

# Branch — Transportation Operations

## Introduction

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 neighborhoods. Transportation Operations has six sections with responsibilities for various functional areas:

## Roadway Maintenance

- Performs winter and summer road maintenance, including snow and ice control, spring clean-up, pothole filling, patch paving, sidewalk repair, street cleaning and bridge maintenance.
- Monitors and evaluates pavement and bridge condition.
- Manages five district yards, as well as facilities for snow storage and sand recycling.



## Engineering Services

- Performs materials research and testing, quality assurance, and structural design and analysis of pavements. Coordinates aggregate recycling program.
- Provides construction surveying, geotechnical engineering, and noise and vibration monitoring services.
- Monitors and repairs landslides and erosion control.
- Supports other departments including expertise in geotechnical engineering, site remediation and material testing

## Traffic Engineering

- Designs traffic signal systems and networks.
- Upgrades traffic controls to improve safety.

## Office of Traffic Safety

- Collaborates with Edmonton Police Services to address

traffic safety through education, engineering and enforcement. Oversees automated enforcement.

- Performs traffic safety reviews and collision data analysis.
- Reviews and recommends speed management initiatives and community safety programs.



## Signals, Street Lighting and Infrastructure

- Manages inventory and agreements with EPCOR for signals and street lighting.
- Operates the traffic management centre and traffic cameras.
- Develops programs for rehabilitation of arterial and neighbourhood roadways.
- Provides base mapping services.

## Traffic Control

- Manages road rights of way for traffic control.
- Negotiates access agreements, as well as permit approvals for utility installations and private use of municipal right of way.
- Manages traffic signing, detours, on-street construction permits and on-street parking.
- Coordinates traffic and speed bylaws.



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## Opportunities and Challenges

Maintaining a safe, efficient and well functioning transportation system is a key service provided to citizens by Transportation Services. Edmonton's northern climate is a challenge for the department and the expectation for snow and ice control activities was reviewed over the past year which resulted in increased expenditures. User expectations must be balanced with funding and operational realities. Ongoing communication with stakeholders is required to leverage community knowledge and deliver effective services.

### Office of Traffic Safety

The Office of Traffic Safety collaborates with Edmonton Police Services, internally and with the University of Alberta to address traffic safety through education, engineering and enforcement. This office was the first of its kind in Canada and focuses on evidence based approach for improving safety.

### Snow and Ice Control

Evaluation of the response to the major snow events in the past winter season has revealed that funding for snow and ice control activities and resources was insufficient to meet public expectations of a sufficient response to a severe snowfall event. Equipment resources and support facilities, such as snow storage sites and operating yards are critical to timely delivery of expected levels of service to citizens. Perception of response can be localized and requires city-wide performance measures for effective evaluation.

### Optimizing the Efficiency of the Existing Road Network

Edmonton is partnering with German traffic logistics company PTV and car manufacturer BMW and several other companies to test the optimization of traffic operation along Yellowhead Trail. This implementation will be the first of its kind in North America.

### Conversion to LED Street Lights

Replacement of the existing High Pressure Sodium Street Lights with LED Street Lights has started in residential areas in 2011, and will be done in conjunction with future neighbourhood rehabilitation programs. LED street lights have many benefits: they are more energy efficient, provide energy savings, reduce CO2 emissions and have increased longevity.

## Impact of Capital Projects

Transportation Operations has service packages which are an impact from capital projects. Operating costs will increase due to the additional equipment required to meet the service levels as set out in the Snow and Ice Control policy C409G. The service packages are related to inventory growth in sidewalks, roadways, streetlights and traffic control devices.

## Service and Budget Review

To meet the 2012 budget target, the Branch examined and evaluated proposed changes to the 2012 budget.

To increase revenue or decrease costs, three ideas were explored. First, increased parking meter revenue is expected with new parking meter technology that offers new payment methods. The new technology requires a change in the Downtown Parking Policy. Second, new Right of Way Management License Fees for portable sign permits and permanent waste bins is being proposed. Third, the cost of City provided survey services will be recovered from capital projects or other City Departments. These measures would not have a significant impact on citizens.

Several options were identified that will moderately decrease service levels. Reducing the service levels outlined in the Street Cleaning Policy would involve reduction of street cleaning on roadways and elimination of alley cleaning. These changes would impact residents as debris will accumulate that could impact drainage in alleys and on major roadways. In addition, eliminating the litter removal program will reduce significantly the portion of work done by City forces towards Capital City Clean Up. It is expected that litter will accumulate on major roadways. Reducing streetscape maintenance will impact Business Redevelopment Zones because this will eliminate the washing and the ongoing painting of street furniture. Reducing concrete sidewalk and curb repairs and completing more repairs with asphalt will increase the number of trip hazards, possibly creating additional liability issues.

Service of random street light bulb outages in residential areas will be eliminated and bulbs would only be replaced through regularly scheduled maintenance once every five years. This would significantly reduce service to citizens in areas where bulbs need to be replaced and may create roadway safety hazards.

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## Approved 2012 Budget – Branch Summary (\$000)

	2010 Actual	2011 Budget	\$ Change '11-'12	2012 Budget	% Change '11-'12
<b>Revenue &amp; Transfers</b>					
User Fees, Fines, Permits, etc.	\$ 6,776	\$ 5,732	\$ 640	\$ 6,372	11.2
Provincial Grants <sup>1,2</sup>	3,200	3,100	-	3,100	-
Parking Meters	6,176	6,234	500	6,734	8.0
<b>Total Revenue &amp; Transfers</b>	<b>16,152</b>	<b>15,066</b>	<b>1,140</b>	<b>16,206</b>	<b>7.6</b>
<b>Expenditure &amp; Transfers</b>					
Personnel	61,314	67,142	2,944	70,086	4.4
Materials, Goods & Supplies	26,906	37,951	1,464	39,415	3.9
External Services	38,290	29,275	(1,214)	28,061	(4.1)
Fleet Services	20,710	22,264	4,199	26,463	18.9
Intra-municipal Services	3,150	3,949	(365)	3,584	(9.2)
Utilities & Other Charges	10,383	10,366	51	10,417	0.5
Transfer to Reserves	612	536	14	550	2.6
Subtotal	161,365	171,483	7,093	178,576	4.1
Intra-municipal Recoveries <sup>3</sup>	(35,943)	(34,217)	279	(33,938)	(0.8)
<b>Total Expenditure &amp; Transfers</b>	<b>125,422</b>	<b>137,266</b>	<b>7,372</b>	<b>144,638</b>	<b>5.4</b>
<b>Net Operating Requirement</b>	<b>\$ 109,270</b>	<b>\$ 122,200</b>	<b>\$ 6,232</b>	<b>\$ 128,432</b>	<b>5.1</b>
<b>Full-time Equivalents</b>	<b>740.9</b>	<b>751.1</b>	<b>39.5</b>	<b>790.6</b>	

- <sup>1</sup> 2010 Actual: \$3,200 one-time expenditure is offset by \$3,200 MSI grant as a result of an agreement signed with the Provincial Government of Alberta to assist in the funding of Rabbit Hill Road Interchange over the Anthony Henday Highway.
- <sup>2</sup> 2011 & 2012 Budget: \$3,100 Microsurfacing, a road sealant application, is eligible for funding through provincial grant Municipal Sustainability Initiative (MSI).
- <sup>3</sup> Includes 2012 Proposed Budget recovery of \$11,633 for Photo Enforcement operations and Traffic Safety - Transportation, a decrease of \$3,772 from 2011. Refer to Traffic Safety Summary within the Corporate Programs.

## Budget Changes for 2012 (\$000)

### Revenue & Transfers - Changes

#### User Fees, Fines, Permits, etc. \$1,140

Increase in revenue of \$1,000 is due to service and budget review for new right-of-way management license fees. As part of service and budget review, parking meter revenue will increase by \$500 contingent on capital investment into new parking meter technology and asset purchases and expanding existing parking meter service in identified locations. A decrease of \$360 asphalt milling sales to get the budget in line with historical actuals.

### Expenditures & Transfers - Changes

#### Personnel \$2,944

Movement within the salary ranges, changes in benefits and the last year of a 3-year 1% LAPP contribution increase account for \$171. Snow Removal Strategies account for \$2,326 increase. Operating Impact of Capital to Roadway Maintenance results in \$383 increase and a \$68 increase to Traffic Control.

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Other personnel increases include \$467 for Office of Traffic Safety Violation Review & Technical Team, \$276 for Geotechnical & Environmental Testing. \$100 increase is required to administer new right-of-way management license fees. A total reduction of \$847 is the result of the Service and Budget Review to reduce street cleaning in summer month; streetscape, sidewalk, curb and gutter maintenance.

### **Material, Goods & Supplies \$1,464**

An increase of \$1,615 is attributed to inflation. Snow Removal Strategies account for \$400 increase. Operating Impact of Capital to Roadway Maintenance result in increases of \$217. Remaining balance is attributed to SBR reduction of \$468 and a \$300 reduction for Engineering Services Road Millings Inventory.

### **External Services (\$1,214)**

Spring Sweeping makes up \$1,200 of the increase. Operating Impact of Capital to Signals and Streetlight Infrastructure results in an increase of \$310 and to Traffic Control an increase of \$58. LED Streetlight Conversion results in \$100 reduction. Further reductions of \$320 in random bulb replacement, and \$75 for streetscape, sidewalk, curb and gutter maintenance. Other changes include a \$197 increase for litter removal to be funded within the department and a decrease of \$300 in asphalt tenders. An increase of \$20 is due to inflation. \$2,200 reduction is to fund the Violence Reduction Strategy.

### **Fleet Services \$4,199**

An increase of \$2,282 in Fleet Services is attributed to inflation rate increase. Changes in volume result in \$2,336 increase due to Snow Removal Strategies and \$25 increase due to Operating Impact of Capital to Traffic Control. The Service & Budget Review reductions accounted for \$444.

### **Intra-municipal Services (\$365)**

Charges for special event policing, shared radio cost, space rent, security, custodial are increasing \$348 to get the budget in line with department service provider while the remaining \$86 for Snow Removal Strategies. \$800 reduction is to fund the Violence Reduction Strategy.

### **Utilities & Other Charges \$50**

\$131 is the cost impact for Streetlight Signals & Infrastructure, while Snow Removal Strategies and inflation totalled \$29 and \$100 respectively. This was lowered by Corporate Strategy Reductions of \$49 in telephones and cellular phones. The Signals & Streetlight Infrastructure Growth impact on capital resulted in a \$160 reduction within this expense category.

### **Transfer to Reserves \$14**

An inflationary increase of \$14 is for the aggregate site reserve.

### **Intra-municipal recoveries \$279**

Recoveries from Capital will be increased as follows: Snow Removal Strategies resources of \$1,611 will be utilized in the summer for the neighbourhood overlay program. Further \$476 recoveries for engineering services to provide construction monitoring of erosion, landslide repair projects and for environmental testing. \$900 increase is to align the budget with historical actual for the in-house grind and overlay Capital program. Photo Enforcement operations and Traffic Safety - Transportation have decreased by \$3,772. The remaining increase of \$506 is for inflation.

## **Full-time Equivalents - Changes**

9 permanent positions added mid-year in 2011 requires full year budget as follows: 0.5 FTE for right-of-way management license fee, 0.5 FTE for Geotechnical Engineer, 3 FTEs for the Office of Traffic Safety's Violation and Review Team and 0.5 FTE for Senior Traffic Engineer's SE & W LRT microsimulation modeling. -0.3 FTE is a historical adjustment for a position previously transferred from Street Lighting to Development Services. A reduction of 8.7 FTEs is the result of the Service and Budget Review. 2 FTEs for permanent Environmental Testing positions are required to review the increasing volume of environmental reports and Contaminated Sites Inventory Project. Funding for 35 FTEs for permanent operators is required to meet the Snow and Ice Control policy C409G. The Operating Impact of Capital to Roadway Inventory results in an addition of 6 FTEs and to Traffic Control an addition of 1 FTEs, resulting in permanent positions.

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## Service Package - Snow Removal Strategies

Funded

### Description

This service package includes all operating costs for the additional 20 truck sander/plow units approved by Council at the March 16, 2011 meeting. The additional equipment is required to meet the service level for plowing of roadways and residential blading as set out in the Snow and Ice Control policy C409G, as approved by Council on September 27, 2011. Included in the operating costs is all the costs for equipment, fixed, variable and fuel; as well as personnel costs for operators. This is an increased service level from the previous policy. This package includes funding for 35 FTEs (permanent), these operators and the trucks will be utilized in summer for neighbourhood overlay program. One permanent FTE is needed for a web coordinator to support the snow clearing and neighborhood renewal programs by ensuring timely and accurate information is available through the public engagement group.

### Justification

This funding is required to meet the new service levels set out in policy C409G. This policy included enhanced service levels for residential blading and snow removal/hauling on collector roadways and bus routes. Not funding this service package would mean that the enhanced service levels cannot be implemented.

### Links to Strategic Goals, Departmental Outcomes & Performance Measures

<b>Strategic Goal</b>	<b>Preserve and Sustain Edmonton's Environment</b>
Corporate Outcome	The impact of City operations on air, land and waters is minimized
<b>Strategic Goal</b>	<b>Improve Edmonton's Livability</b>
Corporate Outcome	Complete collaborative communities that are accessible, strong and inclusive Safe and clean city
<b>Strategic Goal</b>	<b>Diversify Edmonton's Economy</b>
Corporate Outcome	The Corporation supports a competitive business climate and delivers business friendly service

### Impact on Other Departments

Additional equipment maintenance for Fleet Services (\$2.3M):  
\$1.1M is expected in Fixed Costs, \$1.0M in Variable and \$0.2M in Fuel.

Incremental (\$000)	2012				2013				2014			
	Exp	Rev	Net	FTEs	Exp	Rev	Net	FTEs	Exp	Rev	Net	FTEs
New Budget Annualization	\$ 3,566	\$ -	\$3,566	36.0	\$ 95	\$ -	\$ 95	-	\$ 98	\$ -	\$ 98	-
	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>\$ 3,566</b>	<b>\$ -</b>	<b>\$3,566</b>	<b>36.0</b>	<b>\$ 95</b>	<b>\$ -</b>	<b>\$ 95</b>	<b>-</b>	<b>\$ 98</b>	<b>\$ -</b>	<b>\$ 98</b>	<b>-</b>

# Branch — Transportation Operations

Service Package - Roadway Maintenance - Inventory Growth

Funded

## Description

This service package identifies the funding required to maintain inventory increases in the roadway network, estimated at 1%. This package includes funding for sidewalk maintenance, asphalt road maintenance, snow and ice control and street cleaning to maintain current service levels. This package includes 6 FTEs (permanent positions).

## Justification

Funding will provide current service levels for increased inventory, not funding service for increased inventory would result in decreased level of service.

## Links to Strategic Goals, Departmental Outcomes & Performance Measures

**Strategic Goal**                      **Preserve and Sustain Edmonton's Environment**  
Corporate Outcome                  Edmonton strives to be a leader in environmental advocacy and stewardship

**Strategic Goal**                      **Transform Edmonton's Urban Form**  
Corporate Outcome                  Edmonton has sustainable infrastructure that fosters and supports community needs  
Complete collaborative communities that are accessible and strong  
Safe and clean city

**Strategic Goal**                      **Diversify Edmonton's Economy**  
Corporate Outcome                  The City attracts talent and investment making it nationally competitive

## Impact on Other Departments

There is no impact on other departments.

incremental (\$000)	2012				2013				2014			
	Exp	Rev	Net	FTEs	Exp	Rev	Net	FTEs	Exp	Rev	Net	FTEs
New Budget	\$ 600	\$ -	\$ 600	6.0	\$ 216	\$ -	\$ 216	1.0	\$ 216	\$ -	\$ 216	1.0
Annualization	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>\$ 600</b>	<b>\$ -</b>	<b>\$ 600</b>	<b>6.0</b>	<b>\$ 216</b>	<b>\$ -</b>	<b>\$ 216</b>	<b>1.0</b>	<b>\$ 216</b>	<b>\$ -</b>	<b>\$ 216</b>	<b>1.0</b>

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## Service Package - Traffic Control Inventory Growth

Funded

### Description

This service package is for the Traffic Control section, approved net funding of \$150,000 (1 FTE). Traffic Control requires a new permanent position to support ongoing maintenance requirements due to an increase in inventory that has resulted from capital investment in Roads in recent years. This package includes additional equipment and resources to help meet the objectives of the City's Snow and Ice Control Policy C409G, approved by Council August 31, 2011.

### Justification

Snow and ice buildup around transportation infrastructure (signs, structures, poles, cameras, etc) hinders the ability for staff to safely install new infrastructure, and access existing infrastructure, in order to conduct technical maintenance. Adequate and immediate access to electronic equipment including Dynamic Messaging Signs and Intersection Safety Cameras, must be made available to ensure maintenance work can be conducted in a timely manner to prevent sensitive technical components from failing. Sensitive technical components of these electronic equipment are susceptible to failure in Edmonton's inclement climate conditions.

There are approximately 167 combined units of Dynamic Message Signs, Arrow Boards, and Permanent boards, and approximately 50 Safety Cameras deployed at various locations and intersections across the City. These units support road safety and enforcement, on-street construction projects, and are proving valuable in promoting traffic safety, prosecuting speed and traffic bylaw offenders, relieving and preventing traffic congestion, providing real time road conditions, communicating special events and upcoming traffic delays, and offering alternative driving routes. To maximize asset value and benefit, these equipment must be maintained in road worthy condition and optimal working condition through regular maintenance.

### Links to Strategic Goals, Departmental Outcomes & Performance Measures

<b>Strategic Goal</b>	<b>Improve Edmonton's Livability</b>
Corporate Outcome	Complete collaborative communities that are accessible and strong
	Safe and Clean City
<b>Strategic Goal</b>	<b>Diversify Edmonton's Economy</b>
Corporate Outcome	The City attracts talent and investment making it nationally competitive

### Impact on Other Departments

There is no impact on other departments.

incremental (\$000)	2012				2013				2014			
	Exp	Rev	Net	FTEs	Exp	Rev	Net	FTEs	Exp	Rev	Net	FTEs
New Budget	\$ 150	-	\$ 150	1.0	\$ 7	-	\$ 7	2.0	\$ 4	-	\$ 4	-
Annualization	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>\$ 150</b>	<b>\$ -</b>	<b>\$ 150</b>	<b>1.0</b>	<b>\$ 7</b>	<b>\$ -</b>	<b>\$ 7</b>	<b>2.0</b>	<b>\$ 4</b>	<b>\$ -</b>	<b>\$ 4</b>	<b>-</b>

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## Service Package - Traffic Engineering, Signals, Streetlighting & Infrastructure Inventory Growth

Funded

### Description

This service package provides an increase of \$150,000 net funding in 2012 for the Traffic Engineering, Signals, Streetlighting & Infrastructure section to support the Electrical Services Agreement with EPCOR, growth in streetlight and signals inventory resulting from aggressive residential and commercial development in new areas and recent capital investment in the City's growth, and increased energy costs due to both higher consumption and higher rates.

In 2013, a Senior Traffic Analysis Engineer and a General Supervisor of Traffic Control Engineering are required for the Traffic Engineering section to support and maintain services levels resulting from LRT Expansion and growing roads networks. These positions are necessary to analyze and maximize efficiency of traffic flow and capacity of key goods movement along primary traffic and LRT corridors, by creating an optimal mix of traffic control and signal timings towards promoting *The Way We Move*.

### Justification

The approved funding represents 21% of the required cost increases, necessary to meet higher costs of utilities due to an increase in both energy consumption and energy prices, and higher costs of maintaining the City's inventory due to rising industry prices and growing numbers of signals and streetlights. Regular operation and maintenance is a critical task to ensure functionality and reliability of the traffic network. Signals and streetlight infrastructure must be maintained in accordance with National and North American standards and criteria, to ensure safe operation and public safety, while minimizing legal issues and liabilities. Additional funding will provide for an optimal service level to include preventative maintenance schedules which allows the City to further maximize asset life, mitigate risks of failure, and maintain traffic and pedestrian safety.

### Links to Strategic Goals, Departmental Outcomes & Performance Measures

**Strategic Goal**                      **Improve Edmonton's Livability**  
Corporate Outcome                Complete collaborative communities that are accessible and strong  
Safe and Clean City

**Strategic Goal**                      **Diversify Edmonton's Economy**  
Corporate Outcome                The City attracts talent and investment making it nationally competitive

### Impact on Other Departments

There is no impact on other departments.

incremental (\$000)	2012				2013				2014			
	Exp	Rev	Net	FTEs	Exp	Rev	Net	FTEs	Exp	Rev	Net	FTEs
New Budget	\$ 150	-	\$ 150	-	\$ 231	-	\$ 231	2.0	\$ 11	-	\$ 11	-
Annualization	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>\$ 150</b>	<b>\$ -</b>	<b>\$ 150</b>	<b>-</b>	<b>\$ 231</b>	<b>\$ -</b>	<b>\$ 231</b>	<b>2.0</b>	<b>\$ 11</b>	<b>\$ -</b>	<b>\$ 11</b>	<b>-</b>