building Canada Fund which is planned to total \$33 billion in infrastructure investments from 2007 to 2014. The Federal Government also provides funding for transportation through the Public Transit Fund and the Infrastructure Canada Program.

Province of Alberta

The Province of Alberta provides funding through a combination of programs to Alberta municipalities and also allocates portions of the funding stemming from the federal government. Provincial funding programs include the Municipal Sustainability Initiative (MSI), Provincial Fuel (Gas and Diesel) Tax for purchases of fuel made in the city, Greentrip and Regional Partnerships Initiative (RPI).

The Green Transit Incentives Program (GreenTRIP) is a one-time capital funding program that will support public transit in Alberta. This program is intended to provide Albertans with a wider range of sustainable public transit alternatives which will help increase transit ridership, reduce traffic congestion and thereby reduce greenhouse gas emissions. The total amount of GreenTrip funding for the Edmonton Capital Region is \$800 million. The Capital Region Board (CRB) has recommended an allocation of \$732 million for Edmonton. However, work needs to be done with the CRB to confirm the priorities for this funding allocation. To date, Edmonton has been granted \$497 million in GreenTrip funding by the Province for the North LRT to NAIT extension.

Private Sector

The private sector funds a sizable portions of the infrastructure for new neighbourhoods including roads, and in some cases is funding the initial implementation of transit services. Business owners or adjacent land owners have also contributed in the past to roadway improvements that provide direct benefit to their property.

Arterial Roadway Assessments

Arterial Roadway Assessments (ARA's) are collected as a condition of a subdivision or development permit. They establish how developers will share the costs of arterial roadway infrastructure.

Neighborhood Renewal - Dedicated Tax Levy

Council approved a dedicated tax levy for the Neighbourhood Renewal Program starting in 2009. The levy was 1.5 per cent for 2011. The dedicated tax will be 1.5 to 2 per cent per year until the program funding requirement can be met by the dedicated tax on its own. Currently, the funding from the dedicated tax is supplemented with other funding (predominantly MSI) to meet the level of funding required for the program. The ten year funding plan includes the levy continuing at 1.5 per cent per year until 2018. This will need to be reevaluated annually.

Local Improvement Fees

For tax-supported operations, local improvements are used exclusively through the Transportation Services capital program. The City borrows money through a formal borrowing bylaw to front-end specific projects, which are then recovered over time from residents benefiting from these improvements. Local improvements can be resident-initiated or City-initiated. Examples of resident-initiated local improvements include alley paving and lighting, curb crossings, and resident-initiated sidewalks and roads. City-initiated local improvements include cost-shared sidewalk reconstruction. The Neighbourhood Renewal Program uses local improvements as a cost-sharing tool for sidewalk reconstruction and replacement.

Debt Financing

When it comes to infrastructure, the immediacy of borrowing can be a significant advantage as projects may be able to proceed sooner. For high priority projects, debt may have an added advantage of leveraging capital dollars from other sources, such as federal or provincial grants or participation from the private sector. There is also an advantage to using debt when construction cost escalation is greater than the cost of borrowing and when capacity is available.

Debt was re-introduced by the City for tax-supported operations in 2002. Since 2007, with substantial investment in City infrastructure, debt has been a key financing tool to advance high priority, large scale projects, such as South LRT, North LRT, Recreation Centres, Great Neighbourhoods, and Whitemud Drive/Terwillegar Drive Bridge Rehabilitation. The City's Debt Management Fiscal Policy (DMFP) allows for the consideration of long-term debt related to capital expenditures for:

- Large projects with long-term benefits;
- Projects with benefits for the community-at-large (for tax-supported debt);
- Growth-related projects;
- Emerging needs to support corporate priorities and approved strategic plans; and
- Major rehabilitation of existing assets.

APPENDIX 3

PROJECT PRIORITIZATION



For the Capital Beget Project Prioritization, the following criteria were used to assess project contribution to The Way We Move Strategic Goals along with the derived weighting determining its priority. Detailed methodology was developed for the assessment of the following criteria questions:

Access and Mobility

- How much does the project improve movement of goods and services on goods and services movement corridors?
- Does the project improve accessibility of the transportation system for people with mobility challenges?
- Does the project improve efficiency of the existing roadway system by using tools as outlined on page 67 of The Way We Move?

Economic Vitality

- Does the project improve the connection of people, goods and services between Regional Hubs?
- Does the project improve mobility to major employment areas within Edmonton including the Central Area?

Health and Safety

- Does the project address a recognized roadway safety need?
- Does this project address a recognized transit security need?
- How much does the project support healthy, active lifestyles?

Sustainability

- Does the project reduce local or area-wide transportation-related emissions and pollutants?
- What are the annual life cycle costs of the project?
- What is the ability of the project to annually generate revenue and/or decrease capital or operating costs?
- Does the project improve quality of life or livability in the Edmonton context?

Transportation and Land Use Integration

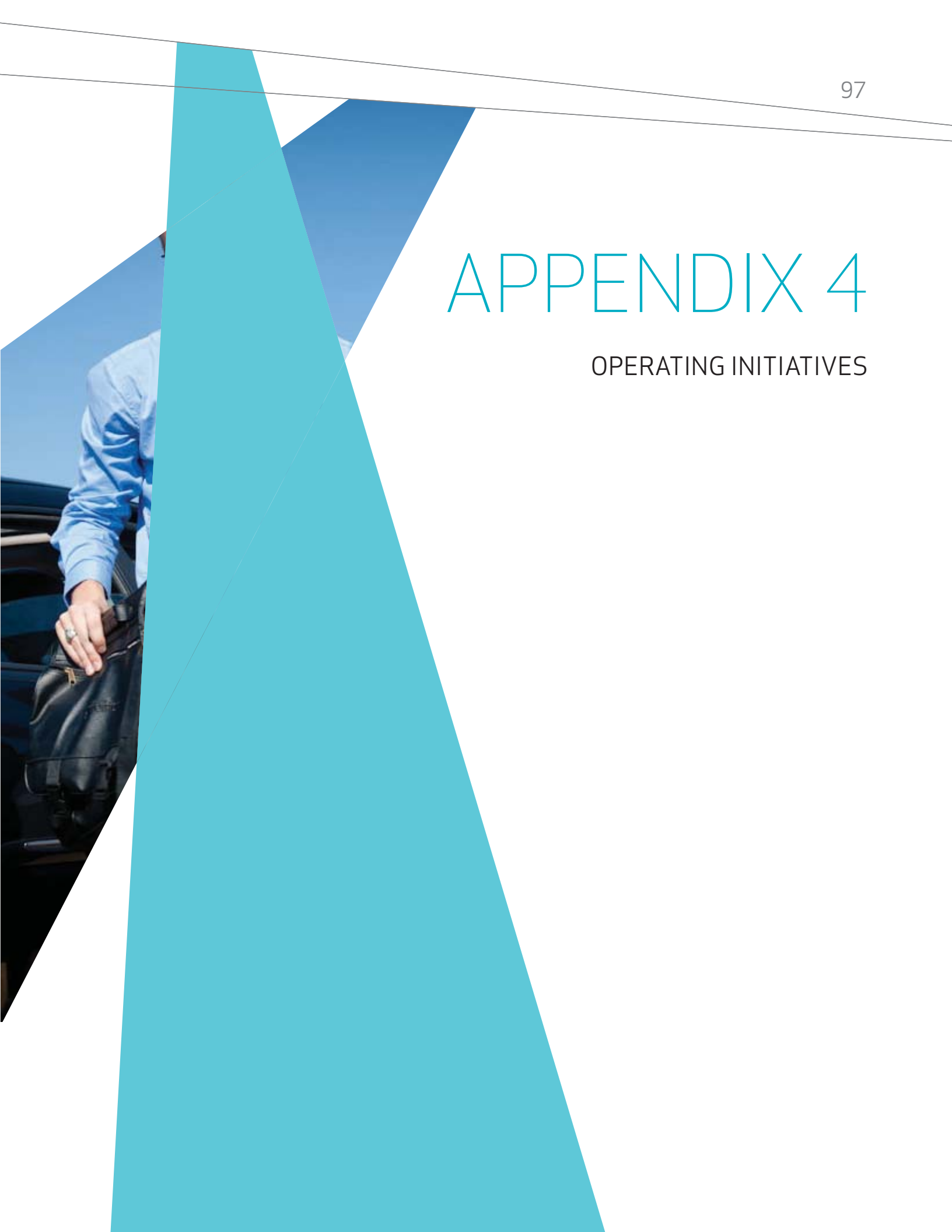
- How much does the project support The Way We Grow policy 3.1.1.2: “encourage a minimum of 25% of city-wide housing unit growth to locate in the Downtown and mature neighbourhoods and around LRT stations and transit centres”?
- How much does the project improve goods access to Edmonton's Industrial Areas?
- Does the project support a long term positive transformation in terms of quality of life, sustainability, image, urban design or urban form?

Transportation Mode Shift

- How much does the project encourage people to shift away from the single occupancy vehicle?
- Does the project improve transit customer experience?

APPENDIX 4

OPERATING INITIATIVES



WILL DO – Office of the General Manager

- 1) Comprehensive Transit Review

WILL DO – Lead Planning

- 2) Complete Streets
- 3) MMLOS and Congestion Policy
- 4) NW LRT Concept Planning
- 5) Traffic Impact Assessment Guidelines
- 6) Urban Traffic Noise Policy
- 7) Urban Corridor Planning - 112 Avenue / Highlands
- 8) Urban Corridor Planning - 127 Street, 118 Ave to Yellowhead Trail
- 9) Impact of Urban Design on Snow and Ice Control
- 10) Yellowhead Trail Strategic and Concept Plans
- 11) Student Outreach Programs to support The Way We Move
- 12) Maintenance and Snow Clearing Policy for Active Transportation and TOD Areas
- 13) Downtown Cycling Master Plan
- 14) Long term LRT Business Cases
- 15) Goods Movement Strategy
- 16) Seniors Transportation Strategy
- 17) Transportation Systems Management Strategy
- 18) Household Travel Survey Preparation Work
- 19) Update Shared Use Paths Master Plan
- 20) Transit and Other Modes Integration Strategy

WILL DO – Lead Transportation Operations

- 21) Roadside Snow Storage Strategy
- 22) Safe Roadway Systems Strategy
- 23) Parking Management Implementation
- 24) Utilities Coordination Strategy

WILL DO- Lead Transit

- 25) Airport Service Pilot
- 26) Late Night Service Pilot (Night Ride)
- 27) Trip Planner Strategic Review
- 28) DATS Eligibility Process Update

WILL DO – Lead LRT Design and Construction

- 29) SE and W LRT Preliminary Engineering
- 30) LRT Sustainable Urban Design Integration Guidelines

COULD DO

- 1) Central Area Circulator Alignment Study
- 2) Concept Plan for 75 Street
- 3) Increased Trip Planning Support for Citizens
- 4) Transit Service Enhancements
- 5) Strategic Infrastructure Funding Review

WILL DO

To support progress towards the Council vision, a number of operating initiatives have been identified as key elements of implementation of The Way We Move. These initiatives are both one time and ongoing program area initiatives. This information was evaluated and prioritized by a departmental committee in order to inform the development of service packages and work programs for future operating budgets. There are three groups of initiatives described below that reflect an assessment of funding realities and available operating resources: Will Do, Could Do, and Aspire To.

'Will do' initiatives are scheduled to be completed within the next 3 years using existing resources.

1) Comprehensive Transit Review

Council identified the need for the City administration to review its approach to transit service delivery during the 2012 Operating Budget deliberation. As a core municipal service, public transit supports mobility and enriches quality of life. Currently, there are numerous policies and procedures that govern operation of Edmonton Transit. While these processes are important, some requirements may restrict the delivery of a customer-focused, reliable and affordable public transit service. This holistic review may include, (but is not limited to) fleet, fare policy, regional governance, and system design. Terms of reference for this review are currently in development.

Lead Group: Office of the General Manager / Edmonton Transit, Estimated Project Duration = 12 months

Resources Required: TBD, Consulting Budget = TBD

Key Partners – TBD

Support Resources TBD

2) Complete Streets

Complete Streets is a new approach to planning and designing Edmonton's transportation system that moves away from the traditional, mobility-based approach. It's based on the idea that how a street is designed should reflect the surrounding area and provide mobility for all users.

Lead Group: Office Transportation Planning, Estimated Project Duration = 12 months

Resources Required: Existing/Budgeted Resources, Consulting Budget = \$300,000

Key Partners – Transit, Operations, Sustainable Development

Support Resources < 0.25 FTE

3) Multi-modal Level of Service and Congestion Policy

The City is developing a multi-modal Congestion Management Framework to manage congestion in a consistent and cost effective manner. Multi-modal Level of Service is the approach that will be used for both planning and evaluating the performance of current or planned infrastructure. Multi-modal Level of Service is a rating system that is used to broadly assess the travel experiences for pedestrians, bicycles, auto, transit and trucks along a specified corridor or location.

Lead Group: Office Transportation Planning, Estimated Project Duration = 12 months

Resources Required: Existing/Budgeted Resources, Consulting Budget = \$300,000

Key Partners – Transit, Operations, Sustainable Development

Support Resources < 0.25 FTE

4) Northwest LRT Concept Planning

The City of Edmonton is planning to extend the LRT from the NAIT station currently under construction to the northwest city limits. Following an extensive corridor evaluation process, 113A Street was approved by City Council as the future Northwest LRT route on July 7, 2010. Additional details will be developed for the proposed expansion, including integration with the City Centre Redevelopment and crossing the of the CN rail yard.

Lead Group: Office Transportation Planning, Estimated Project Duration = 12 months

Resources Required: Existing/Budgeted Resources, Consulting Budget = \$1,500,000

Key Partners – Transit, Operations, Sustainable Development

Support Resources 0.25-1.0 FTE

5) Traffic Impact Assessment Guidelines

To help facilitate review of Traffic Impact Assessments a Guideline is being developed. This will provide decision criteria to determine when an impact assessment would be required and provides guidance for preparation of appropriate support data. It outlines how the assessment will evaluate the impact of location and other attributes of the proposed development and defines the preferred format for submission of documents.

Lead Group: Transportation Planning, Estimated Project Duration = 12 months

Resources Required: Existing/Budgeted Resources, Consulting Budget = \$150,000

Key Partners – Transit, Operations, Sustainable Development

Support Resources 0.25-1.0 FTE

6) Urban Traffic Noise Policy Update

The Urban Traffic Noise Policy was last updated in 2004 and is based on a review of the 1983 Urban Traffic Noise Policy Study and the traffic noise policies of other Canadian jurisdictions. It seeks to mitigate excessive traffic noise for residential land uses adjacent to major transportation corridors.

Lead Group: Transportation Planning, Estimated Project Duration = 12 months

Resources Required: Existing/Budgeted Resources, Consulting Budget = ?

Key Partners – Transit, Operations, Sustainable Development

Support Resources < 0.25 FTE

7) Urban Corridor Planning - 112 Avenue/Highlands

Roadway alternatives will be explored along 112 Avenue to reconfigure the existing four lane roadway, through consultation with the affected communities, in order to support adjacent land uses and encourage greater walkability.

Lead Group: Transportation Planning, Estimated Project Duration = 12 months

Resources Required: Existing/Budgeted Resources

Key Partners – Transit, Operations, Sustainable Development

8) Urban Corridor Planning - 127 Street, 118 Ave to Yellowhead Trail

Roadway alternatives will be explored along 127 Street from 118 Avenue to Yellowhead Trail regarding design elements that can make this corridor more supportive of sustainable transportation modes. Consultation with the affected communities will be conducted to determine how to best support adjacent land uses and encourage greater mobility.

Lead Group: Transportation Planning, Estimated Project Duration = 12 months

Resources Required: Existing/Budgeted Resources, Consulting Budget = n/a

Key Partners – Transit, Operations, Sustainable Development

9) Impact of Urban Design on Snow and Ice Control

Administration is working with the Urban Development Institute and other stakeholders regarding the impact of urban design on snow and ice removal in neighbourhoods and communities as a part of the Snow and Ice Control Policy Review.

Lead Group: Office Transportation Planning, Estimated Project Duration = 12 months

Resources Required: Existing/Budgeted Resources, Consulting Budget = n/a

Key Partners – Transit, Operations, Sustainable Development

Support Resources < 0.25 FTE

10) Yellowhead Trail Strategic and Concept Plans

Yellowhead Trail is the most highly used goods movement corridor in the City. As part of the national highway network and the Inner Ring Road, it is a key facility for the City and the regional economy. The Yellowhead Trail Strategic Plan is ongoing, with the ultimate function and role of Yellowhead Trail as a free flow facilities is being contemplated.

Lead Group: Office Transportation Planning, Estimated Project Duration = 3 years and ongoing

Resources Required: Existing/Budgeted Resources, Consulting Budget = \$10,000 for Strategic Plan, \$400,000 for Yellowhead Trail and 149 St concept plans for 2012 to 14 and \$250,000 annually for 2013 to 2016

Key Partners – Operations, Sustainable Development

Support Resources < 0.25 FTE

11) Student Outreach Programs to support The Way We Move

Programs that encourage elementary, junior, and senior high student to develop transportation habits that support transit and active modes have a significant potential to positively affect mode shift. New programs will be developed along with increased coordination of the programs that are currently in place.

Lead Group: Transportation Planning, Estimate Project Duration: 1 year start-up; ongoing implementation

Resources Required: Existing/Budgeted Resources

Key Partners – Transit

Support Resources < 0.25 FTE

12) Maintenance and Snow Clearing Policy for Active Transportation and TOD Areas

Recognizing Edmonton's identity as a Winter City requires a holistic approach to all seasons mobility. An active transportation maintenance policy would provide clarity and encourage year round mode shift. This is increasingly important as the City invests in active modes infrastructure and supports TOD.

Lead Group: Transportation Planning, Estimated Project Duration = 6 months

Resources Required: Existing/Budgeted Resources

Key Partners – Transit, Transportation Operations, Sustainable Development, Community Services

Support Resources < 0.25 FTE

13) Downtown Cycling Master Plan

Through the development of the Capital City Downtown Plan, the need to move forward with planning and implementation of bicycle facilities in this area was identified. The downtown is a critical area where bicycle facilities need to be strategic located within a densely structured urban environment. The City's Bicycle Transportation Plan provides direction for the facilities and a network to support and encourage city-wide cycling. Ensuring that the wider network integrates with the central area will significantly contribute to the successful implementation of the Bicycle Transportation Plan.

Lead Branch: Transportation Planning, Estimated Project Duration = 1 year

Resources Required: Existing/Budgeted Resources

Key Partners – Transit, Transportation Operations, Sustainable Development, Community Services

Support Resources 0.25-1.0 FTE

14) Long-term LRT Business Cases

The City's long term program for LRT expansion will involve significant capital and operating resources. City Council has identified the next priority for LRT expansion as the Southeast and West LRT. Beyond that, there are six possible next priorities at various stages of planning and design. Developing business cases for program elements would allow efficient allocation of planning and design resources as well as effective construction staging to support funding applications.

Lead Group: Transportation Planning, Estimated Project Duration = 6 months

Resources Required: Existing/Budgeted Resources

Key Partners – Transit, Sustainable Development

Support Resources < 0.25 FTE

15) Goods Movement Strategy

The Way We Move identifies the City's commitment to support efficient goods movement in order to enable economic development and support the competitiveness of businesses within the City of Edmonton. Transportation of commodities throughout the city is largely carried out by trucks and is critical for an efficient and productive economy. Identification of key goods movement corridors would allow efforts to be focused on the most appropriate locations and update the truck routes and dangerous goods routes accordingly. The last complete review of trucks and dangerous goods routes occurred in 1996.

Lead Branch: Transportation Planning, Estimated Project Duration = 1 year

Resources Required: Existing/Budgeted Resources

Key Partners – Transit, Transportation Operations

Support Resources 0.25-1.0 FTE

16) Seniors Transportation Strategy

In view of demographic trends within the City of Edmonton, addressing the needs of a growing senior population is critical. The Seniors Transportation Strategy would include a review of all modes of the transportation network from a senior's point of view, ensuring the overall transportation system is efficient, accessible and senior-friendly. This will support the Council lead Seniors Initiative which identifies transportation goal and outcomes for seniors.

Lead Group: Transportation Planning, Estimated Project Duration = 6 months

Resources Required: Existing/Budgeted Resources

Key Partners – Transit, Community Services

Support Resources 0.25-1.0 FTE

17) Transportation Systems Management Strategy

Transportation Systems Management has the potential to significantly improve the operation of existing roadways and transit. To coordinate the delivery of this technology based approach including Intelligent Transportation Systems (ITS) and Transit Signal Priority (TSP), an overall strategy is needed which would include linkages to current transit and operations projects. The current plan in place was developed in 1999 and is now obsolete.

Lead Group: Transportation Planning, Estimated Project Duration = 1 year

Resources Required: Consulting Budget = \$250,000

Key Partners – Transportation Operations, Transit

Support Resources >1.0 FTE

18) Household Travel Survey Preparation Work

Detailed traveler information is critical to support effective decision making, report performance, measure progress towards targets, and prepare planning forecasts. This information was last collected in 2005, prior to the opening of the South LRT and Anthony Henday Drive. A comprehensive survey should be completed by 2015 in order to maintain integrity of transportation planning models. In general, the industry average for recalibrating this type of detailed data is 5-10 years. In advance of completing the next Household Travel Survey, preparation work is needed to ensure the needed data can be collected in the most cost effective way possible. This will include investigation of partnering with academic institutions and possible funding through other orders of government.

Lead Group: Transportation Planning, Estimated Project Duration = 1 year

Resources Required: Existing/Budgeted Resources

Key Partners – none

Support Resources none

19) Update Shared Use Paths Master Plan

The Multiuse Trail Corridor Study was done in 2001 and many of the identified trails have been completed. There is a need to update this study to determine the next priority trails and new trails as a result of the ongoing expansion of the city. In addition, trail naming and branding opportunities will be investigated as part of the program goal of providing active transportation options and promoting healthy, active lifestyles.

Lead Group: Transportation Planning, Estimated Project Duration = 1 Year

Resources Required: Existing/Budgeted Resources

Key Partners – Transit, Community Services

Support Resources < 0.25 FTE

20) Transit and Other Modes Integration Strategy

As active modes and LRT infrastructure is expanded throughout the city, there is a growing need to focus on multi modal integration, such as bicycles to LRT, “kiss and ride” and provision of dedicated taxi stalls. Currently, strong integration exists between bus and LRT however there is a significant potential to further increase transit ridership with relatively low cost improvements encouraging system access from other modes. For these to be effective, improvements need to be coordinated across the system to provide a reliable, integrated service.

Lead Branch: Transportation Planning, Estimated Project Duration = 6 months

Resources Required: 1.0 FTE

Key Partners – Transit, Vehicle For Hire Commission

Support Resources <0.25 FTE

21) Roadside Snow Storage Strategy

Creative solutions to snow storage along roadway ROW and transit centers will allow efficient operations of the roadway system and promote extended infrastructure life. These are increasingly important as the City develops urban style LRT and implements Complete Streets policies. This project involves strategic review of existing conditions for opportunities to implement roadside snow storage solutions with a view to increase infrastructure return on investment.

Lead Group: Transportation Operations, Estimated Project Duration = 6 months

Resources Required: Existing/Budgeted Resources

Key Partners – Transit, Transportation Operations, Sustainable Development

Support Resources < 0.25 FTE

22) Safe Roadway Systems Strategy

Several jurisdictions are applying the Safe System philosophy to develop and implement successful road safety programs, including Canada's National Road Safety Strategy, the upcoming Alberta Traffic Safety Plan, Vision Zero in Sweden and Safe Systems framework in Australia. This approach is based on four key principles: Safe road use, Safe roads & roadside, Safe speeds and Safe vehicles. This project will follow successful work that was completed between the Office of Traffic Safety (OTS) and the Capital Regional Intersection Safety Partnership (CRISP) and will engage stakeholders from the Province of Alberta. This supports the Council lead Traffic Safety initiative and aligns with the Joint Traffic Safety Plan.

Lead Group: Transportation Operations, Estimated Project Duration = 1 year

Resources Required: Existing/Budgeted Resources

Key Partners – EPS, Transportation Planning

Support Resources < 0.25 FTE

23) Parking Management Framework

The City is in the process of completing a strategic review of parking management including review and analysis of parking control technology and procedures. Due to the intrinsic link between parking and land use planning, transportation infrastructure, and mode choice as well as complexities related to implementation of parking controls, a new governance framework will be developed. This will outline roles and responsibilities related to parking management to enable integration of parking policy, management and enforcement across the corporation.

Strategy will be completed in summer 2012 with implementation planned for 2013/14.

Lead Group: Transportation Operations

Resources Required: Existing/Budgeted Resources

Key Partners – Transportation Planning, Finance, Sustainable Development

Support Resources >1.0 FTE

24) Utilities Coordination Strategy

To improve efficiency and coordination of underground work that takes place in neighborhoods along City owned right-of-way, a review of industry practices and trenching technologies has taken place. This has included a review of in house capacity compared with continuing use of EPCOR and has resulted in a recommendation to proceed with either a new agreement or delivering services with in house capacity. The City is implementing integrated technology and geographic information systems to allow better management of on street construction, utility scheduling and impacts of new development servicing.

Strategy completed in 2012 with implementation to follow before 2013 construction season.

Lead Group: Transportation Operations, Estimated Project Duration = ongoing

Resources Required: Existing/Budgeted Resources

Key Partners –Transportation Planning, Infrastructure Services, Sustainable Development

Support Resources < 0.25 FTE

25) Airport Service Pilot

Route 747, Edmonton Transit's direct service to the Edmonton International Airport, is provided through a partnership between the City of Edmonton and the Edmonton International Airport. Buses travel directly from Century Park Transit Centre to the International Airport and return (no stops en route).

Lead Group: Transit, Estimated Project Duration = 3 year pilot for ongoing implementation

Resources Required: \$222,000 net annual requirement (2012 service package)

Key Partners – Edmonton International Airport

Support Resources n/a

26) Late Night Service Pilot (Night Ride)

The Night Ride late night transportation pilot on Whyte Avenue operated Friday and Saturday nights between 1:30 a.m. and 3:30 a.m. The pilot project completed its last run on the weekend of April 13-14, 2012. The intent of the pilot is to test feasibility of late night service delivery.

Lead Group: Transit, Estimated Project Duration = 3 month pilot for ongoing implementation

Resources Required: \$556,000 net annual requirement (2012 service package)

Key Partners – Responsible Hospitality Edmonton

Support Resources n/a

27) Trip Planner Update

The Transit Trip Planner is an important tool that allows citizens to efficiently plan their transit trips. Updates to the technology used will be required based on advances in information technology and implementation of projects such as SMART Bus. As well, integration of mobile device applications and a review of the potential opportunities of an open source environment are required.

Lead Group: Transit, Estimated Project Duration = TBD

Resources Required: TBD

Key Partners -n/a

Support Resources Information Technology

28) DATS Eligibility Process Update

Introduce in person assessments for DATS eligibility

Lead Group: Transit, Estimated Project Duration = ongoing

Resources Required: 2 FTEs

Key Partners -Community Services

Support Resources < 0.25 FTE

29) SE and W LRT Preliminary Engineering

The SE to W LRT is now in the preliminary design phase. This largely street-level LRT line will use low-floor LRT vehicles and will extend from Mill Woods Town Centre in the southeast of Edmonton to Lewis Farms Transit Centre at the city's west end. The Preliminary Design builds on the approved Concept Plans by conducting more detailed analysis of how the new low-floor urban LRT will operate, as well as how the system will integrate into the existing and planned transportation network and adjacent communities. The 13.1 km SE LRT from Mill Woods to City Centre West is the City's next LRT priority. However, construction timelines for the project are currently unknown, as there is currently no funding in place to build the SE LRT.

Lead Group: LRT Design and Construction, Estimated Project Duration = 3 years

Resources Required: \$1,500,000

Key Partners -Transportation Planning, Transit, Operations, Sustainable Development

Support Resources >5 FTEs

30) LRT Sustainable Urban Design Integration Guidelines

The LRT Design Guidelines provide standards, guidance and performance-based design criteria for engineering and building LRT in Edmonton. These guidelines ensure that the City designs and builds a uniform system that is easy to maintain and upgrade. The new LRT Design Guidelines are being developed for future urban-style LRT projects.

Lead Group: LRT Design and Construction, Estimated Project Duration = 1 year

Resources Required: included in preliminary design of SE and West LRT

Key Partners -Transportation Planning, Transit, Operations, Sustainable Development

Support Resources >2 FTEs

COULD DO

Could do represents those next priority projects that would require modest service packages as they can not be accommodated within existing budgeted resources.

1) Central Area Circulator Alignment Study

This is a one-time budget request to retain a consultant to develop an alignment recommendation for the Central Area Circulator. The need for LRT service to create a wider Downtown network area was identified in the LRT Network Plan. The plan, as approved by council, is to connect the future Southeast and West LRT lines to the University and densely populated and vibrant area of Strathcona on the south side of the river. Further analysis and consultation is required to confirm the placement of this facility, including evaluation of a river crossing.

Lead Group: Transportation Planning, Estimated Project Duration = 1 year

Resources Required: 1.0 FTE, Consulting Budget = \$1,200,000

Key Partners –Transit, Sustainable Development

Support Resources 0.25-1.0 FTE

2) Concept Plan for 75 Street

This is a one-time budget request to retain a consultant to complete a functional and concept planning study for 75 Street from Whitemud Drive to Yellowhead Trail. This study will define the configuration of the east leg of the Inner Ring Road, a key goods and services movement corridor. This planning study will identify the benefits and impacts of the proposed plan including Right-of-Way (ROW) and road requirements. A significant program of public consultation will be undertaken to identify opportunities and challenges along constrained portions of this corridor as well as build consensus and improve public clarity regarding this portion of the City of Edmonton's transportation network.

Lead Group: Transportation Planning, Estimated Project Duration = 1 year

Resources Required: Consulting Budget = \$1,500,000

Key Partners –Transportation Operations, Sustainable Development, Community Services

Support Resources < 0.25 FTE

3) Increased Trip Planning Support for Citizens

As the City expands transit and active modes, trip planning support for citizens is critical to ensure the transportation system is well understood by the general public. This includes expanding traditional outreach programs to include all modes of travel as well as information systems to provide up to date information on available transportation alternatives.

Lead Group: Transportation Planning, Estimated Project Duration = ongoing with three year start up

Resources Required: 3.0 FTEs of temporary seasonal staff

Key Partners –Transit

Support Resources < 0.25 FTE

4) Transit Service Enhancements

ETS will continue to develop service plans that address the changing travel needs of Edmonton residents. Some of these service enhancements could include:

- Transit Service Quality Enhancements - General Improvements
- Transit Service Quality Enhancements - Cross-town Service
- Transit Overload & Schedule Adherence - Weekday Peaks
- Transit Technology Review
- New Transit Service - Off-peak - Weekday Late Night; Weekend Morning/Night
- New Transit Service - Off-peak - Weekday Midday/Early Evening; Weekend Midday
- New Transit Service - Weekday Peak Periods
- Transit Service Quality Enhancements - Off-peak Frequency (Service Standards)

Lead Group: Edmonton Transit

Project Duration: Evaluated Yearly

Net Operating Impact: varies

Key Partners – none

Support Resources n/a

5) Strategic Infrastructure Funding Review

As the City makes major investments in transportation infrastructure, the various levels of subsidies applied from different orders of government becomes a critical part of funding discussions. Past studies have found disproportionate levels of subsidy towards automobile modes relative to transit and active modes. In addition, full cost accounting analysis of infrastructure expansion, including consideration of maintenance and renewal, will inform budget processes and system planning.

Lead Group: Transportation Planning, Estimated Project Duration = 1 year

Resources Required: Existing/Budgeted Resources

Key Partners – Transit, Finance

Support Resources 0.25-1.0 FTE

ASPIRE TO

‘Aspire to’ initiatives represent a variety of projects that are anticipated to be implemented beyond 2014. These include anticipated follow up from initiatives that will be completed in the next 3 years, lower priority projects and projects that would require a considerable increase in resources for implementation. If additional dedicated resources are identified, the timing of some of these initiatives could be advanced.

Initiative	Lead
Household Travel Survey	Trans Planning
Transit Avenue Guidelines	Trans Planning
Arterial Roads for Development Bylaw Review	Trans Planning
Life Cycle Cost Analysis – Decision Framework	Trans Planning
East LRT Alignment Study	Trans Planning
Prioritization study for infill stations on existing LRT system	Trans Planning
Green Roads Design Guidelines for Edmonton (including Review of green paving for transportation facilities)	Operations
Transit Service Enhancements	Transit

APPENDIX 5

CAPITAL BUDGET INFORMATION SHEETS



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INTRODUCTION

Transportation Services manages Edmonton's roads, bridges, rails, buses, sidewalks and light rail transit (LRT). 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. The following information sheets are intended to supplement the information on the capital budget profiles and describe proposed capital expenditures based on approved budgets. These critical projects ensure the City's assets are well maintained and available for citizens. Below, each functional area is summarized along with the funding commitment for the 2012-14 Capital Priority Plan as resolved by Council in December 2011. This summary does not include subsequent budget adjustments made by Council.

Budget Category	Funding (M)
Bus Fleet	\$33.7
LRT Fleet	16.8
Enabling Transit Infrastructure	64.9
Transit Expansion	676.0
Neighbourhood Renewal	355.7
Active Modes	20.1
Bridges	174.5
Roads	203.9
Snow Storage	21.7
Enabling Roadway Infrastructure	38.4
Total	\$1,606

These categories were developed in order to provide a summary of the core activities implemented through capital programs within Transportation Services. For each of the areas above, the attached document presents how the department has ensured efficient allocation of available resources and best value for money. This includes outlining the various project controls, condition monitoring, status reporting, prioritization and asset inventory methods employed by all areas.

Overview of Capital Expenditures

Funding levels planned for the 2012-14 period required tough choices to be made. The City of Edmonton's 10-year Capital Investment Agenda outlines projected funding of \$6.1 B for 2012-21. When compared with total documented needs of \$17.0 B, the result is a shortfall of \$10.9 B over the next 10-year period. With the decision to debt finance Walterdale Bridge, additional funds were committed to enable several key projects to proceed.

For Transportation Services, funding realities have meant a strategic reduction of renewal and growth projects. In addition, during the previous 2009-11 period there was additional borrowing in order to take advantage of competitive prices in the construction market and fast-track funding programs. Overall, there is significant decrease in available funding for a number of areas from the previous period. Areas most acutely affected include roads and bus fleet, with a decrease of approximately 60 per cent. The Neighbourhood Renewal Program continues with a sustainable financing strategy that ultimately involves a self-funding dedicated tax levy.

Transportation Services represents a significant proportion of the City's resources. Annual operating costs of the transportation system are approximately one-third of the City's operating budget. Capital budgets for the roadway and transit systems accounts for approximately 20 per cent of the total renewal budget and approximately 60 per cent of the total growth budget. These significant resources are leveraged to deliver services for residents in line with the department's mission:

"To provide a safe, effective, efficient, reliable and integrated transportation system for the citizens of Edmonton."






BUS FLEET

Overview of Capital Expenditures

Edmonton Transit delivers a range of transit services within the City. Bus fleet replacement and growth is critical to ensure that vehicles are ready to deliver the daily service that citizens rely on. Capital Fleet expenditures are divided into two sections: fleet renewal and fleet growth.

In addition, strategically located garages are required to support the delivery of transit service in an efficient and effective way. Individual garage rehabilitation or growth projects have separate capital profiles. The current program titles and Capital Priority Plan (CPP) figures relating to bus fleet are as follows:

Previous and Future Funding (\$000)

<i>Program</i>	<i>2009-11</i>	<i>2012-2014 Budget</i>	<i>2012-2014 Need</i>	
Bus Fleet Renewal (1281)	45,325 ¹	10,105 ¹	26,194 ¹	
Bus Fleet Growth (1681)	31,080	0	66,016 ²	
SMARTBUS (1293)	n/a	2,800 ³	1,600 ³	
Westwood Garage Minor Rehabilitation (1412)	n/a ³	6,000 ⁴	2,505 ⁴	
New Transit Garage (1413)	n/a	14,760 ⁴	14,760 ^{4,5}	




Note 1: Includes approved funding available in 09-66-1281 and 12-66-1281; need is based on Capital Investment Agenda budget request of 20,975 in 2012, 2,775 in 2013 and 2,444 in 2014.

Note 2: Based on Capital Investment Agenda budget request of 27,776 in 2012, 18,917 in 2013, and 19,323 in 2014

Note 3: Funding amount represents a limited fleet pilot; estimate to implement across entire fleet is \$32.6M

Note 4: Total previously approved funding for 11-66-1412 was \$32.6 M, funding is recommended to be reduced (see report 2011TS4639) to \$20.8 M with \$6 M for short-term facility rehabilitation and \$14.8 M for land acquisition and design of a new facility

Note 5: Cost estimate for the entire facility, to be constructed beyond 2014, is \$150M

<u>Funding Legend</u>	
	Funded
	Partially Funded
	Not Funded

Current Fleet

Low-floor Buses, 40 ft.	877
Average age	7 years
Expected lifespan	18 years
Asset value	\$374 M
Articulated Buses, 60 ft.	33
Average age	4 years
Expected lifespan	18 years
Asset value	\$8.9 M
Community Buses	49
Average age	4 years
Expected lifespan	10 years
Asset value	\$11.4 M
DATS Buses	98
Average age	5 years
Expected lifespan	7 years
Asset value	\$8.1 M

Fleet Renewal**Service Hours**

In 2012, it is estimated that scheduled bus service will exceed 2,118,000 hours. Edmonton Transit operates a variety of different types of service to serve Edmonton's citizens.

Conventional Buses

ETS has 877 accessible low-floor units, including four hybrids that are manufactured by New Flyer Industries. 30 per cent of the fleet is also equipped with front mounted bicycle racks. The low-floor buses have 38 seats, capacity for standees and the ability to accommodate two wheelchairs. The unit price for a 'clean diesel' bus is approximately \$461,000, and the price for a hybrid vehicle is over \$700,000. The asset value of the conventional bus fleet is estimated at \$374 M¹.

Articulated Buses

Low-floor articulated buses help to reduce crowding on popular routes. They have 20 ft. more space than a conventional bus, allowing a seating capacity of 51, capacity for standees and the ability to accommodate two wheelchairs. The fleet currently has 33 New Flyer 60 ft. buses. The asset value of the articulated bus fleet is estimated at \$8.9 M¹.

Community Service Buses

Community service buses are used in areas with lower ridership and where a larger, full-size bus cannot manoeuvre as easily. There are a variety of vehicle manufacturers in the current fleet: ELF-6; Glaval-13; International-3; El Dorado Passport-27. The current replacement value of the community service bus fleet is estimated at \$11.4 M.

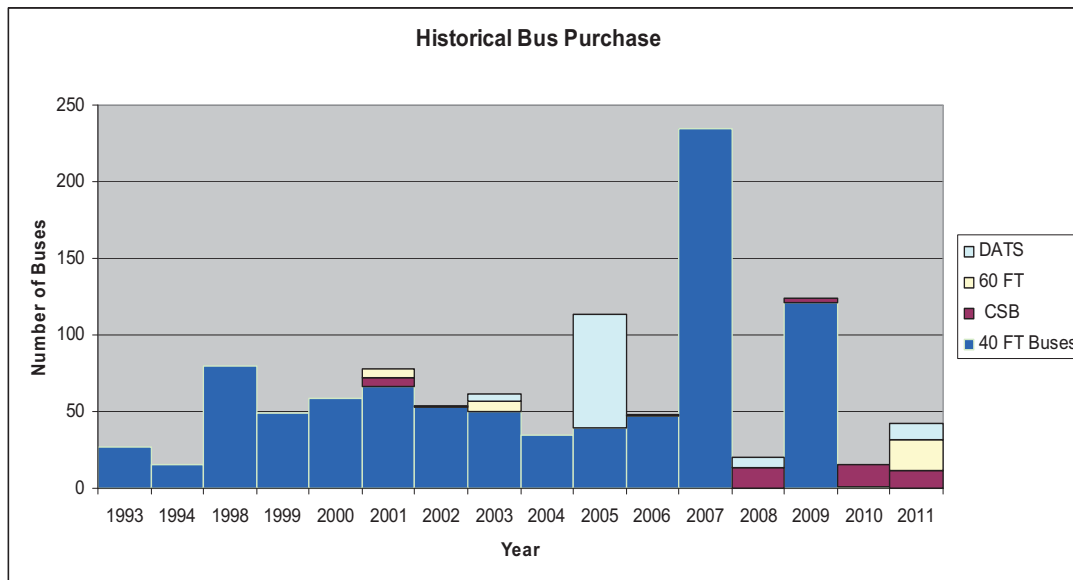
DATS Buses

Disabled Adult Transit Service (DATS) provides door-to-door public transportation for registered, pre-booked passengers 16 years of age or older who have a severe physical or cognitive disability and meet the required eligibility criteria. The system operates through a mix of fleet and contract vehicles with DATS lift vans (98) and DATS contracted vehicles (74). The current replacement value of the DATS-owned bus fleet is estimated at \$8.1 M.

Historical Bus Purchases

Bus purchases since 1993 are shown in Figure 1. Currently, buses purchased in 1993 and 1994 are at their rated service life. Predictable bus fleet purchasing promotes more stable and efficient operations. This allows for major maintenance to be evenly distributed over multiple procurement cycles and avoids a "wave" of high intensity maintenance and "spikes" in capital budget requirements, as experienced in 2007 and 2009.

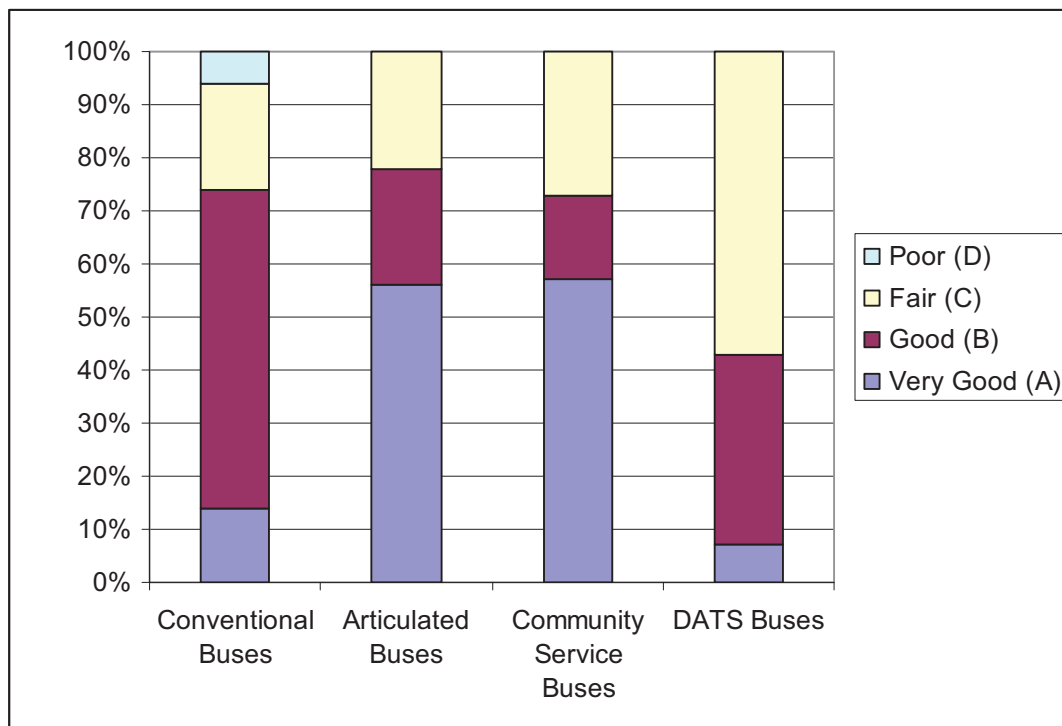
¹ This is based on data reported by the Office of Infrastructure, asset value as of December 31, 2010.

Figure 1: HISTORICAL BUS PURCHASES**Refurbishment**

The existing Edmonton Transit New Flyer buses are designed and tested for 12 years, or approximately 800,000 km. The City intends to keep these buses in service for 18 years by performing mid-life refurbishment, which reduces the probability of mechanical failures.

Condition Assessments

Edmonton Transit maintains asset condition assessment of the various vehicles that make up the overall fleet to anticipate when maintenance, mid-life refurbishment and replacement are required. Condition assessment results for the fleet are presented in Figure 2.

Figure 2: FLEET CONDITION ASSESSMENTS

For condition ratings Very Good (A) and Good (B), assets are physically sound and performing as originally intended. Very good (A) assets are typically new or recently rehabilitated. Good (B) assets have been used for some time and are within mid-stage of their expected life. Fair (C) assets show signs of deterioration and are functioning at a lower level than originally intended. Poor (D) assets are normally approaching the end of their expected lives with a major proportion of the assets being physically deficient. Maintenance costs increase beyond acceptable standards for Fair (C) and Poor (D) assets.

Renewal Funding

The funding for this program in 2012-14 is not ideal to maintain a sustainable condition rating. The following table shows how the program will be funded with the proposed budget.

2012-2014	Conventional 40' Buses	Articulated Buses	Community Service Buses	DATS Buses
Vehicles Replaced	0 (42 ¹)	0	0	65(65 ¹)
Vehicles Mid-Life Refurbished	45 (175 ¹)	0	0	0
Funding (\$000) ²	4,368	0	0	5,737

Note 1: Values indicate program work required to maintain sustainable condition rating.

Note 2: Includes approved funding available in 09-66-1281 and recommended funding in 12-66-1281.

Operation of 42 buses beyond the planned life expectancy of 18 years will require significantly greater effort to maintain compared to new replacement buses. By not undertaking the mid-life refurbishment program, component failure on the buses is expected. This will require unplanned, emergency repairs and generally higher maintenance costs, which are funded out of the operating budget. To maintain safe and reliable operation, additional operating expenses will be required, as shown below.

	2012	2013	2014
Additional operating expenses for buses maintained beyond service life of 18 years	\$864,000	\$1,073,000	\$1,301,000
Additional operating expenses for not undertaking mid-life refurbishment	\$131,000	\$808,000	\$2,155,000

Without a fully funded program or provision of operating funding, the safety and reliability of transit service in the city will be affected. A greater number of buses will not be available due to increased maintenance and more on-road service problems will occur.

Fleet Growth

As the city continues to expand and the population increases, citizens are demanding high quality transit service. Based on current information and market stability, cumulative ridership growth is estimated to be 7.9 per cent over the next three years. A growing community translates to additional bus service to cover new neighbourhoods, and address capacity and schedule adherence issues on existing routes during peak and non-peak hours.

Currently, Edmonton Transit’s bus fleet is near full utilization. Growth buses will be a necessary support in expanding ETS’s service hours and carrying capacity to meet the ongoing community demands. Additional buses are also required to allow for service quality improvements and to accommodate travel needs of the aging population in the city, in adherence to Council-approved Transit Service Standards (Policy C539).

In 2010, Edmonton Transit carried over 76 million riders, with growth of over 3 million riders projected for 2011. Growth buses are required for the following reasons:

- To provide peak service in developing neighbourhoods, meeting minimum thresholds identified in the transit service standards (Policy C539);
- To address peak period overload situations related to ridership growth;
- To address schedule adherence and service reliability issues caused by increasing traffic congestion and higher ridership levels;
- To provide new “industrial” service in areas like Aurum and Pylypow, where significant employment growth has occurred;
- To enhance service quality: adding capacity in heavily utilized corridors, adding “premium” bus service, and adding or extending cross-town bus routes.

Regular Routes

Regular routes are the core service, delivering mobility across the City in all time periods. These include mainline and local feeder service, express routes, service to industrial areas and community bus routes.

Current System	
Regular Routes	179
Custom Routes	>250
Community service routes	10

Custom Routes

Edmonton Transit operates custom routes primarily to accommodate student passenger loads. These routes provide efficient, targeted transit service to increase capacity and provide direct links where warranted.

Community Service Routes

Community Service routes provide a specialized service to maintain access for mobility challenged populations, such as seniors. The intent of these services is to provide seniors with a service that minimizes the amount of walking required for daily activities such as shopping and visits to health care providers. This specialized service emphasizes convenience of pick-up and drop-off locations over travel time. There are currently 10 routes that are fully or partially designed as community bus routes.

Transit Service Standards (Policy C539)

The City of Edmonton establishes Transit Service Standards as a guideline for the design of transit service and the level of service provided. The purpose of this policy is to set service standards that guide the design of the transit system, recognize customer needs and ensure the effective use of available resources. The policy establishes:

- Parameters for the level of service that should be provided;
- Route performance measures used to identify potentially under-performing and over-performing services, and;
- Guidelines for the implementation of new services, walking distances to transit service and time periods of operation.

System Performance Review

Edmonton Transit undertakes a yearly review of bus route operation relative to the Transit Service standards. The goal is to identify possible route overcrowding or underperformance, as outlined within the policy. Service hours are reassigned to ensure that maximum effectiveness of the overall system is achieved. Through this process, the need for additional service hours is identified to inform the operating budget process. This process also identifies service that would be eliminated if an overall reduction is required through service and budget review.

DATS Growth Buses

As the city's population ages, there will be likely be an increased demand for DATS service, specifically as there is growth in the number of people with a severe physical or cognitive disability who meet the required eligibility criteria. DATS does not operate a fixed-route service.

Bus Operations and Purchases

Additional service hours for transit are determined in the operating budget process. Fleet requirements to support this level of service are established through the capital budget process. Funding from other levels of government is a key component in planning capital bus expenditures.

Buses fleet purchases are managed through normal City procurement practices. Customer, bus operator and maintenance staff feedback is used to identify equipment features that will be included in the vehicle specifications.

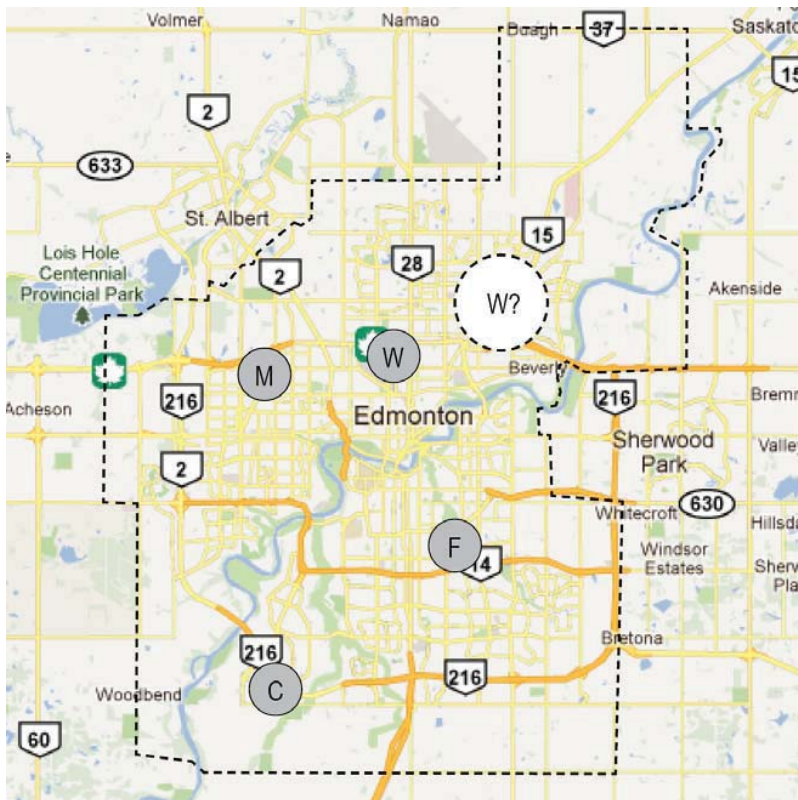
Bus Garages

Reliable daily transit service requires adequate facilities for staging, fueling, inspection and cleaning in order to maintain a well functioning bus fleet. The City is committed to a well maintained bus fleet to support additional growth of transit customers and ensure that buses are ready for service on a daily basis. Transit garages provide four key functions to the operation of the transit system: staging, fueling, inspection and cleaning.

The City currently operates strategically located transit garages across the city. Figure 3 below shows the conventional bus garage locations:

- Centennial Garage, C
- Westwood, W (replacement planned)
- Ferrier, F
- Mitchell, M

Figure 3: CONVENTIONAL BUS GARAGES



In addition, there is the Percy Wickman facility for maintaining the DATS fleet, and the Patterson Heavy Maintenance Facility for major bus refurbishment and engine overhauls.

Westwood Rehabilitation (1412)

The Westwood garage has been in service for 60 years and requires rehabilitation to maintain it as an operational facility. In the future, this facility will be relocated to better serve the overall system. However, it is critical to maintain adequate functionality until a new facility is completed. The current renovation value of the Westwood garage is estimated at \$6 M to maintain functionality for the next five years. Westwood's current capacity is approximately 300 buses.

There has been approximately \$3.5 M allocated towards this project in the previous period, to date, approximately \$700,000 has been spent. Total previously-approved funding for the project (11-66-1412) was \$32.6 M; however based on a strategic review it is recommended that only minor rehabilitation be performed. Funding is recommended to be reduced (see report 2011TS4639) to \$20.8 M, with \$6 M for short-term facility rehabilitation and \$14.8 M for land acquisition and design.

New Transit Garage (1413)

Growth identified in transit ridership over the next 10 years will require additional vehicles to meet customer demands. Garage capacity to maintain and operate the fleet is approximately 990 buses, with space to house up to 70 growth buses. Based on review of anticipated growth, existing facilities will adequately serve the fleet through 2016. Beyond that timeframe, a new garage is required to house the additional fleet and provide a strategic location for staging of bus operations in the Northeast quadrant of the city. Without this garage, operating and maintenance costs will increase due to increased required "dead head" travel. Garage overloading will decrease servicing efficiency.

The current value of the Northeast garage is estimated at \$150 M to provide space for approximately 400-500 buses. This would provide a similar consolidated facility as Centennial Garage to serve the Northeast quadrant of the city. This facility would replace the current Westwood facility. Major components of this project are land acquisition, design and construction. The current schedule for the facility would require initial operations in 2016. The ultimate size of the facility depends on Capital Project 12-66-1681 Bus Fleet and Equipment Growth.'

SMARTBUS (1293)

SMARTBUS improves the experience for the transit customer and minimizes operating costs by using technology to modernize the transit fleet. With almost 700 buses on Edmonton streets in the morning rush hour, it is now beyond the capacity of field staff to monitor the operational service and ensure it stays on time. This initiative will allow Fleet Operations to proactively manage the fleet, reduce lost service hours, improve communication with bus operators, improve on-road service and enhance security. In addition, customer experience will be improved by features that offer real-time bus information, improved security and more reliable service.

Edmonton Transit has funded a SMARTBUS pilot (1293) as a first step towards implementation of this mature technology. This program has a number of technological functions to improve overall service and operations:



- ASA - Automated Stop Announcements
- AVL - Automated Vehicle Location
- CAD - Computer Aided Dispatch
- MDT - Mobile Data Terminals
- APC - Automatic Passenger Counters
- AVM - Automated Vehicle Monitoring
- RTIS - Real Time Passenger Information Systems
- ISC - Integrated security cameras

LRT FLEET

Overview of Capital Expenditures

As the City has expanded its LRT system over the past 30 years, strategic fleet purchases have been necessary to provide the high quality transit service on which citizens depend. Renewal of these vehicles to maximize their useful life is funded through LRT Fleet renewal profile 1280. Projected ridership growth will require the purchase of additional vehicles, anticipated in profile 1651. As the NAIT LRT extension is completed and additional vehicles are purchased, a new LRT maintenance facility will be required, described in profile 1650.

Previous and Future Funding (\$000)

<i>Program</i>	<i>2009-2011</i>	<i>2012-2014 Budget</i>	<i>2012-2014 Need</i>	
LRT Fleet Renewal (1280)	23,469 ¹	16,842	16,842 ¹	
LRT Fleet Growth (1651)	31,080 ²	0	0 ³	
New LRT Maintenance Facility (1650)	n/a	0	60,000	

NOTE 1: Fleet retrofit program was originally approved in 2007; total amount funded to date is \$29,504; total program need from 2007 is \$46,445.

NOTE 2: Total cost of 11 Growth LRVs, from 2007-11 is \$42,959.

NOTE 3: Fleet growth required to meet demand beyond 2014 is estimate to cost \$88.4M

Funding Legend



Funded



Partially Funded



Not Funded

The Light Rail Transit (LRT) system operates electrically powered Light Rail Vehicles (LRVs) that are linked together in trains to provide a smooth, fast and efficient transit experience. These vehicles have a number of essential systems that contribute to rider comfort, safety and basic reliable operation, such as:

- Propulsion control system, electrical panels, buffers and couplers;
- Suspension and articulated joints;
- Auxiliary heaters and associated ductwork;
- Communications systems such as onboard CCTV, electronic destination signs and information signs.

In addition to maintaining the subsystems, periodic repair of body damage and corrosion is required, as well as refurbishment of car interiors.

Historical Vehicle Purchases

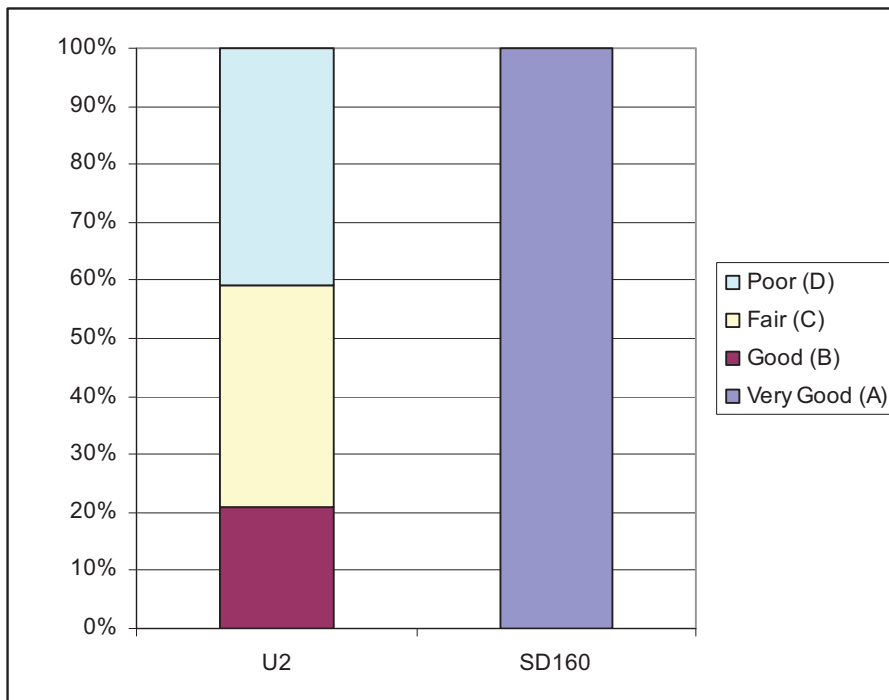
The LRT system originally went into service in 1978 with 14 Siemens-Duewag U2 vehicles. As the system expanded, additional vehicles were purchased, and synergies were realized as similar vehicles were operated on the Calgary LRT system. Three vehicles were placed in service in 1980 when the Clareview extension opened, and 20 vehicles were purchased in 1983 to provide service to Corona and the University, bringing the total fleet size to 37. After 1990, the U2 cars ceased production. The average age of the U2 fleet is 30 years, with an original design life of 35 years and an overall expected life span of 50 years with major mid-life upgrades.

With significant expansion of the LRT beyond the University, major fleet expansion was undertaken in 2009-10. The successor model to the U2, the SD160, was purchased. In total, 37 SD160 cars started service in 2009-10. The average age of the SD160 fleet is two years. The approximate purchase price of a 25 m light rail car is \$4.2 M. The asset value of the overall fleet is \$322 M.

Condition Assessments

Edmonton Transit maintains asset condition assessment of the various vehicles that make up the overall fleet to anticipate when maintenance, mid-life refurbishment and replacement are required. Condition assessment results for the fleet are presented in Figure 4.

Current Fleet	
U2	37
Average age	30 years
Expected lifespan	50 years
SD160	37
Average age	2 years
Expected lifespan	50 years
Total asset value	\$322 M

Figure 4: FLEET CONDITION ASSESSMENTS

For condition ratings Very Good (A) and Good (B), assets are physically sound and performing as originally intended. Very Good (A) assets are typically new or recently rehabilitated. Good (B) assets have been used for some time and are within mid-stage of their expected life. Fair (C) assets show signs of deterioration and are functioning at a lower level than originally intended. Poor (D) assets are typically approaching the end of their expected lives with a major proportion of the assets being physically deficient. Maintenance costs increase beyond acceptable standards for Fair (C) and Poor (D) assets and reliability of the asset is reduced.

Fleet Renewal (1280)

To achieve the expected lifespan of the vehicles, major refurbishment is required to replace obsolete equipment, repair worn out systems and perform preventive maintenance. The U2 cars have had minimal refurbishment over their life, and the majority of their components have all reached or exceeded their design life. The major electrical and control systems are obsolete, and replacement is required to maintain the reliable and safe operation of the vehicles. Body corrosion is significant and must be repaired. Interior refurbishment is required to maintain a suitable environment for riders. Major mechanical subsystems are worn and require replacement to maintain safe vehicle operation. Upgrades to communication systems will provide for passenger destination and service announcements, and improve security on the vehicles with the addition of CCTV coverage. Power truck frames are corroded and require replacement to ensure the cars do not experience a significant frame failure that would result in a derailment.

The combined mid-life refurbishment work, including the communications systems upgrades, results in vehicles that can be operated for another 15-20 years at approximately 25 per cent of the cost of a new vehicle. The 1280 LRT Fleet renewal profile provides funding for these activities.

Funding

The estimated funding need for the U2 fleet retrofit program is \$46.445 M. Full funding of the program would allow all U2 cars in fair and poor condition to be retrofitted for increased service life. Based on funding constraints, \$44.526 M has been allocated, or approximately 96 per cent of the program need. This 4 per cent reduction in requested funding will result in 20 per cent of the obsolete electronic propulsion control systems and all of the worn door control switches not being replaced as planned. Online failures of these subsystems will occur and will reduce the reliable operation of the U2 vehicles.

Fleet Growth (1651)

As the LRT system continues to expand, additional vehicles are required to address projected capacity issues. To accommodate ridership growth, an additional 17 LRVs are proposed to allow some five-car trains to operate on the Clareview to Century Park line, and two additional three-car trains on the NAIT to Health Sciences line. The 1651 profile contains an estimate for this project, assuming funding in 2015-18 of \$88.446 M.

Due to the vehicle procurement cycle, profile funding is required two to three years in advance of delivery. For example, with an order placed in 2015, vehicles will be ready for service in 2017-18. Based on a projected 5 per cent annual increase in ridership, the system will exceed designed levels by 2017, resulting in overcrowding and possible loss of transit mode share.

LRT Maintenance Facility (1650)

The existing D.L. MacDonald Garage is sized to accommodate 84 LRVs. With the current fleet size of 74 cars, it is at 85 per cent capacity. There is no additional room to expand the existing facility beyond its current size.

With the 20-car order for delivery for the NAIT LRT expansion, the facility will be overcapacity by 12 per cent in 2014. In addition, to accommodate ridership growth, 17 cars are anticipated for delivery in 2017-18. This would result in an overall fleet size that exceeds facility capacity by 30 per cent by 2018.

An additional facility is required for LRV storage, light maintenance and servicing. Without additional capacity, LRVs will need to be stored inside the tunnels downtown or outside. The 1650 profile contains the program to design and construct a new LRV light maintenance and storage facility on the existing city-owned Cromdale site. The estimate of required funding is \$60 M, assuming design in 2013 and construction in 2013-14.









ENABLING TRANSIT INFRASTRUCTURE

Overview of Capital Expenditures

To enable the daily operation of the Bus and LRT transit fleet, a number of support systems are required. While often not as visible as the transit fleet itself, these systems are critical to the overall system function and are subject to renewal, rehabilitation and replacement. System renewal and replacement are scheduled based on a consideration of expected life cycle, functional needs, obsolescence, interoperability and ongoing ability to be maintained.

In this section, basic facilities and equipment required to enable overall system operation are discussed. In general, composite profiles manage the ongoing renewal program for LRT (1270) and bus (1410) facilities. Major one-time projects are managed as separate profiles. In addition, the transit safety and security (1240) composite program enables the safe function of the overall transit system

Previous and Future Funding (\$000)




<i>Program</i>	<i>2009-11</i>	<i>2012-14</i>	<i>Total Need</i>	
Transit Safety and Security (1240)	8,852	5,903 ¹	5,903	
Transit Control Room Relocation (1241)	n/a	0	5,500	
LRT Facilities and Equipment (1270)	25,761	11,182 ²	22,377 ²	
Auxiliary LRT and Shop Equipment (1272)	n/a	0	4,000	
LRT Communications and Signal Systems (1296)	31,000	1,352	8,323	
Central Station Roof Repair (1271)	n/a	44,000 ³	44,000 ³	
Bus Fleet Facilities and Equipment Renewal (1410)	15,293	2,373	9,799	
Transit Bus Radio Replacement (1291)	8,975	114	114	

Note 1: This includes funding from 09-66-1240 and 12-66-1240.

Note 2: This includes funding from 09-66-1270 and 12-66-1270; need from Capital Investment Agenda budget request.

Note 3: \$44 M reflects the revised need as presented to Council during budget deliberations.

Funding Legend

	Funded
	Partially Funded
	Not Funded

LRT Facilities and Equipment (1270)

The LRT Facilities and Equipment Renewal program contains the capital funding for general renewal and upgrades to the LRT system. This includes: major facilities, track and right-of-way, fleet, auxiliary equipment, communications systems, signals system, the line electrification system, shop equipment and fare collection equipment. Replacement of these assets is required to maintain the safety, reliability and serviceability of the LRT system.

A number of LRT assets are approaching or have exceeded their expected lifespan and are no longer able to meet required operating standards. In some cases, assets are approaching failure condition. The priorities in 2012-14 related to the recommended funded amount are:

- Replace Stadium Station platform;
- Replace ticket vending machine components approaching failure;
- Install an electronic passenger information system in the northeast stations;
- Purchase replacement wheels for the light rail vehicle (LRV) fleet;
- Replace LRV door cameras;
- Upgrade D.L. MacDonald LRT garage vehicle gantries;
- Replace overhead catenary wire and substation relays approaching critical condition;
- Replace LRT track sections approaching critical condition.

The 2012-14 renewal program is prioritized based on condition inspections. For 2015-21, a renewal program has been developed based on projected asset lifespans and deterioration rates. This program takes into account the results from the Corporate Risk Infrastructure Management System (RIMS).

LRT Signal System (1296)

The LRT Communications and Signal Systems program contains funding to replace swing gates at pedestrian crossings on the south portion of the line with active crossing gate protection. Pedestrian crossings are currently equipped with swing gates to remind pedestrians they are crossing an active rail line. However, since the opening of the line in 2010, it has been observed that pedestrians open the gate and proceed across without checking for trains. Pedestrians are often observed wearing earphones or other electronic devices that distract them while walking, creating a safety hazard.

Central Station Rehabilitation (1271)

Central LRT station rehabilitation is a one-time major project to repair the roof, which has significantly deteriorated over time. The roof structure now requires major rehabilitation in order to address damaged structural concrete and to install a new waterproofing membrane. In addition, the road surface above the Central Station roof is at the end of its life cycle and requires renewal. This project timing provides the opportunity to implement the first phase of the Jasper Avenue New Vision Plan (Project Profile 12-17-0370) from 97 Street to 111 Street, as proposed in the February 2011 report entitled “Toward a New Vision for Jasper Avenue”.

In 1977, the Central LRT Station was completed. It has suffered from water leakage issues since its opening. In 1987, the City carried out streetscaping of Jasper Avenue from 97 Street to 103 Street above the station. Driving lanes were not altered at the time, and no significant work was undertaken to the roof structure or to the original waterproofing membrane. In 1997, a rehabilitation project was carried out that primarily addressed the issue of water penetration into the LRT station. The recommended approach at the time was to avoid the expensive replacement of the concrete road surface, as it was still in acceptable condition at that time.

In 2007, an investigation of the Central LRT Station roof structure, and a visual condition assessment of the Jasper Avenue road structure and concrete curbs were conducted. The report concluded that the damage observed to station roof could be traced to water leakage caused by a failed waterproofing membrane, which should be replaced. In 2011, an updated condition assessment confirmed that, although the station structure has adequate structural capacity at present to carry the load of the roadway above, continued corrosion of the structural members requires rehabilitation.

The following table summarizes the conceptual cost estimates:

Budget Category	Estimate (M)
Roadway	\$6.3
LRT Station Waterproofing and Structural Repairs	22.1
Replace Existing Streetscape	7.9
Incorporate the Jasper Avenue New Vision	7.7
Total	\$44.0

Transit Safety and Security (1240/1)

This composite program contains the capital funding for initiatives related to the safety and security of the transit system, its customers and employees. The funding level in this program is generally for remedial actions required to maintain the operating efficiency of various communication equipment and systems. Funded priorities for 2012-14 include:

- Camera replacement as needed;
- Access system\component renewal;
- Software updates.

An unfunded project involves the relocation of the Transit Control Centre from Churchill to Corona Station. The project would enable further coordination with Communications-based Train Control (CBTC) equipment planned for the North LRT project in early 2013. The project includes relocation costs related to the various systems used in control.

Auxiliary LRT and Shop Equipment (1272)

Currently unfunded, this project provides for auxiliary rail equipment and growth service support vehicles to maintain and support operation of the North LRT line that is going into operation April 2014, and augment equipment to support the existing LRT line. Major program needs for 2012-14 include:

- Specialized track cleaning equipment for grade crossings and embedded rail sections of the line;
- Trucks and specialized snow clearing equipment to facilitate removal of snow from embedded rail sections of the line, surface platforms and grade crossings;
- A rail multi-purpose vehicle to facilitate maintenance in constrained access areas along the line.

Transit Radio Replacement (1291)

Transit Radio Replacement represents the capital funding for general renewal and an upgrade to the existing DATS radio system. The existing DATS radio system, including radios and associated components, has exceeded its expected lifespan. In some cases, radios and associated components are approaching failure. The existing radio coverage is unreliable and there are numerous dead zones. Replacing and upgrading the radio system is required to maintain the safety and operating efficiency of the DATS system.

Major planned projects for 2012-14 include:

- Replacement of radios in DATS vehicles (both City and contractor vehicles);
- Upgrading radio channels from two channels to four or five channels;
- Upgrading associated system components as required.

Bus Fleet Facilities and Equipment Renewal (1410)

Bus Fleet Facilities and Equipment Renewal is a composite capital program for the core renewal and rehabilitation of ETS bus terminals, bus shelters, dedicated bus control systems and operational support areas. Specific elements and initiatives include the placement of accessible shelters on low-floor bus routes, slab replacement for deteriorated bus ways at transit centres, and rehabilitation of structures at Transit facilities and garages.

Major planned projects in 2012-14 include:








- Repairs and replacement of deteriorated bus stop and shelter pads;
- Repairs as required to concrete slabs at transit centres;
- Refurbishing the Northgate Transit Centre facility.

TRANSIT EXPANSION




Overview of Capital Expenditures

To make public transportation the preferred choice for more people, the City must continue to make major improvements to the transit system. A comprehensive public transit system, with LRT available to all sectors of the city, is key to achieve the City's Vision and Strategic Goals. The LRT system is supported by a high-quality bus transit system that provides the gateway to the overall system for many transit users.

Previous and Future Funding (\$000)

<i>Program</i>	<i>2009-11</i>	<i>2012-14 Budget</i>	<i>2012-14 Need</i>	
North LRT (1672)	256,713	520,300 ¹	520,300	
Southeast and West LRT - engineering (1668)	15,000	36,000 ²	36,000 ²	
Southeast and West LRT – land (1673)	n/a	102,000	102,000	
Bus Facilities and Equipment Growth (1680)	30,032	0	0 ³	
Transit Priority Corridors (1665)	30,783	17,705 ⁴	17,705 ⁴	
Eaux Claires/Lewis Farms Park-and-Ride (1683)	12,973	completed		
Heritage Valley Park-and-Ride (1682)	611	0	7,855	
Windermere North Transit Centre (1690)	n/a	0	4,280 ⁵	
Ellerslie East Transit Centre (1691/2)	n/a	0	14,339 ⁶	

Funding Legend

	Funded
	Partially Funded
	Not Funded

Note 1: Project 08-66-1672 represents completion of North LRT to NAIT; Extension to Airport Lands (15-66-1676) is estimated at \$229 M in 2015.

Note 2: Project 11-66-1668 represents funding for preliminary engineering; funding required for phase 1 is \$1.0 B.

Note 3: No bus-related expansion profiles were put forward in the Capital Investment Agenda.

Note 4: Funding originally committed in 05-66-1665.

Note 5: Total funding beyond 2014 estimated to complete Windermere North Transit Centre is \$26.4 M.

Note 6: Total funding beyond 2014 estimated to complete Ellerslie East Transit Centre and park-and-ride is \$42.7 M.

North LRT (1672)

The North LRT project consists of detailed design, land acquisition and construction of the North LRT extension from Churchill Station to NAIT. Included in this project are: the purchase of 20 LRVs; construction of the cut and cover concrete tunnel under the Qualico development, and a tunnel to connect with Churchill Station; three LRT stations (MacEwan, Kingsway/Royal Alex, NAIT); one bus transit centre (Kingsway); all track; communications systems; a train control signal system; a traction power system; land and related roadwork; and utility relocations. In 2012, tunneling from Churchill to MacEwan will be completed and construction from MacEwan to NAIT will continue. The line is expected to be open for service in 2014.

Southeast to West LRT (1668/1673)

The preliminary engineering is the first phase of implementing this project. Profile 11-66-1668 covers this portion of the overall project. To ensure construction timelines are feasible, advanced land acquisition will be required. Funds for land acquisition for this project are contained in 12-66-1673.

The implementation of the Southeast LRT line from the Centre West Station to Millwoods is part of the Transportation Master Plan's vision to expand LRT service to all sectors of the City by 2040. City Council approved the concept plan for the Southeast LRT line on Jan 19, 2011. The concept plan has defined station locations; track alignment along the corridor and neighborhood; and business and pedestrian accesses. Urban style low-floor technology will be adopted for the new line.

In addition, this project includes elevated and underground structures, a transit center, a park-and-ride facility at Whitemud station, and an operation and maintenance facility. Centre West to Whitemud Drive is considered the first stage of the overall 27 km Southeast to West LRT corridor.

Bus Facility Expansion (1680)

As the City continues to experience some of the highest growth rates in North America, additional transit centres will support the expansion of bus transit service to new neighborhoods. Transit centres provide transfer and timing locations that allow a more efficient and effective service. This network of stations provides the foundation from which to deliver core levels of transit service to all areas of the City.

In the previous period, two new transit centres were completed, permitting improved efficiency of service delivery in west and north Edmonton. For the current period, there were three unfunded bus expansion profiles:

Heritage Valley Park-and-ride (1682)

The Heritage Valley Transit Centre and Park-and-ride would provide a regional park-and-ride facility south of Anthony Henday Drive and approximately 127 Street. This facility would replace the park-and-ride facility at Century Park and improve regional connectivity. In the long-term, this would be integrated with a South LRT extension beyond Century Park. Currently, park-and-ride service is provided at Century Park through a lease agreement with the owner of the land immediately adjacent to the transit centre.

Windermere North Transit Centre (1690)

The Windermere North Transit Centre is planned immediately southwest of a major commercial site within southwest Edmonton's Ambleside neighbourhood. The transit centre will provide a key node for transit integration and improve the neighbourhood's walkability and sustainable transportation alternatives.

Ellerslie East Transit Centre (1691/2)

The Heritage Valley Transit Centre and Park-and-ride would provide a regional park-and-ride facility south of Anthony Henday Drive at approximately Ellerslie Road and 50 Street. This facility would enhance staging of transit in growing southeast Edmonton and improve regional connectivity. Ultimately, this would be integrated with a future Southeast LRT line extension beyond Mill Woods.

Transit Priority Corridors (1665)

The Transit Priority Corridors project proposes capital and operational improvements to selected roadways to improve the on-road operations and reliability of ETS bus operations. Funding allocated to this project provides for the installation of new traffic control devices, modifications to traffic signal hardware and signal phases, and implementation of signal priority for buses in major corridors. These improvements are required to improve unreliable bus travel times and improve overall service reliability. This project was originally advanced in 2005.

NEIGHBOURHOOD RENEWAL

Overview of Capital Expenditures






The Neighbourhood Renewal Program (NRP) is a cost-effective and strategic approach to ensure the City's neighbourhoods are maintained in a sustainable way. Edmonton's neighbourhood infrastructure is a vital component to livability for citizens and enhances the pride they have in their community. From analysis done by the Office of Infrastructure and Funding Strategy, the need for ongoing funding for neighbourhood infrastructure is required to overcome an anticipated \$2.2 B funding gap in neighbourhood roads and related infrastructure (source: City of Edmonton, 2008-2017 Preliminary 10 Year Capital Investment Agenda).












The main program is the Neighbourhood Renewal Composite Program (1056), which contains various renewal techniques including microsurfacing, overlays and strategic collector renewal to increase the service life of neighbourhood infrastructure. Neighbourhood reconstruction is another part, where roads are repaved—sidewalk, curb and gutter—and street lights are replaced due to sidewalks being in poor condition and roads in fair to poor condition. The average cost estimated for the 2012-14 period is approximately \$15 M per neighbourhood. Reconstruction of individual neighbourhoods is contained in separate profiles (1054-1069).

These programs are coordinated with the Great Neighbourhoods Capital Program and the Drainage Renewal Program. Great Neighbourhoods addresses needs outside of the scope of the NRP, such as missing sidewalk links in parks and other architectural features, such as benches, through tax-supported debt. The Drainage Renewal Program includes the renewal and replacement of sanitary and storm sewers. Where feasible, all work is coordinated with franchised utilities, such as ATCO Gas and EPCOR, to minimize inconvenience to the public (see report 2011IS4612).

The Pavement Management Centre Relocation (1073) is a new facility to centralize and streamline pavement management resources so that the overall program can be carried out in an efficient and effective way.

Previous and Future Funding (\$000)

<i>Program</i>	<i>2009-11</i>	<i>2012-2014 Budget</i>	<i>2012-2014 Need</i>	
Neighbourhood Renewal Composite (1055)	264,339 ¹	155,944	155,944	
Pavement Management Centre Relocation (1073)	n/a	17,500	17,500	
Canora (1054) ²	n/a	16,943	16,943	
King Edward Park (1057) ²	n/a	29,995	29,995	
Windsor Park (1059) ²	n/a	14,308	14,308	

<i>Program</i>	<i>2009-11</i>	<i>2012-2014 Budget</i>	<i>2012-2014 Need</i>	
Woodcroft (1060) ²	n/a	14,864	14,864	
Dovercourt (1051) ²	n/a	20,175	20,175	
Terrace Heights (1058) ²	n/a	12,665	12,665	
Argyll (1061)	n/a	7,744	7,744	
Delton (1063)	n/a	19,273	19,273	
North Glenora (1066)	n/a	17,248	17,248	
Grovenor (1064)	n/a	5,639	5,639	
Hazeldean (1065)	n/a	9,121	9,121	
Cromdale (1067)	n/a	2,581	2,581 ³	
Glenora (1068)	n/a	11,719	11,719 ⁴	
Laurier Heights (1069)	n/a	5,000	5,000 ⁵	

Note 1: Previous period funding in 09-66-1055 involved a composite program of rehabilitation and reconstruction multiple neighbourhoods; separate profiles for each neighbourhood are presented for current period

Note 2: Profile contains funding for construction only

Note 3: Total project cost for Cromdale reconstruction is estimated at 7,915

Note 4: Total project cost for Glenora reconstruction is estimated at 36,291

Note 5: Total project cost for Laurier Heights reconstruction is estimated at 32,918

Funding Legend



Funded



Partially Funded



Not Funded

Program Management

Neighbourhood Asset Inventory

Edmonton's mature neighbourhoods require ongoing renewal to ensure basic mobility and quality of life for citizens. The NRP, encompassing local and collector roadways, includes the following components:

- Roads;
- Curbs and gutter;
- Sidewalks;
- Street lighting;
- Missing links in sidewalk, bike and trail systems;
- Pedestrian Safety.

The program involves approximately 300 neighbourhoods (including industrial) within the City. By effectively combining reconstruction, rehabilitation and preventative maintenance, the NRP allows all Edmonton neighbourhoods to receive improvements within 30 years. As of 2010 year-end, 111 neighbourhoods require reconstruction and 58 require overlay.

Renewal Scheduling

Transportation uses appropriate renewal approaches to maximize efficiency and life expectancy of residential roadway neighbourhood infrastructure. The following renewal methods implemented over the past ten years now provide proper treatment during life cycle to allow for a 60-year lifespan. These maintenance treatments include:

- Microsurfacing (preventive maintenance)—year 10;
- Roadway overlay—year 30;
- Microsurfacing (preventive maintenance)—year 40;
- Reconstruction—year 60.

Locations are initially selected based on the condition of the roads, sidewalks and street lighting. The construction schedule is then refined based on other relevant factors, including coordination with underground utility works, geographic locations and the opportunity to establish long-term contracts for reconstruction work. In order to facilitate the NRP in an efficient manner, drainage renewal must be completed prior to road and sidewalk work. Report 2011IS461 describes the relationship between surface and drainage work planning in detail.

Neighbourhood Assets Managed by City of Edmonton

Asset Type	Asset Inventory	Percent in Poor (or Very Poor) Condition	Average Service Life	Asset Value ¹
Collector Roads	615 km	13.6% (0.2%) ²	25 years ³	\$1.7 B
Local Roads	2,019 km	23.3% (6.0%) ²	25 years ³	\$3.3 B
Alleyways	1,151 km	32.0% (27.8%)	12 years	\$494 M
Sidewalks	4,915 km	8.5% (0.7%)	40 years	\$1.9 B

Note 1: Asset value based on estimated replacement costs, from Office of Infrastructure, as of Dec 31, 2010.

Note 2: Inspection and rating of local roads is conducted on a four year cycle; collector roads are rated every second year

Note 3: Service life assumes microsurfacing treatment in year 10.

Program Funding

The NRP is funded through a combination of Neighbourhood Tax Levy, Local Improvement Levy and provincial funding. The original funding model was an annual 2 per cent tax levy increase with provincial funding that would be phased out in 2018 and would provide for infrastructure renewal targets to be achieved in approximately 25 years. The 2012-14 Capital Budget has an annual 1.5 per cent tax levy with additional Municipal Sustainability Initiative (MSI) funding to supplement. The target is to reconstruct five to six neighbourhood per year.

Neighbourhood Renewal Composite (1056)

The Neighbourhood Renewal Composite Program is accomplished through a variety of renewal techniques that increase the overall life of the pavement structure. These include microsurfacing, overlays and strategic collector renewal. The ultimate goal is to minimize lifecycle costs and to avoid allowing normal asset deterioration causing the need for premature reconstruction of the complete roadway.

Microsurfacing

Microsurfacing is an operating program where roads are resealed with a thin asphalt coating. This process increases the overall life of the pavement structure in a cost-effective way. Candidate neighbourhoods for microsurfacing treatment have good road conditions and the treatment is applied 10-12 years after surfacing. Roadways with significant deterioration are not suitable for microsurfacing. The average cost for a neighbourhood treatment is approximately \$300,000.

Neighbourhood Overlay

Overlay is a capital program where roads are repaved and sidewalk panels treated to eliminate trip hazards. This additional layer of asphalt significantly increases the life of the complete pavement structure. Candidate neighbourhoods for overlay treatment have poor road condition and good sidewalk condition. The average cost for a neighbourhood overlay treatment is approximately \$2.5 M.

Collector Renewal

Similar to the arterial renewal program, renewal of collector roads is required to maintain overall function of the transportation system. Efficient management of collector renewal involves using techniques such as Full Depth Reclamation (FDR), mill and fill, cold-in-place recycling, overlay and full reconstruction. Priority is given to bus routes.

Road Replacement/Soil Reinforcement

Due to especially soft soil conditions, replacement of road structure with special drainage enhancement and selective concrete repair is required in certain areas. This has historically been a concern in areas of Northeast Edmonton.

PAVEMENT MANAGEMENT RELOCATION (1073)

Pavement Management Services are necessary for the proper planning and delivery of maintenance for Edmonton's roadways. These services are currently operated out of several temporary facilities located throughout the city. In 2009, the City developed a long range plan that recommended a centralized facility to provide equipment storage and staff space:

- Garage-to-house pavement milling machines, pavers, rollers, crack-sealing kettles, data collection equipment and weather-sensitive materials;
- Office space for supervisory and technical staff; and
- Lockers for up to 150 staff and a training/lunch room.

The Pavement Management Relocation Program (1073) is a capital profile to construct a facility that centralizes all pavement management staff in one location. The facility is to be co-located with the Northeast Maintenance Yard in the Kennedale area. Currently, the facility is in the detailed design stage, with construction to commence in 2012 and end by 2013.



ACTIVE MODES

Overview of Capital Expenditures

Active transportation includes any form of human-powered transportation, the most common modes being walking and cycling. This program is guided by the City's Active Transportation Policy, which aims to "optimize Edmontonians' opportunities to walk, roll and cycle, regardless of age, ability or socio-economic status; to enhance the safety, inclusivity and diversity of our communities, and to minimize the impact of transportation activities on Edmonton's ecosystem".

The City supports all forms of active transportation by strategically expanding and maintaining infrastructure to enhance accessibility, improve safety and support active modes as a convenient alternative to the single-occupancy vehicle. These initiatives are principally managed through the Active Modes Composite Program (1430).

Previous and Future Funding (\$000)

<i>Program</i>	<i>2009-11</i>	<i>2012-14 Budget</i>	<i>2012-14 Need</i>	
Active Modes (1430)	18,260	20,133	30,000 ¹	
142 St & Whitemud Drive Pedestrian Bridge (1431)	n/a	0	4,000	

Note 1: Need is based on council determined formula of 5 per cent of transportation spending, excluding LRT, estimating a three-year expenditure of \$600; actual expenditure is \$874 M, which would result in a target of \$43.7 M.

Funding Legend

	Funded
	Partially Funded
	Not Funded

Active Modes Composite Program (1430)

The Active Modes Composite Program manages sidewalk and bicycle improvements across the city. This infrastructure is planned through the Sidewalk Strategy and the Bicycle Transportation Plan.

Sidewalk Strategy

There are over 3,670 km of missing sidewalk located along roadways throughout Edmonton, limiting the accessibility of the city's existing sidewalk network. Each year, missing links are identified and prioritized in accordance with the 2009 Sidewalk Strategy to complete critical connections.

Bus stop connections are a key priority in sidewalk improvements. Inaccessible bus stops are defined as lacking a sidewalk connection, bus pad or curb ramps. Although these accessibility needs are addressed within Edmonton's newer developments, many older areas did not have these facilities installed when the neighborhood infrastructure was constructed.

Curb ramps are a critical link in an accessible sidewalk network. Each year, approximately 300 curb ramps are constructed throughout the city. This program operates on a citizen request basis to ensure that the funds are directed in a fair and equitable manner throughout Edmonton.

Bicycle Transportation Plan

The Bicycle Transportation Plan, first established in 1992, was updated in 2009. The updating process consisted of extensive public consultation, a number of workshops, open houses and focus groups about bicycle transportation in Edmonton, as well as a review of international best practices.

The Bicycle Transportation Plan provides direction on how to integrate bicycles into Edmonton's transportation system. This plan aims to create an urban environment that is conducive to cycling and encourages the continuing increase in bicycle trips. Significant health and sustainability benefits are possible as Edmontonians shift to active transportation modes. The plan involves the following priorities:

- Installation of on-street bicycle lanes
- Expansion of bicycle racks on all transit buses;
- Expanded bicycle parking program.

Improvement Locations

Based on available funding committed in the 2012-14 capital budget, specific program schedules are currently in development. The following are tentative locations that are being evaluated based on cost, priorities and coordination with Neighbourhood Renewal projects.

Sidewalks

The City of Edmonton does not provide sidewalks on both sides of every road in Edmonton. Locations planned through the Sidewalk Strategy for construction are:

- 28 Avenue (Parsons Road to 91 Street) (Partnership with the developer);
- 36A Avenue (30 Street to 31A Street) (Walkway connection);
- 51 Avenue (87 Street to 99 Street);
- 98 Avenue Service Road at 62 Street;
- 112 Avenue (131 Street to Groat Road);
- 118 Avenue (142 Street to 151 Street) (Land purchase in 2011);
- 99 Street (51 Avenue to 63 Avenue);
- 156 Street (111 Avenue to 118 Avenue);
- 170 Street (90 Avenue to 95 Avenue);
- Allard Way (51 Avenue to 54 Avenue);
- Calgary Trail (31 Avenue to 48 Avenue);
- Ellerslie Road (109 Street to 110 Street);
- Kingsway/Airport Road (Partnership with Kingsway BRZ);
- Parsons Road (25 Avenue to 34 Avenue);
- Terrace Road and 98 Avenue (Capilano Skate Park connection).

Bus Stop Accessibility

Bus stops without sidewalk and ramp connections require retrofit through the Active Modes program. Each year, approximately 50 bus stops are retrofitted. Locations that will enable DATS patrons access to regular transit are targeted as a program priority.

Curb Ramps

Based on requests from citizens for areas with missing curb ramps, approximately 100 curb ramps are placed each year. In order to coordinate missing ramp location during the neighborhood renewal overlay process, approximately 250 ramps would need to be placed each year. Neighbourhoods planned for overlay with missing ramps include: Baldwin, Beacon Heights, Bergman, Daly Grove, Goldbar, Lymburn, Patricia Heights, Quesnell Heights, Riverdale, Stone Industrial, Summerlea, Tipaskan, and Westridge.

Shared-use Paths

Shared-use pathways are off-road paths open to pedestrians and cyclists. These were previously known as Multi-Use Trails, and the expansion of the Multi-use Trail Corridor Network involves the following improvements:

- 28 Avenue (50 Street to 91 Street);
- 34 Avenue (91 Street to 99 Street);
- 151 Avenue (121 Street to 127 Street) (Partnership with developer);
- 50 Street (90 Avenue to 92 Avenue);
- Northeast LRT corridor (117 Avenue/78 Street to 129 Avenue/66 Street) (Land purchase in 2011);
- Argyll Park (Top of Bank).

In addition, construction and replacement of wooden stairways within the river valley is managed through the Active Modes program.

On-street Bike Routes

Bicycle lanes are marked lanes that separate the bicycle right-of-way from motor vehicle traffic and parking. Expansion of the on-street bicycle route network, as outlined in the Bicycle Transportation, involves the following locations:

- 83 Avenue (97 Street to 112 Street)
- 95 Avenue (142 Street to 189 Street)
- 100 Avenue (102 Street to 121 Street)
- 101 Avenue (50 Street to 84 Street)
- 102 Avenue (111 Street to 121 Street)
- 121 Avenue (Victoria Trail to 77 Street)
- 127 Avenue (72 Street to 127 Street)
- 50 Street (98 Avenue to 109A Avenue)
- 79 Street (76 Avenue to 106 Avenue)
- 106 Street (34 Avenue to 51 Avenue)
- 189 Street (87 Avenue to 95 Avenue)
- Saddleback Road (completion of loop)

Bike Racks

To provide supporting amenities for bicyclists, approximately 200 bike racks are installed on City owned right-of-way each year. Priority locations for installation are along key bicycle corridors and improvements are often scheduled in conjunction with streetscaping projects (e.g. Downtown, BRZs and Revitalization Areas). In order to improve the opportunity for bike riders to access transit, bike racks are installed on all new buses. In addition, approximately 100 buses are retrofit with racks each year.

142 Street and Whitemud Drive Pedestrian Bridge

The Multi-use Trail Network Plan outlines a network of city-wide shared-use pathway facilities for pedestrians, cyclists and other active mode users. A strategic priority within this plan is crossing of significant barriers to active transportation users, such as Whitemud Drive. Addressing these barriers will considerably influence the ability of users to engage in active transportation.






The link across Whitemud Drive at approximately 142 Street is a key component of the Multi-use Trail Corridor network, locally connecting the communities of Bulyea Heights and Brookside while expanding the city-wide active transportation network to enable citizens in the southwest to access the South Campus area, the University of Alberta and other key destinations. This unfunded project was estimated to take two years, including design and construction, at cost of \$4 M.

BRIDGES




Overview of Capital Expenditures

The City of Edmonton is responsible for maintaining the structural integrity of bridges and culverts. The 1040 program includes minor rehabilitation, preventative maintenance and condition assessments of the City's bridge inventory. The program also includes major maintenance of culverts throughout the city. This program is complemented by single major rehabilitation or reconstruction projects described in individual project profiles 1041-43. The Walterdale Bridge replacement is contained in profile 1466.

Previous and Future Funding (\$000)

<i>Program</i>	<i>2009-11</i>	<i>2012-2014 Budget</i>	<i>2012-2014 Need</i>	
Bridge Rehabilitation Composite (1040)	44,384	13,473	14,227	
Quesnell Bridge (1461/62) ¹	161,000	4,000	completed	
Dawson Bridge ²	18,000		completed	
102 Ave over Groat Road - Reconstruction (1041)	n/a	10,650	10,650	
82 Ave over Argyll Road Connector (1042)	n/a	9,000	9,000	
25 (30) Avenue SW over Blackmud Creek (1043)	n/a	5,410	5,410	
Walterdale Bridge (1466)	n/a	132,000	132,000	

Funding Legend

	Funded
	Partially Funded
	Not Funded

Note 1: Construction was completed in 2011 and approximately \$154 M has been spent to date.

Note 2: Dawson Bridge was completed in the 2009-11 period within the 1040 composite.

Bridge Investment Strategy

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 roadway bridge structures.

Bridge Inspections

Bridges deteriorate over time as a result of use and exposure to the environment. All bridges are inspected according to a set schedule:

- Yearly: Major river bridges and bridges on truck routes;
- Three years: Grade separations on truck routes;
- Five years: Pedestrian bridges and culverts.

Condition assessments of bridge elements provide a numerical rating between 1 and 9 (see Rating Chart). A rating of 1 implies that the structure is not safe for the public to use and requires immediate attention. A rating of 9 indicates a structure in new or as-new condition. A rating of 5 indicates the structure is performing as it was intended to. The City aims to ensure that as many structures as are practical are maintained to a standard of 5 or greater. Bridges have a number of components that are replaced over time to extend the overall life of the structure. Through diligent maintenance and rehabilitation, it is possible for a bridge to last hundreds of years.

Rating Chart

Rating	
1-2	Very Poor – Immediate Action Required
3-4	Poor
5-6	Fair – Functioning as Intended
7-8	Good
9	Very Good – As New Condition

Structures Managed By City of Edmonton

Structure Type	Count	Average Age	Rating >5	Asset Value
River Bridges	11	58.7	92%	\$421.4 M
Road Bridges	57	30.7	74%	\$263.0 M
Channel Bridges	23	44.8	83%	\$126.0 M
Pedestrian Bridges	41	31.1	100%	\$11.6 M
Rail Structures	23	26.0	87%	\$171 M
Culverts	32	35.3	84%	\$8.2 M

Structural Inventory

- Currently, 83 per cent of the City's bridge inventory is in "Fair" condition, 16 per cent is in "Poor" condition. No structures are in "Very Poor" condition.
- The City's target is to ensure that no more than 20 per cent of its inventory is in "Poor" condition and no more than 2 per cent of the inventory is in "Very Poor" condition.
- Only culverts will be allowed to degrade to "Very Poor" condition.
- Infrastructure in "Poor" condition requires action within the next one to three years.

Historical Funding

Over the past 10 years, the City has invested significantly in its bridge infrastructure. Major rehabilitation projects have included the Quesnell Bridge (\$161 M) and Dawson Bridge (\$18 M). In order to maintain stable condition of all bridges, annual funding between \$14 M and \$20 M is recommended. Currently, bridge rehabilitation is funded at approximately 95 per cent of its recommended need. This will provide consistent inspection and rehabilitation of structures in the City. Any reduction in funding will have an impact on the amount of operational maintenance and may result in higher rehabilitation costs over the long term.

Program Components

Bridge Rehabilitation Composite

In order to maintain the bridge inventory in a good state of repair, various types of preventive maintenance strategies take place, including bridge deck wearing surface grind, and overlay and culvert rehab/replacement. The 1040 bridge rehabilitation composite contains funding for this program. The goal of the program is to maximize the service life of City-owned bridges and minimize overall replacement cost.

Single Location Bridge Rehabilitation

102 Ave over Groat Road (1041)

The 102 Avenue Bridge serves as a major east to west corridor into and out of Edmonton's Downtown. The bridge has been serving Edmontonians for over 100 years and will soon require a replacement structure. The bridge has undergone significant rehabilitation in 1976, 1992 and 2002. At the time of the last rehabilitation, it extended the life by 10 years.

82 Avenue over Argyll Road Connector (1042)

The 82 Avenue Bridge serves as a major corridor carrying two eastbound lanes onto the Sherwood Park Freeway. The bridge has been serving Edmontonians for over 40 years and will soon require a major rehabilitation to include the replacement of structural elements that support the bridge deck. An independent assessment of the structure found extensive cracking and delamination of the concrete pier caps, and substandard girder and foundation capacity. A determined major rehabilitation is required to safely support Alberta legal truck loads.

25 (30) Avenue SW over Blackmud Creek (1043)

This project will enable mobility in the Southwest Edmonton neighbourhoods of Allard and Callahan while supporting further development east of Blackmud Creek. This is a new bridge that is funded with Arterial Roadway Assessment. The City will be reimbursed for this structure over time.

Stony Plain Road over Groat Road (Profile TBD)

Stony Plain Road connects West Edmonton and Downtown. It is planned to accommodate the West LRT, which will further enhance mobility in the area. The bridge was originally constructed in 1954 and will require rehabilitation to ensure it is maintained in a functional condition. An initial assessment has recommended that essential rehabilitation be performed to extend the life of the structure and meet the timelines for the design and construction of the West LRT. Replacement of the bridge with a facility that will accommodate both LRT and roadway traffic is likely to be the most efficient scenario in the long term. There are no budget implications anticipated due to this decision.

Walterdale Bridge (1466)

The Walterdale Bridge is an important link in the city's transportation system, carrying two lanes northbound into Downtown and working with the High Level Bridge as a north-south transportation system. Currently the bridge operates at capacity during peak times, resulting in significant congestion on the south approaches.

This bridge is approaching 100 years of age and the end of its useful life. Based upon a report completed in 2000, the structural components of the bridge are fatigued and do not have the capacity to carry legal truck loads based on provincial standards. The rehabilitation program undertaken in 2004 allowed the bridge to function maintenance-free for an additional 10 years. Replacement of the bridge is necessary.

During the capital budget process, City Council directed Administration to investigate the possibility of financing the Walterdale bridge project through tax-supported debt. Report 2011CF573 summarizes the potential impact of additional funding available through this option, and identifies recommended projects for use of available funds.

Project Background

The existing Walterdale Bridge will need to be closed by 2014, with a new bridge in place and operational by that time. Replacement was recommended and approved by Council in 2008. The direction given was to replace the existing bridge with a functional signature bridge. In 2010, a concept planning study was initiated to review the road and bridge alignments, as well as the feasibility of an arch-style one-span bridge.

The bridge replacement will include an additional northbound lane and improved facilities to accommodate active modes. The bridge will be a signature arch bridge and the concept has been approved by Council. Extensive public consultation has been undertaken, along with the development of a concept and preliminary design.

ROADS

Overview of Capital Expenditures








The City is responsible for maintaining an arterial roadway system that forms a comprehensive network for mobility of people and goods. In the 1020 composite program, capital funds are provided for reconstruction and rehabilitation of arterial roadways that are maintained by the City. Collector and local roadway renewal is funded through the Neighbourhood Renewal Program.













As the city continues to expand, additional roadway infrastructure will be required. The City manages minor improvements to the existing arterial network through the 1440 composite program, as well as major roadway widening within individual profiles (1441/42). Budget deliberations resulted in a number of project roadway profiles that will be implemented as council directed priorities (1443-1452).

One of the City's strategic objectives is to focus major roadway improvements on the efficient movement of goods and services. In the past period, the 1480 composite program contained projects to support the development of the inner ring road and highway connectors. To comply with the new guidelines for composite programs, these projects are now separated into individual projects (1484-1487). Similarly, individual profiles have been established for the various future connections to the Northeast segment of Anthony Henday Drive (1614/15).

In the previous period, approximately \$488 M was spent on renewal and expansion of the roadway system. Due to funding constraints in the 2012-14 period, this has been reduced by almost 95 per cent. Significant project deferral and an increasing infrastructure gap are the inevitable results of this highly cyclical spending pattern.

Previous and Future Funding

<i>Program</i>	<i>2009-11</i>	<i>2012-2014 Budget</i>	<i>2012-2014 Need</i>	
Arterial and Primary Highway Renewal (1020)	118,615	46,643	124,468 ¹	
Arterial Network Improvements Composite (1440)	87,586 ³	6,138	6,138 ²	
34 Avenue: 34 Street to 48 Street widening (1443)	n/a	3,586	3,586	
Parsons Road Widening: Ellerslie Rd to 19 Avenue (1444)	n/a	5,655	5,655	
Guardian Road/Lewis Estates Boulevard Widening: Grantham Drive to Suder Greens Drive (1445)	n/a	7,724	7,724	
153 Avenue Widening: Manning Drive to 50 Street (1446)	n/a	2,862	2,862	
23 Avenue Widening: 34 Street to Millwoods Road East (1447)	n/a	2,862	2,862	

Program	2009-11	2012-2014 Budget	2012-2014 Need	
34 Street Widening: 23 Avenue to 34 Avenue (1448)	n/a	4,000	4,000	
38 Avenue Widening: 21 Street to 34 Street (1449)	n/a	3,572	3,572	
184 Street Widening: 107 Avenue to 116 Avenue (1452)	n/a	6,700	6,700	
107 Ave six-laning: Groat Road to 170 Street (1441)	n/a	0	67,500	
118 Avenue & 101 Street Traffic Circle Modifications(1442)	n/a	0	3,200	
Inner Ring Road & Highway Connectors (1480)	54,902	953	n/a	
23 Avenue/Gateway Interchange (1482)	143,371	10,300	completed	
23 Ave Connection to Anthony Henday Drive (1481)	n/a	0	20,000	
Yellowhead Stage 1 Improvements (1483)	n/a	9,950 ³	15,000	
75 Street Widening – Whitemud to Argyll Road	n/a	0	85,000	
Queen Elizabeth Highway (QEII) & 41 Avenue SW Interchange (1484)	7,590	72,000	72,000	
Whitemud Drive Widening: 66 Street to 34 Street (1485)	n/a	0	21,000	
50 Street Widening: 41 Ave to Anthony Henday (1486)	n/a	0	17,500	
Anthony Henday Drive Ring Road Connectors (1612)	76,839	21,000	21,000	
Victoria Trail: 153 Ave to AHD (1614)	n/a	0	0 ⁴	
130 Ave: Anthony Henday Drive to Aurum Industrial (1615)	n/a	0	0 ⁵	

Note 1: Program need of \$124.4 M is based on Capital Investment Agenda request. Funding level to maintain stable asset condition and match industry benchmarks is \$180 M.

Note 2: In previous period, 1440 was program was a composite, individual profiles reported in current period; total City obligations for roadway widening is estimated at 15,000 per year for the next 10 years (see report 2011TS666).

Note 3: Funding of land acquisition only.

Note 4: Project need, beyond 2014, for Victoria Trail connection is 4,025

Note 5 Project need, beyond 2014, for 130 Avenue connection is 11,500

Funding Legend



Funded



Partially Funded



Not Funded

Arterial Renewal

Roadway Inventory

The City of Edmonton Transportation Systems Bylaw (#15470) maintains an inventory of arterial roadways within City and Provincial jurisdiction. The City maintains roadway infrastructure with an estimated value of \$3.5 B. Based on pavement management inventory classification, these are composed of major arterials (previously called “primary highways”) and other arterial roads. The City maintains condition assessments of these facilities and reports the overall asset condition on a regular basis. The table below lists the roadway inventory managed by the City.

Roadways Managed By City of Edmonton				
Roadway Type	Centreline km	Percent in Poor (or Very Poor) Condition	Average Service Life	Asset Value²
Major Arterials ¹	55	2.2% (2.7%)	20 years	\$368 M
Other Arterial Roads	778	13.8% (0.4%)	12 years	\$3.1 B

Note 1: Classification above is based on pavement management inventory.

Note 2: Asset value is based on estimated replacement costs, from Office of Infrastructure, as of Dec 31, 2010.

There are approximately 833 centreline km's of arterial roadways in the City of Edmonton. In general, the older the road, the more frequently it must be maintained. New roads have a longer service life of approximately 15 years, while older roads may be repaved as often as once every eight years. The overall average service life is 12 years.

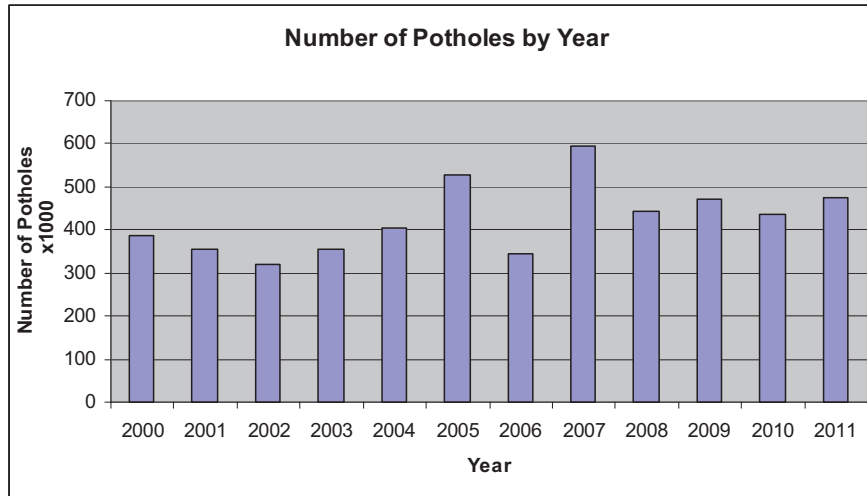
Major arterial roadways are classified separately for pavement management purposes, and have a higher design standard and generally free-flow traffic conditions. In previous reporting, these have been called “primary highways”, not to be confused with the Province of Alberta's highway classification system. The average service life of these facilities is 20 years.

Heavy vehicles are defined as commercial vehicles weighing greater than 8,000 kg and/or in excess of 12.5 m in length. The City is responsible for designing the truck route network in Edmonton, including a network for the movement of dangerous goods. Of the total arterial roadway inventory, approximately 500 km are designated truck routes (64 per cent).

Asset Management Approach

Maintaining Edmonton's roadways requires an integrated approach involving planning, engineering and finance to effectively manage existing municipal infrastructure, reduce risk and provide satisfactory levels of service to local users and citizens. Asset management often results in higher design, construction and repair standards; however the benefit is that equipment and facilities last longer and have a reduced life-cycle cost. In order to prevent minor deteriorations from becoming more severe, a sufficient amount of funding for minor rehabilitation and repair is prudent.

This approach optimizes investment through a mix of preventive maintenance, rehabilitation and reconstruction. Roadway renewal funding and requirements for roadway maintenance are directly related. Deferring capital investments in roadway renewal will ultimately increase the need for maintenance work in the future, including pothole and base repairs, as well as patch paving. Figure 6 shows the historical trend of potholes within the city.

Figure 6: HISTORICAL POTHOLE COUNT

Note: 2011 value is reported to September 31. Projected total number of potholes for 2011 is 540,000.

In order to maintain a roadway in an optimum state of repair, various types of rehabilitation and reconstruction work are required.

Roadway Reconstruction

Reconstruction involves the complete removal and replacement of individual, non-maintainable infrastructure elements such as pavements, curbs, sidewalks and streetlights. This is typically the most expensive alternative available. The Full Depth Reclamation (FDR) process is a less expensive alternative to removing and replacing the pavement component.

Full Depth Reclamation (FDR)

FDR involves re-mixing the full depth of an in-situ pavement while adding cement or foamed asphalt, and then re-compacting this material. A new asphalt surface is then installed on top to complete the process.

Roadway Rehabilitation

When the roadway is showing signs of extreme surface distress—such as rutting, cracking or raveling—but the underlying structure is still intact, there are techniques available that can prolong the life of the overall structure and reduces life cycle costs:

- **Mill and Fill**
Pavement is milled out and replaced with new asphalt material.
- **Cold-in-Place Recycling**
Surface pavement is milled out and recycled on-site, which reduces the total amount of new material required and saves on the disposal.
- **Overlay**
An additional layer of pavement is placed over the existing road surface to re-establish a proper road profile and adequate drainage conditions.

In practice, the cost of rehabilitating a four-lane arterial road can vary between \$480,000 and \$1.2 M per kilometre, depending on the scope of work required. The lower range of cost would involve a simple resurfacing with no concrete work, whereas the higher range could include isolated base repairs, and the replacement of poor sections of curb, walk or streetlights. As Edmonton's arterial inventory features a significant backlog of needed work, the average cost of rehabilitation is estimated to be \$880,000 per kilometre for a standard lane configuration.

Arterial Renewal Funding

Based on average service life, approximately 70 km of roadway would need to be serviced yearly at a cost of \$60 M. The \$60 M annual funding level would maintain the current average condition rating. This level of funding also reflects the industry benchmark of 2 per cent of asset value as a recommendation for infrastructure sustainability. Average funding for the 1020 Arterial Renewal program is currently funded at \$15 M annually.

Municipal Pavement Management Application

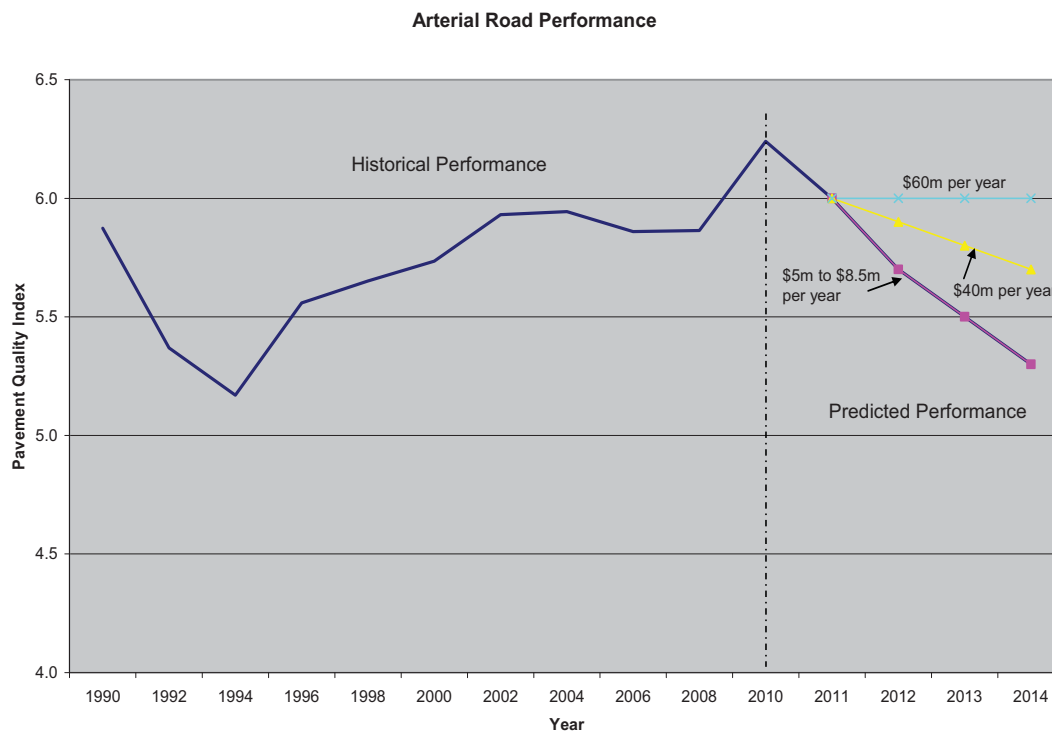
Based on the measured performance of existing roadway conditions and the calculation of future needs, the Municipal Pavement Management Application has produced an optimized prediction of the overall Pavement Quality Index. This scale ranges from 0 to 10, with 10 indicating an excellent condition. Arterial road condition information is collected every two years, with the last collection year being 2010.

Growth or reconstruction projects also have an effect on overall roadway condition based on the amount of roadway that is renewed. For example, the following projects in 2011 had an impact on overall pavement condition based on an equivalent amount of arterial renewal:

- 99 Street/Scona Road—equivalent to 2.6 km centerline;
- Quesnell Bridge—equivalent to 6.2 km centreline;
- Gateway/23 Ave—equivalent to 9.2 km centerline.

Figure 7 shows the predicted overall condition under various funding level scenarios from 2012 to 2014. A funding level for roadway renewal of \$60 M per year, or \$180 M over the current three-year period, would ensure a stable overall condition rating.

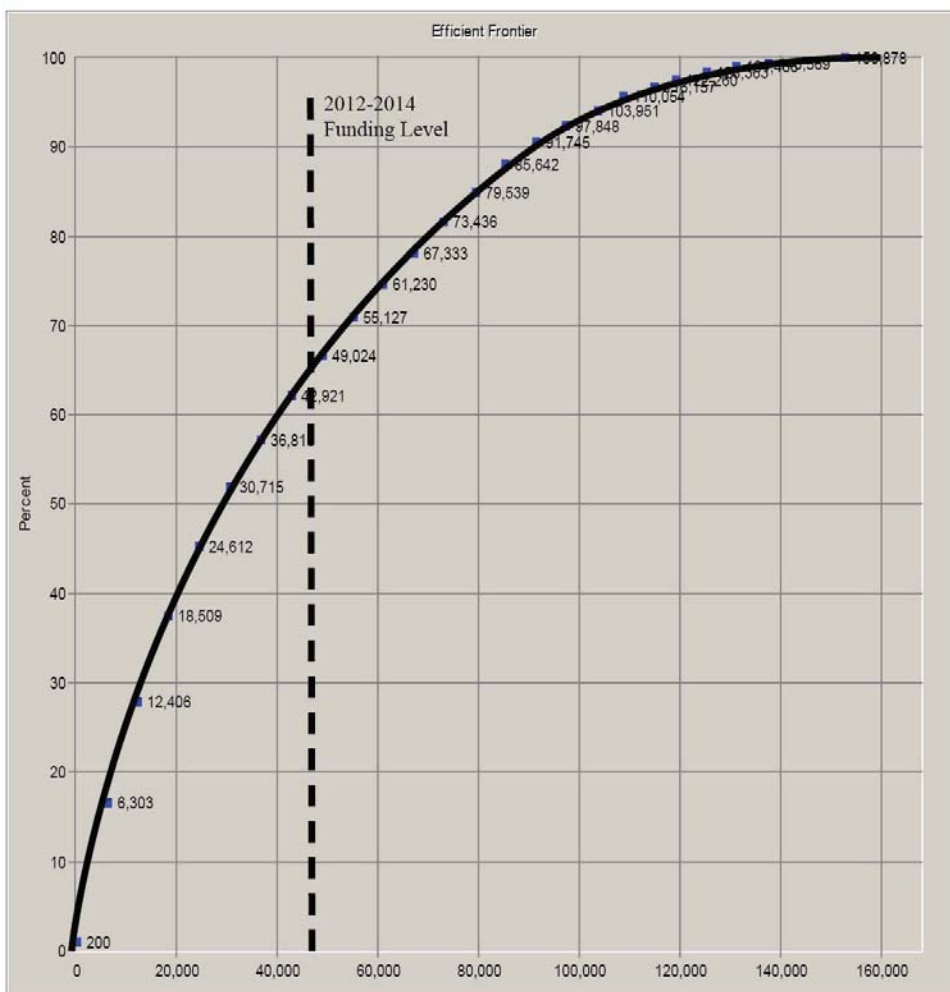
Figure 7: PAVEMENT CONDITION CURVE PER YEAR



Transportation Services Project Prioritization

The Transportation Services Project Prioritization model has been used to analyze the portfolio of nearly 200 projects that make up the Arterial Renewal Program. The results found that there are significant benefits to investing in arterial and primary renewal, with diminishing returns for higher levels of overall funding. Based on this analysis, approximately 65 per cent of the overall portfolio benefit is achieved with the current funding level. Figure 8 illustrates this analysis through a pareto optimization curve. The curve shows the overall expected benefit of the portfolio relative to the possible funding levels, shown along the x-axis.

Figure 8: ARTERIAL RENEWAL PORTFOLIO PARETO OPTIMIZATION CURVE FOR 2012 TO 2014



NOTE: Figure is based on 3 years of funding

Roadway Expansion

Arterial Network Improvements Composite (1440)

The composite program for network improvements (1440) involves minor localized expansion of the existing arterial roadway network. This includes geometric improvements to address safety and operational concerns, as well as roadway widening.

Based on a review of the roadway network, there are approximately 34 km of unfunded projects that are the City's responsibility. The majority of these arterials are adjacent to complete or nearly complete neighbourhoods (see report 2011TS666). In addition to composite network improvements, separated project profiles for arterial improvements, inner ring road expansion and Anthony Henday Drive connectors are listed in separated profiles.

Arterial Roadway Assessments (ARA)

Local, collector and arterial roadways in developing areas are constructed by the land developer. Under the Arterial Roads for Development Bylaw 14380, land owners are required to build the four lanes of arterial roadways required to service their land. As such, basic road infrastructure is generally constructed by the owners as land develops and is turned over to the City for maintenance.

The City is responsible for widening certain roadways not included in Bylaw 14380. These include locations where the first two lanes were constructed prior to 2006, six-lane widening and various other widening locations, primarily in the more mature parts of the city.

Council Directed Roadway Widening Projects

Through Council's budget deliberations, a number of roadway widening needs were identified. These will provide additional roadway capacity to enhance mobility in Edmonton's expanding neighborhoods. Council selected these priorities based on review of future roadway volume projections, nearby land uses, historical development patterns and knowledge of constituent expectations. To conform with finance guidelines for project profiles, they are separated into a number of major project profiles. For reference, the current average roadway volumes along these 4 lane arterials are listed below.

<i>Profile</i>	<i>Project Location</i>	<i>Daily Volume</i>
1443	34 Avenue: 34 Street to 48 Street	15,000
1444	Parsons Road: Ellerslie Rd to 19 Avenue	20,000
1445	Guardian Road/Lewis Estates Boulevard: Grantham Drive to Suder Greens Drive	15,000
1446	153 Avenue: Manning Drive to 50 Street	13,000
1447	23 Avenue: 34 Street to Millwoods Road East	16,000
1448	34 Street: 23 Avenue to 34 Avenue	12,000
1449	38 Avenue: 21 Street to 34 Street	13,000
1452	184 Street: 107 Avenue to 116 Avenue	14,000

The cost estimates listed for these projects are based on a parametric approach and will be updated as the design process continues. Combined, the projects listed below amount to \$37.0 M, of which a significant portion will be funded through available ARA funds.

107 Avenue – Groat Road to 170 Street (1441)

With the approval of the West LRT and upcoming rehabilitation of the 102 Avenue Bridge over Groat Road, a need to improve the roadway capacity of 107 Avenue has been identified. The traffic circle, located at 107 Avenue and 142 Street continues to be a high collision location. An operational review has recommended that this location be converted to a signalized intersection.

118 Avenue and 101 Street (1442)

Based on an operational review, the reconstruction of the existing traffic circle at 118 Avenue and 101 Street to a modern roundabout is recommended. These improvements will improve geometry and allow this location to safely accommodate all modes—vehicles, buses, trucks, cyclists and pedestrians. This project will take place in conjunction with the Alberta Avenue streetscape and 118 Avenue rehabilitation.

23 Ave Connection to Anthony Henday Drive (1481)

As the city expands in the southwest, improvements to the roadway network are required. West of 215 Street (the west City Limit), 23 Avenue becomes Highway 627 and becomes subject to a higher design standard and level of access control. The project consists of a new roadway that will connect 199 Street to Anthony Henday Drive at the Cameron Heights interchange.

Queen Elizabeth Highway (QEII) & 41 Avenue SW (1484)

The Canadian Pacific Railway (CPR) is planning to build a new intermodal terminal in south Edmonton on 41 Avenue SW, east of QEII. To accommodate traffic generated from the new CPR intermodal facility, construction of an intermodal terminal access at QEII and 41 Avenue SW in Edmonton is required. The proposed access to QEII involves construction of a new interchange on QEII and 41 Avenue SW, and upgrading of 41 Avenue SW to handle the traffic generated from the new terminal. The interchange is being jointly funded with the provincial and federal governments. Design and construction will be led by Alberta Transportation.

50 Street Widening from Ellerslie Road to 41 Ave SW (1486)

The Town of Beaumont, with Provincial funding, is upgrading 50 Street to four lanes south of 41 Avenue SW. Construction is underway and scheduled for completion by 2013. The widening of 50 Street, north of 41 Avenue SW, would be consistent with the desire to support regional cooperation and initiatives.

Inner Ring Road Improvements

The Inner Ring Road enables efficient movement of goods and services within the City. Enhancements to existing facilities will focus on raising their service levels to a more free-flowing level. The City will strive to reduce and control direct access to these facilities wherever practical. This roadway system includes Yellowhead Trail, 75 Street/Wayne Gretzky Drive, Whitemud Drive and 170 Street.

Yellowhead Stage 1 Improvements (1483)

Yellowhead Trail is the most highly used goods movement corridor in the City. An overall strategy to enhance movement of traffic along Yellowhead Trail has been developed. The first stage of the ultimate vision of a freeway standard for Yellowhead Trail involves access changes at various locations, as well as strategic land purchases. The benefits of this project will be improved safety along the corridor and the reduction of delays for travel to enhance the movement of goods and services. The improvements are a precursor to additional grade separations and interchanges.

Funding is proposed for acquisition of land near 107 Street where Yellowhead Trail currently occupies land owned by CN. Estimated land cost is \$9.95 M.

Whitemud Drive Widening—66 Street to 34 Street (1485)

Upgrades to Whitemud Drive would bring it to a continuous six-lane standard. This would require adding one lane in each direction on the inside of the freeway, in the median area. Included in the scope are auxiliary lanes both eastbound and westbound between 66 Street and 50 Street between the entrance and exit ramps. This widening would improve the merge/weave area near the 66 Street interchange where operational issues are beginning to develop in the p.m.

Anthony Henday Drive Connectors

Anthony Henday Drive is a high standard, grade-separated, free flow facility that forms the outer ring road near the city periphery. 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 Province. The City is responsible for the construction of connecting infrastructure. In previous CPP periods, these were managed through a composite program (1612). These projects are eligible for funding through ARA.

Victoria Trail—153 Avenue to Anthony Henday Drive (1614)

Planning for Victoria Trail was spurred by the impending construction of the northeast section of Anthony Henday Drive and the construction of an interchange at Manning Drive. This project involves the construction of a new four-lane, divided arterial roadway in an undeveloped area. This project is needed beyond 2014.

Aurum Road—Anthony Henday Drive to Aurum Industrial (1615)

Planning for Aurum Road to be a six-lane divided arterial roadway was completed in conjunction with the Anthony Henday Drive northeast ring road design/alignment. Aurum Road will be the primary access to future industrial development between Anthony Henday Drive and the eastern City Limit. It will eventually form a key connection to Highway 21. This project is needed beyond 2014.






Source: Government of Alberta

SNOW STORAGE FACILITIES

Overview of Capital Expenditures

Snow removal and storage is an inevitable cost to the City. Snow that has been removed from roads goes to one of Edmonton's snow storage facilities. The renewal composite program (1860) addresses rehabilitation and upgrades to meet environmental regulations at existing snow storage facilities. Major expansion projects, such as the Kennedale expansion (1862), are managed as separate profiles. The Southeast yard (1861) is a major rehabilitation project required for adequate storage of snow handling equipment.

Previous and Future Funding (\$000)

<i>Program</i>	<i>2009-11</i>	<i>2012-2014 Budget</i>	<i>2012-2014 Need</i>	
Snow Storage Facilities Rehabilitation Composite (1860)	n/a	680	680	
Horse Hills Snow Storage Facility (1960)	29,600	completed		
Kennedale Snow Storage Facility (1862)	n/a	16,000 ¹	16,000 ¹	
Snow Storage Facilities Development (1960 ²)	n/a	5,000	5,000	

Note 1: Report 2011TS0038 recommended a budget adjustment of \$16M from 09-66-1960 to 12-66-1862 to reflect the updated profile name.

Funding Legend



Funded



Partially Funded



Not Funded

Program Management

Typical Facility

Snow that has been removed from roads goes to one of Edmonton's snow storage facilities. To ensure protection of groundwater, the snow storage area of a typical facility involves a 600 mm-thick compacted clay liner. Monitoring wells surrounding the facility are generally required to permit regular soil and groundwater monitoring. Melt water and runoff require collection and treatment to comply with provincial and federal environmental regulations. These facilities will have an ultimate design snow storage capacity of up to 2 million m³ with an estimated snow pile height of 10-30 m. These facilities are anticipated to have a 50-year design life. The current system is capable of storing 3.9 million cubic metres of snow and the overall program goal is to provide 6 million cubic metres of snow storage capacity.

Environmental Monitoring and Groundwater Protection

Meltwater ponds have liners to protect groundwater and soil from contaminants like salt, sand, antifreeze and engine oil. The City conducts environmental monitoring at all facilities. Pond water discharge from facilities is monitored regularly and meets regulatory criteria. Groundwater is monitored twice a year and reported to Alberta Environment.

All meltwater and runoff are collected within the onsite water storage and settling pond before discharge. The facility's design provides space for additional future treatment, if required. Flood Protection is designed to contain the combined runoff from a one-in-100-year rainstorm plus snow melt.

Facility Planning

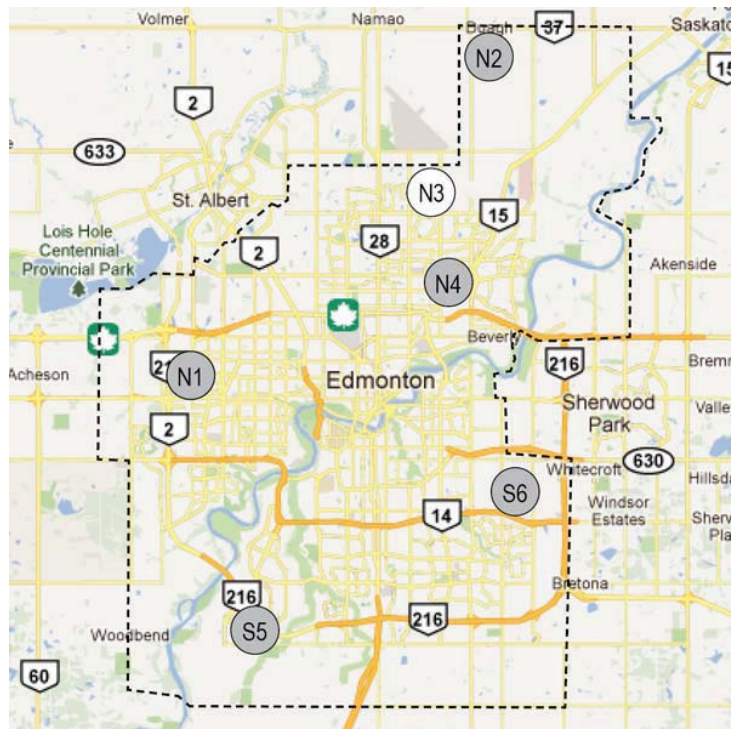
Well maintained and strategically located snow storage facilities are crucial to keeping Edmonton traffic moving in the winter. Facility expansion is part of the City's long-term plan to develop permanent, engineered snow storage facilities in each City quadrant. The expansion of these facilities is contingent on securing suitable sites with sufficiently large land area for storage and meltwater management, as well as reasonable access for heavy vehicles.

There are currently six facilities across the city. The 66 Street and 188 Avenue facility was recently closed, as the Horsehills Facility opened to replace it in the Northeast. With the exception of Kennedale, all facilities are open to the public. All facilities are now permanent sites, with possible expansion opportunities to respond to roadway inventory growth. Figure 5 shows a map of the current network of snow storage sites.

Location	Capacity
N1 Poundmaker - 185 Street - 107 Avenue	600,000 m ³
N2 Horsehills - 50 Street and Highway 37	600,000 m ³
N3 66 Street - 188 Avenue	Now Closed
N4 Kennedale – 52 street and Fort Road	300,000 m ³ ⁽¹⁾
S5 Ellerslie - 156 Street and Ellerslie Road	1,200,000 m ³
S6 Fulton Creek - 17 Street north of Whitemud	1,200,000 m ³

Note 1: Kennedale facility is currently undergoing expansion to capacity of 600,000 m³.

Figure 5: SNOW STORATE SITES



Program Components

Snow Storage Facilities Renewal Composite (1860/1960)

The composite program for snow removal contains funding for capital initiatives to support the maintenance of existing facilities. This includes feasibility studies, land acquisition, engineering design, and site construction.

Horse Hills Snow Storage Facility—50 Street and Highway 37 (1960)

To accommodate the growth for snow storage facilities within the City of Edmonton and to comply with regulations for management of snow storage run-off, the Horse Hills Snow Storage Facility was constructed to serve the growing Northeast sector of the city. The site replaced the existing 66 Street facility and is compatible with the intended land uses, according to the Horse Hills Area Structure Plan. Project construction was recently completed.

Kennedale Facility Expansion (1862)












Kennedale Snow Storage facility is a City-use only site located to serve the Downtown core. Its current capacity of 700,000 m³ is undersized to meet current and potential future service levels. There is potential to expand the facility to property located north of the current site to develop a total facility capacity of over 1,000,000 m³. The land cost is estimated at \$1.5 M; the construction and design are estimated at \$14.5 M. A recent budget adjustment recommended a separate profile for the project and a transfer of an available \$16 M of funding from 09-66-1960 to 12-66-1862 (see report 2011TS0038).

ENABLING ROADWAY INFRASTRUCTURE

Overview of Capital Expenditures

To enable the efficient operation of Edmonton's roadways, daily essential support services are delivered by the City. These operational programs require capital support through a number of composite programs, including operating yards, traffic control rehabilitation and geo-environmental. The programs contribute to improved quality of life for Edmonton residents, and provide increased safety and mobility for citizens.

Previous and Future Funding (\$000)




<i>Program</i>	<i>2009-11</i>	<i>2012-14</i>	<i>Total Need</i>	
Operating Yards and Facilities(1070)	11,873	2,520 ¹	5,903	
Central District Rehabilitation (1071)	n/a	1,500	1,500 ¹	
Kennedale Traffic Shop (1072)	n/a	0	27,500	
Traffic Control Rehabilitation (1210)	5,215	1,500	18,443	
Traffic Signals – Pedestrian Safety (1220)	13,439 ²	9,562	9,562	
Traffic Safety(1221)	n/a ²	0	15,252	
Intelligent Transportation System (1222)	n/a ²	0	5,675	
Parking Control Technology (1230)	n/a	0	12,000	
Integrated Speed Equipment (1225)	10,466	9,354 ³	9,354 ³	
Street Lighting Rehabilitation (1260)	14,397	13,010	14,010	
Geo-environmental (1950)	25,142	1,000	1,000	

Note 1: Total funding need for Central District rehabilitation beyond 2014 is 13,550.

Note 2: In previous period, activities under Traffic Signals - Pedestrian/Bus Safety (1220), Traffic Safety (1221) and Intelligent Transportation Systems (1222) were handled under Traffic Safety Engineering Measures (1220).

Note 3: Funding for this capital program is restricted to revenue from Integrated Speed Equipment.

Funding Legend

	Funded
	Partially Funded
	Not Funded

Operating Yards and Facilities (1070)

Maintenance of the roadway system requires supporting infrastructure, such as yards to store equipment and stage efficient service delivery for year-round maintenance work. Transportation Operations stages roadway maintenance services from a network of five yards across the city. This includes sand and salt stockpiles to manage snow and ice control, environmental compliance, yard maintenance, maintenance of snow storage facilities and necessary capital improvements to support yard operations. These facilities require capital support to ensure they are safe and functional.

The table below shows an overview of the facilities managed through the 1070 program.

Location	Staff Support Space (sq.m)	Indoor Equipment Storage (sq.m)	Salt Storage (tonnes)
Central	3,505 (4,998) ¹	700 (2,500) ¹	1,500 (3,000) ¹
Southwest	657	4,200	5,000
Southeast	930 ²	930 ²	3,500
Northwest	612	2,540 (3,340) ¹	5,000
Northeast	614	2,418	2,000 (5,000) ¹

Note 1: Estimated need based on service delivery standards for current roadway inventory.

Note 2: Staff and equipment storage is combined in the Southeast facility.

Central District Rehabilitation (1071)

The existing Central yard facility is an aging structure that has become functionally obsolete. Originally a horse barn, the structure has an inefficient office layout resulting in substandard working conditions. In 2010, snow loading reviews identified twisted roof joists that are being reviewed by a structural engineer. In addition, as Edmonton continues to expand its roadway inventory, existing facilities can no longer provide the room necessary to stage road maintenance operations. The table above lists the additional requirements identified for the Central yard facility. Based on a strategic review done in 2008, a design budget of \$1.5 M was established with a conceptual cost estimate of \$48.0 M, not including the Traffic Control area.

Kennedale Traffic Shop (1072)

In 2009, the Long-range Facilities Plan identified the need for a new, larger Traffic Operations Shop at the Kennedale location. Land was acquired for the new facility in 2010 for \$3.3 M, adjacent to the existing Northeast Roadway Maintenance yard. The new facility is anticipate to approximately double physical capacity, allowing sufficient capacity for current resources and future growth.

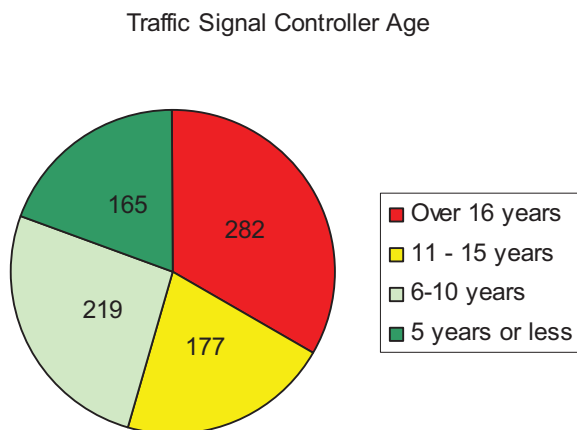
The Traffic Operations Shop provides space for a number of operational programs:

- New Signs Design and Manufacturing;
- Sign Repair Shop;
- Paint and Pipe Shop;
- Parking Metre Shop;
- Materials Management (Stores);
- Staff Facilities;
- Reception/Administration;
- Storage;
- Vehicle Garage.

The project is currently unfunded.

Traffic Control Rehabilitation (1210)

The Traffic Control rehabilitation program manages replacement and rehabilitation of traffic control infrastructure to ensure it is in proper working order. This includes signals, poles, controllers and cabinets that control vehicle, pedestrian and bus traffic within the City of Edmonton. This program is coordinated with other roads and transit projects to enable an efficient overall system, and to minimize impact and disruption during renewal activities.



Traffic controllers have a service life of 10-15 years and must be replaced to ensure functionality and effectiveness. Fifty-three per cent of the inventory has or will soon exceed its life cycle. Inventories will continue to grow as the city expands into new developments. The replacement program must be kept up to ensure that repair and trouble calls do not overwhelm operating costs, and that the signals continue to operate safely and efficiently.

Traffic Signals – Pedestrian Safety (1220)

Traffic signals and other engineering measures contribute significantly to the safety of the overall roadway system. The traffic signals/pedestrian safety profile manages a composite program to design, specify, procure and upgrade traffic control systems that improve citizen safety and mobility. This includes installation of: traffic signals; pedestrian-activated signals; signal phases and rephases; traffic loops; vehicle detection systems; bus loops; pedestrian countdown signals; amber flashers; and fire stations' advanced warning signals warranted to increase safety for pedestrians and motorists. This program also provides capital support to implement changes to existing traffic management measures.

Three-year priority goals include:

- Increase traffic safety
- Select and remedy high congestion areas to optimize throughput
- Reduce barriers to the use of different modes of transportation
- Support developer-funded signal needs (100 per cent cost reimbursable)

In previous period, activities under Traffic Signals/Pedestrian-Bus Safety (1220), Traffic Safety (1221) and Intelligent Transportation Systems (1222) were handled under Traffic Safety Engineering Measures (1220). In the current period, each of these areas has been developed as a separate project profile.

Traffic Safety (1221)

Investment in the Traffic Safety Program provides the City with an opportunity to implement engineering measures towards improving vehicle, pedestrian and bus safety.

The initiatives in this unfunded profile are grouped into three categories:

Traffic Control and Streetlighting Inventory

System Components	Service Life
High Pressure Sodium Lights	5 years
Electronic Parking Meters	10 years
CCTV Camera	10 years
Digital Message Signs (DMS)	10 years
Traffic Signal Controllers	16 years
LED Lights	18 years
General Ground Signs	20 years
Signal Cabinets	25 years
Painted Poles	30 years
Galvanized Poles	75 years
Overhead Sign Structures	100 years
Combined category	Asset Value
Streetlighting	\$612 M
Traffic Signals	\$170 M
Traffic Signs	\$54 M

Neighbourhood Traffic – ongoing enhancements to roadway geometry to reduce the number of collisions and improve pedestrian safety.

Traffic Control Signing - signage to improve the safety of traffic operations, including pedestrian crosswalk, bike routes and other controls required for safe pedestrian and vehicle operation; also includes upgrades to meet new signage guidelines.

School Drop-Off Bays - facilities for passenger vehicle drop-off and pick-up activities developed in collaboration with local school boards. Cost-sharing arrangements with the school boards are under discussion.

Intelligent Transportation System (1222)

Intelligent Transportation Systems (ITS) use new and emerging technology to reduce congestion, save money, improve safety and reduce environmental impacts in all transportation areas. These systems have several components, including traffic sensors, electronic signs, cameras and advanced controller technology.

This unfunded profile is for a composite program to implement these technologies, to make more effective and efficient use of the available capacity of the existing transportation system. Strategies for implementation include: selected upgrades of existing traffic control equipment; improved traffic signal timing management; improved transit service management and transit priority; incident detection and management; and traveler information systems. Specific initiatives include:

- Continuation of development of Advanced Traffic Signal Control to address congestion;
- Implementation of initiatives to improve incident detection, response management and traveler information using CCTV cameras;
- Replacement and additions of Dynamic Message Signs (DMS) strategically placed along major arterial corridors to prevent unnecessary additional traffic congestion.
- Improvements to enable goods movement, such as Smart Roads along Yellowhead Trail

Parking Control Technology System (1230)

This unfunded profile manages the replacement of parking control infrastructure with updated technology to increase overall revenue. These new devices are industry standard and offer additional payment options to users, such as by credit card and pay-by-cell-phone. In addition, they use maintenance management software to support more efficient enforcement and cash collection techniques. The program involves a pilot to fully test concept function and identify issues prior to wider rollout. The next stage is the replacement of approximately 3,300 on-street parking meters as well as City-owned off-street parking services at Library and City Hall lots. Ultimately, this program will involve areas served by parking control by approximately 50 per cent.

Integrated Speed Equipment (1225)

Automated Traffic Enforcement involves photo radar to detect speeding offences and intersection cameras to detect red light offenses. This program will acquire equipment required for the operation of automated speed and intersection enforcement by the Edmonton Police Service (EPS). The program is also responsible for the development and updating of the ticket processing systems within the City that are required for the processing of fines and summonses associated with operation of EPS's Automated Enforcement programs. Funding for this capital program is restricted to revenue from Integrated Speed Equipment.

Streetlighting Rehabilitation (1260)

Streetlights require periodic renewal in order to maintain a working system that supports safe traffic and pedestrian movement. Aging streetlight infrastructure impedes the safety of motorists and pedestrians. As such, it must be maintained to working standards. This composite profile involves a number of components :

Rehabilitation and Replacement of Streetlight Poles – an annual condition assessment program identifies poles that have exceeded their useful life and require replacement; often this is due to severe rusting, which causes structural integrity issues and public safety concerns.

Lighting Enhancements – enhancement of lighting conditions at intersections to increase visibility of pedestrians to motorists. Also includes replacement at various arterial corridors to increase lighting and meet recommended TAC lighting level guidelines.

Walkway Lighting - installation of walkway lighting in areas with a potential for high crime to improve safety through environmental design.

Quality Assurance Control and Condition Analysis – capital support for program to ensure that equipment complies with required specifications; also involves five-year condition analysis and inspection of existing infrastructure.

Alley Lighting – funding for approved alley lighting requests (100 per cent cost reimbursable).

Geo Environmental (1950)

This program responds to emergent or unforeseen geotechnical and environmental issues related to road right-of-way, recreational trails and facilities, waterways and ravines. This includes the emergency repair of erosion problems and landslides on City lands, protecting endangered public infrastructure, and ensuring public safety and mobility. This program also undertakes environmental audits and investigations, and remediates contaminated sites that are unexpectedly encountered during roadway construction.





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