

Utilities & Environmental Protection



Utilities & Environmental Protection

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LINES OF SERVICE

Collection Services
Disposal & Processing Services
Environmental Programs & Services
Field Services
Infrastructure Delivery
Infrastructure Planning
Infrastructure & Program Management
Safety Programs & Services
Utilities Construction Services
Utilities Strategic Services
Strategic Services - Environmental & Safety Management
Strategic Services - Waste & Recycling Services
Wastewater Treatment
Water Quality Services
Water Treatment

Utilities & Environmental Protection - Overview

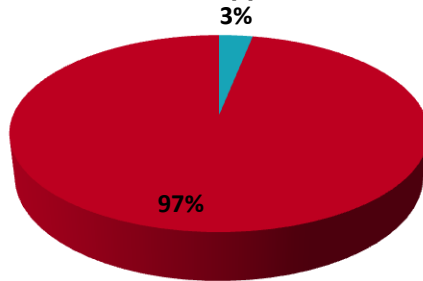
Utilities & Environmental Protection (UEP) protects public health and the environment and helps all employees work safely. UEP delivers integrated programs, services and facilities focusing on the environment, public health and workplace safety.

Services include: collection of residential waste; recycling services; composting and waste diversion programs; landfill management; contaminated site management; air quality management; greenhouse gas reduction; provision of safe, clean drinking water; treatment and disposal of wastewater, and protection of the river and watershed.

UEP leads The Corporation for workplace health and safety and environmental performance. Through developing corporate safety and environmental policies and implementing the Corporate Safety Strategy, UEP supports all City departments to continually improve safety performance and manage environmental risk.

UEP consists of four business units: Environmental & Safety Management (ESM); Waste & Recycling Services (WRS); and Water Resources and Water Services (UTIL).

**Utilities & Environmental Protection
Share of Tax Supported Net Operating Budget
City Wide Total Tax Support: \$1,657 Million**



■ Utilities & Environmental Protection ■ Other Tax Supported Operations

(City wide tax support amount is the average common revenues less corporate costs & debt servicing)

Utilities & Environmental Protection - Overview

Trends

A review of trends and strategic risks informed the development of UEP's 2015-2018 business plan and budget. The significant trends and risks are categorized in six priority areas:

Customer Service and Stakeholder Relations

Trends indicate that customers want timely access to information, ease of doing business and value for services. UEP is committed to customer service excellence and providing consistent customer service levels to align with customer expectations.

Natural Resource Management

UEP will continue to manage regulatory risks to public health and the environment. Increasing pressures including greenhouse gas emissions, changing weather patterns, increases in flood severity, changes in water quality, drought, and growth will require additional focus to build public awareness of the shared responsibility for the environment.

Asset Management

The uncertainty related to growth, the ability to deliver capital programs and alignment with long-term Municipal Development Plan goals are strategic risks facing UEP. By managing and promoting growth to achieve social, environmental and financial capacities, UEP will ensure The City's growing asset base is maintained and protected.

Financial Management

The increasing utility and tax rates to meet growth could lead to affordability challenges. Being as efficient and effective as possible, reducing costs and focusing on value for money will ensure that UEP continues to deliver services at a fair price.

Workforce Management

Changes to the demographics of the workforce, combined with the increasing demand for labour in Calgary, will challenge the ability to attract and retain employees. UEP will focus on leadership practices and processes, adapting to the changing needs of the workforce and ensuring that employees thrive in a safe, supportive and challenging work environment.

Safety

UEP champions a safe work environment where safety is a shared responsibility and a core value for all employees, contractors and The Corporation. As the corporate leader for safety, UEP will create a strong safety culture; improve safety performance; and implement contractor safety management programs.

Long-Term Plans

This business plan demonstrates UEP's commitment to achieving Council Priorities and the long-term goals defined in the 2020 Sustainability Direction (2020 SD), the Municipal Development Plan (MDP) and imagineCALGARY. UEP will work with The Corporation and the community to achieve the 2020 SD objectives including: 80 per cent diversion of waste from City-run landfills by 2020; brownfields strategy; greenhouse gas reduction; water efficiency plan; and stormwater management strategy. UEP will support all departments to implement the Corporate Safety Strategy and to achieve the workforce target to be best in class for Canadian municipalities for recordable injury rates. For 2015-2018, the Utilities' actions include leading the MDP/CTP - Watershed Protection/Land Use Planning initiative.

Utilities & Environmental Protection - Overview

Citizen Engagement

UEP's actions reflect the Action Plan engagement results, where citizens identified as priorities: protecting the environment, maintaining service levels, efficiency and effectiveness, the responsible use of water, recycling programs and services, demonstrating value, and integrated planning. UEP's plan demonstrates efficiency, a citizen focused approach and a commitment to services that add value to citizens' lives.

Council Priorities

UEP is committed to Council Priorities for 2015-2018 and closely aligns with three Priorities: a city of inspiring neighbourhoods; a healthy and green city; and a well-run city.

A city of inspiring neighbourhoods - UEP supports the infrastructure needs of a growing city and achieving the long-term goals of the MDP. UEP anticipates infrastructure requirements to support growth. UEP enhances The City's ability to prepare/respond to natural disasters, including building resiliency to flooding. UEP contributes to neighbourhood vitality by redeveloping brownfield sites and by supporting waste diversion at city events.

A healthy and green city - UEP works with the community, the region and The Corporation to achieve air, land, and water goals to protect and enhance the environment. UEP encourages clean air technologies to reduce GHG emissions from Corporate sources. UEP is committed to implementing the Green Cart Program, Multi-Family and ICI waste diversion to support the goal of 80 per cent diversion by 2020. UEP leads by example to protect public health and the environment, ensuring regulatory compliance. UEP builds public awareness of the shared responsibility for the environment.

A well-run city - UEP provides responsive quality services while balancing capacity and value for money. UEP is committed to customer service excellence and integrates customer feedback to drive program and service improvements. UEP focuses on sound financial practices and efficient and effective operations to ensure financial health now and in the future. UEP enables a flexible and adaptable workforce, where employees thrive in a safe, supportive and challenging work environment.

Utilities & Environmental Protection - Strategies and Performance Measures for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:

UEP supports the infrastructure needs of a growing city and enhances The City's capacity to prepare and respond to natural disasters.

Strategy Related to Council Outcome	Accountable BU
N2 Build resiliency to flooding.	UTIL
N3 Enhance The City's capacity and resiliency to prepare for and respond to pandemics, natural disasters and emergency situations.	ESM, UTIL, WRS
N5 Systematically invest in established neighbourhoods as they evolve to accommodate changing community needs.	UTIL
N6 Manage and promote growth to achieve the best possible social, environmental and economic outcomes within financial capacities.	ESM, UTIL
N7 Develop a new funding framework to provide for infrastructure in new and redeveloping neighbourhoods.	UTIL
N8 Make it easier to build developments that meet our Municipal Development Plan and Calgary Transportation Plan objectives.	UTIL
N9 Provide great public spaces and public realm improvements across the city to foster opportunity for well used public spaces and places for citizen connections and urban vitality.	ESM, WRS

Performance Measures Related to Council Outcome	2012 Actual	2013 Actual	2014 Estimated	2015 Target	2016 Target	2017 Target	2018 Target
N.PM1 Projected remaining years of water treatment capacity.	10	6	5	5	5	5	5
N.PM2 Projected remaining years of wastewater treatment capacity.	6	5	4	3	4	3	3
N.PM3 Number of City-owned brownfields returned to productive community use via redevelopment, disposition, or interim activities.	NA	NA	2	2	2	2	2

A city of inspiring neighbourhoods
Every Calgarian lives in a safe, mixed and just neighbourhood,
and has the opportunity to participate in civic life.

A prosperous city

A city of inspiring neighbourhoods

A city that moves

A healthy and green city

A well-run city

Utilities & Environmental Protection Commitment:

UEP supports the infrastructure needs of a growing city and enhances The City's capacity to prepare and respond to natural disasters.

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Alignment of Strategies and Performance Measures to Long-Term Plans

Council Strategy N6 - Manage and promote growth to achieve the best possible social, environmental and economic outcomes, aligns with the goals of the MDP including adequate land supply (planned and serviced). Performance Measures N.PM1, PM2 - Projected remaining years of water and wastewater treatment capacity, identify infrastructure requirements to support growth.

Council Strategy N8 - Make it easier to build developments that meet our MDP and CTP objectives, contributes to the achievement of long-term plans. UEP's 2015-2018 business plan actions integrate watershed protection with land use planning, one of five MDP/CTP initiatives prioritized by the Director's Integrated Growth Committee (DIGC).

Performance Measure N.PM3 - Number of City-owned brownfields returned to productive community use, measures progress for the following 2020 SD target: By 2020, The City has demonstrated the viability of brownfield redevelopment through interim uses, disposition or redevelopment of 12 City-owned brownfields.



Utilities & Environmental Protection - Strategies and Performance Measures for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:
 UEP works with the community, the region and The Corporation to achieve air, land, and water goals to help conserve, protect and enhance the environment.

A healthy and green city
 We steward our air, land, and water while encouraging
 healthy lifestyles for all Calgarians.

Strategy Related to Council Outcome	Accountable BU
H1 Implement the green cart program and multi-family recycling strategy, and reduce industrial, commercial and institutional waste in our landfills.	WRS
H2 Encourage a broader range of innovative and clean energy technologies.	ESM
H3 Manage the interrelationships between flood protection, water quality and quantity, and land use.	ESM, UTIL
H4 Work with our regional partners and the Government of Alberta on an integrated approach to the watershed.	UTIL
H6 Continue to build public awareness and understanding of our shared responsibility to conserve and protect the environment.	ESM, UTIL, WRS
H10 Lead by example and manage regulatory risks to protect public health and the environment.	ESM, UTIL, WRS

Performance Measures Related to Council Outcome	2012 Actual	2013 Actual	2014 Estimated	2015 Target	2016 Target	2017 Target	2018 Target
H.PM1 Annual waste collected per household (kilograms).	683	695	695	695	688	565	461
H.PM2 Annual waste landfilled per capita (kilograms).	556	583	582	584	543	507	410
H.PM3 Annual waste diverted from landfills through City of Calgary programs per capita (kilograms).	91	91	85	82	81	106	132
H.PM4 Greenhouse gas (GHG) emissions from vehicle fuel use for The City's operations to be returned to 2012 levels (kilotonnes equivalent carbon dioxide - CO2e).	110 kt CO2e	113 kt CO2e	114 kt CO2e	114 kt CO2e	116 kt CO2e	118 kt CO2e	110kt CO2e



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We steward our air, land, and water while encouraging healthy lifestyles for all Calgarians.

Performance Measures Related to Council Outcome	2012 Actual	2013 Actual	2014 Estimated	2015 Target	2016 Target	2017 Target	2018 Target
H.PM5 Provincial regulations met for treated drinking water quality.	98%	100%	100%	100%	100%	100%	100%
H.PM6 Provincial regulations met for treated wastewater.	100%	96%	100%	100%	100%	100%	100%
H.PM7 Single family average daily water consumption per person (litres per capita per day).	237	231	228	<227	<223	<219	<215
H.PM8 Annual river water withdrawals (megalitres).	178,458	178,530	185,000	<215,000	<215,000	<215,000	<215,000
H.PM9 Total suspended solids (TSS) loading from stormwater to the river (kg/day).	NA	NA	39,500	<41,300	<41,300	<41,300	<41,300

Alignment of Strategies and Performance Measures to Long-Term Plans

Council Strategy H1 - Implement the green cart program, multi-family recycling strategy, and reduce ICI waste and Performance Measure H.PM3 - Waste diverted through City of Calgary programs supports the 2020 SD goal of achieving 80 percent waste diversion from City-run landfills by 2020.

Council Strategy H2 - Encourage a broader range of innovative and clean energy technologies and Performance Measure H.PM4 - Greenhouse gas emissions (GHG) from vehicle fuel use for The City's operations supports the 2020 SD goal of reducing GHG emissions by 20% from 2005 baseline by 2020. GHG emissions from vehicle fuel use are projected to increase annually from 2015-2017 however the replacement of vehicles in 2017 is expected to return levels to the 2012 baseline by 2018.

Council Strategy H6 - Continue to build public awareness and understanding of our shared responsibility for the environment and Performance Measures: H.PM5 Provincial regulations for treated drinking water; H.PM6 Treated wastewater; H.PM7 Single family daily consumption; H.PM8 Annual river water withdrawals; H.PM9 Total suspended solids, supports 2020 SD water quality/quantity targets.



Utilities & Environmental Protection - Strategies and Performance Measures for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:

UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

A well-run city
Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

Strategy Related to Council Outcome	Accountable BU
W2 Be as efficient and effective as possible, reducing costs and focusing on value-for-money.	ESM, UTIL, WRS
W3 Examine opportunities for alternative service delivery for competitiveness.	WRS
W5 Regularly collaborate and engage citizens to encourage participation in City decision-making, and better communicate the reasons for the decisions.	ESM, UTIL, WRS
W6 Effectively manage The City's inventory of public assets, optimizing limited resources to balance growth and maintenance requirements.	ESM, UTIL, WRS
W7 Continue to transform the organization to be more citizen-focused in its approach and delivery of service.	ESM, UTIL, WRS
W8 Increase collaboration across the organization, including alignment of budgets with service delivery to achieve City priorities.	ESM, UTIL, WRS
W9 Strive to be an employer of choice with a focus on addressing The City's aging workforce.	ESM, UTIL, WRS

Performance Measures Related to Council Outcome	2012 Actual	2013 Actual	2014 Estimated	2015 Target	2016 Target	2017 Target	2018 Target
W.PM1 Per cent of water, wastewater and drainage systems assessed to be in fair or better condition.	96%	95%	95%	95%	95%	95%	95%
W.PM2 Number of City-owned properties assessed for potential environmental risk and liability.	NA	NA	75	150	150	150	150
W.PM3 Annual operating and maintenance (O&M) cost of waste collection per household.	\$83	\$88	\$91	\$88	\$88	\$74	\$58
W.PM4 Annual operating and maintenance (O&M) cost of waste disposed at landfills per tonne.	\$38	\$39	\$40	\$40	\$44	\$47	\$60



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Performance Measures Related to Council Outcome	2012 Actual	2013 Actual	2014 Estimated	2015 Target	2016 Target	2017 Target	2018 Target
W.PM5 Annual water treatment and distribution operations and maintenance (O&M) cost per capita.	\$58	\$57	\$58	\$53	\$53	\$53	\$53
W.PM6 Annual wastewater collection and treatment operations and maintenance (O&M) cost per capita	\$52	\$53	\$58	\$60	\$61	\$63	\$69
W.PM7 Annual stormwater collection operations and maintenance cost per capita.	NA	NA	\$8	\$11	\$14	\$15	\$16
W.PM8 Total debt for water, wastewater and drainage utilities (billions).	\$1.6B	\$1.6B	\$1.8B	<\$2.3B	<\$2.3B	<\$2.3B	<\$2.3B
W.PM9 Calgarians' satisfaction with residential garbage collection.	94%	95%	93%	93%	93%	85%	90%
W.PM10 Calgarians' satisfaction with residential blue cart collection.	90%	90%	90%	90%	90%	90%	90%
W.PM11 Calgarians' satisfaction with drinking water quality.	95%	94%	90%	94%	94%	92%	92%
W.PM12 Per cent of customers that experience zero water service interruptions in the past year.	98%	98%	98%	96%	96%	96%	96%
W.PM13 Per cent of customers that experience zero wastewater service back-ups in the past year.	98%	97%	98%	98%	98%	98%	98%
W.PM14 UEP 311 service requests completed on time.	96%	98%	93%	90%	90%	90%	90%
W.PM15 UEP employees that know what is expected of them in providing excellent customer service.	78%	82%	75%	80%	80%	80%	80%

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Performance Measures Related to Council Outcome	2012 Actual	2013 Actual	2014 Estimated	2015 Target	2016 Target	2017 Target	2018 Target
W.PM16 Annual Total Recordable Injury Frequency (TRIF) throughout The Corporation.	9.1	9.5	9.5	9.2	9.1	8.9	8.8
W.PM17 Annual average number of days lost per Lost Time Claim (LTC) throughout The Corporation.	NA	20	20	20	20	19	19
W.PM18 Annual average number of days lost per Lost time Claim (LTC) throughout UEP.	NA	22	21	21	20	18	17
W.PM19 Annual Lost Time Claims frequency throughout The Corporation.	4.5	3.9	3.8	3.8	3.7	3.5	3.4
W.PM20 Annual Lost Time Claims frequency throughout UEP.	3.3	3.6	3.3	3.3	3.1	2.8	2.6
W.PM21 Number of assigned departmental workstations decreased.	NA	NA	NA	0	0	0	72

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Alignment of Strategies and Performance Measures to Long-Term Plans

Council Strategy W7 - Continue to transform the organization to be more citizen-focused in its approach and delivery of service is supported by UEP's departmental actions to implement a Customer Service Strategy in alignment with the Corporate Customer Service Framework. Performance Measures W.PM9, W.PM10, W.PM11, from the annual Citizen Satisfaction survey, will measure UEP's progress and ensure that Citizens continue to value the cores services that UEP provides like water quality, and garbage and recycling collection.

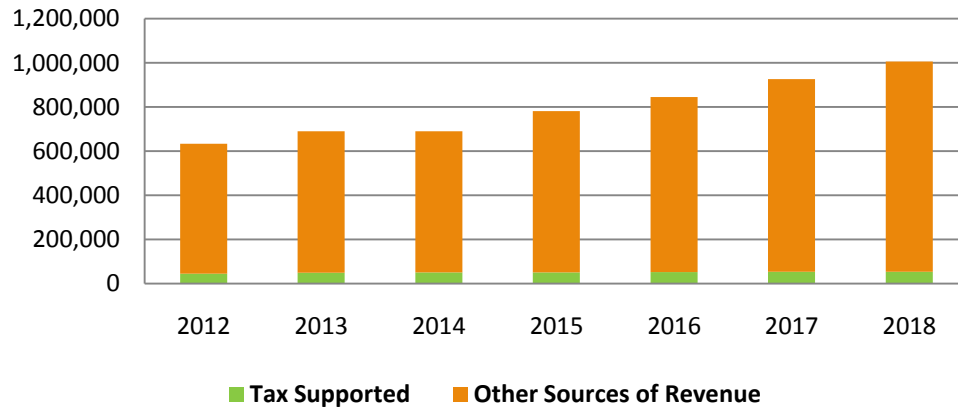
Council Strategy W9 - Strive to be an employer of choice with a focus on addressing The City's aging workforce and Performance Measure W.PM16 - Total Recordable Injury Frequency (TRIF) for The Corporation, measures progress on the achievement of the 2020 Sustainability Direction workforce target: By 2020, The City of Calgary's recordable injury rate is best in class for Canadian municipalities.



Utilities & Environmental Protection - Operating Budget Overview

Utilities & Environmental Protection							
Total Operating Budget (\$000s) (Totals may not add due to rounding)							
	2012 Actual	2013 Actual	2014 Total Budget (as of June 30)	2015 Budget Total	2016 Budget Total	2017 Budget Total	2018 Budget Total
Expenditures	664,805	729,378	727,040	825,336	891,057	978,476	1,063,786
Recoveries	(32,254)	(39,937)	(36,914)	(44,310)	(45,796)	(51,713)	(58,451)
Revenue	(587,539)	(640,739)	(640,319)	(731,363)	(794,221)	(874,253)	(952,318)
Net	45,012	48,703	49,807	49,662	51,040	52,511	53,017
FTEs	1,819.6	1,854.1	1,884.1	1,942.1	1,955.1	2,010.1	2,015.1

**Utilities & Environmental Protection
Funding of Operating Expenditures (Net of Recoveries)
(\$000s)**



Operating Budget Highlights

Environmental & Safety Management's operating budget supports community and Corporate environmental stewardship and safety performance, and is funded through tax support. For 2015-2018, service levels will be maintained through increased efficiencies and by using a risk-based approach to work priorities.

Waste & Recycling Services provides waste management services and is funded through a combination of fees and property taxes. For 2015-2018, accommodating growth will be a challenge and WRS will continue to pursue operating efficiencies within existing collection programs to provide services to a growing city.

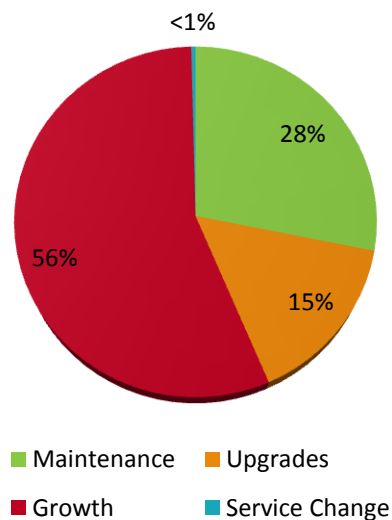
The Utilities provide water, wastewater and drainage services and are supported through utility rates and receive no support from property taxes. The revenue in the Utilities' operating budget provides funding for all operating and capital budget expenses as well as franchise fees and return on equity (ROE) payments to The City. The operating budget reflects the costs of meeting stringent regulatory requirements and supporting the infrastructure needs of a growing city. The Utilities will continue efforts to identify and action efficiencies and implement the findings from the Zero-Based Review.

Utilities & Environmental Protection - Capital Budget Overview

Utilities & Environmental Protection							
Total Capital Budget (\$000s) (Totals may not add due to rounding)							
	2014	2015	2016	2017	2018	*2019+	Total (2015-*2019+)
Previously-Approved Budget (as at 2014 June 30)	566,198	328,380	153,516	26,392	11,190		519,478
Breakdown of New Budget Requests							
Maintenance/Replacement		76,863	120,972	153,974	96,362	79,336	527,507
Upgrades		46,700	65,555	84,717	63,080	28,532	288,584
Growth		26,178	206,649	277,244	199,549	339,223	1,048,843
Service Change		(33,067)	12,577	26,581	1,284	0	7,375
Total New Budget Requests		116,674	405,753	542,516	360,275	447,091	1,872,309
Total Capital Budget	566,198	445,054	559,269	568,908	371,465	447,091	2,391,787

*2019+ includes projects which start within the 2015 - 2018 cycle and which are completed in years beyond 2018.

**Utilities & Environmental Protection
New Capital Budget Requests by Project Type
(2015-*2019+)
Total \$1,872 Million**



Maintenance/Replacement - WRS' Infrastructure Investment Plan (WRIP) and Utilities' Water Infrastructure Investment Plan (WIIP) identify requirements to maintain, protect and extend the life of infrastructure. For 2015-2018, 28 to 43 per cent of capital budgets are allocated to maintenance, supporting the Council Strategy of effectively managing The City's inventory of public assets.

Upgrades - Upgrades for 2015-2018 include: ESM investments in environmental and technology programs; WRS investments in Waste Management Facilities including landfill remediation and infrastructure upgrades; Utilities investments in flood resilient infrastructure, increases in sanitary upgrades and the Community Drainage Improvements (CDI) program. The upgrades support Council Priorities of a city of inspiring neighbourhoods, a healthy and green city and a well-run city.

Growth - To meet the infrastructure needs of a growing city, Utilities investments include maintaining a supply of serviced land, ensuring treatment capacity and expanding/extending pipe networks supporting the Council Strategy of managing and supporting growth.

Service Change - In WRS, investments are required to provide high quality waste and recycling services to citizens. Investments in the organics and biosolids composting facility and program infrastructure are required to implement the Green Cart Program.

Environmental & Safety Management

UEP: Environmental & Safety Management - Overview

Environmental & Safety Management (ESM) takes a risk-based approach to providing leadership to City business units that ensures environmental stewardship, and continuously improves The City's occupational health and safety performance.

ESM champions initiatives in both City operations and within the community, to adopt sustainable behaviours, conserve energy, reduce emissions and reduce waste. ESM also assesses and manages the risk associated with City-owned contaminated sites to protect public health and demonstrate leadership in brownfield redevelopment.

Through its safety services, ESM supports all departments to improve safety performance by focusing on industry-wide benchmarking, understanding the causes of incidents through reporting and investigation, and investing in training.

ESM develops systems that track, audit and report on The City's environmental and safety targets, and forecasts issues and opportunities that may put The City at risk. Strategies are then developed to manage those risks in partnership with business units across the Corporation.

Environmental Programs & Services (EPS)

Environmental Programs & Services works to improve The City's environmental performance, manages corporate risks and liabilities related to contaminated sites, and enables citizens to reduce their environmental impact to air quality, energy use and through reducing greenhouse gas emissions.

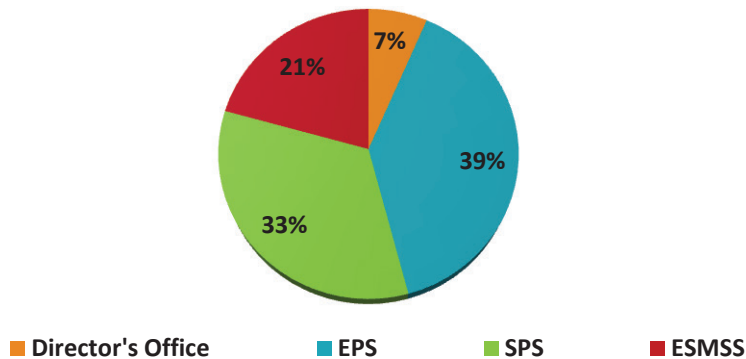
Safety Programs & Services (SPS)

Safety Programs & Services promotes employee safety in all City operations in accordance with legislative requirements and standards.

Strategic Services (ESMSS)

Strategic Services supports The City's environmental and safety commitments by planning, budgeting, assessing risk, auditing and reporting on progress.

**Environmental & Safety Management
Gross Operating Expenditure by Line of Service
(2015-2018)**



Values may not sum to 100%, due to rounding.

UEP: Environmental & Safety Management - Overview

Trends

Calgarians are accepting greener modes of transportation such as shared vehicles and bicycles, and walking more by living closer to where they work and shop. While community greenhouse gas levels have increased, this trend toward citizens making greener lifestyle choices is expected to have a positive impact on community greenhouse gas levels. Similarly, solar and other clean energy options are becoming more affordable and readily available. These observable trends help shape programs and approaches to ESM's community initiatives and programs. A development trend towards a more compact urban form, through the Municipal Development Plan (MDP) and Transit Oriented Development (TOD) Framework, is creating an increased interest in brownfield (land underutilized due to environmental factors) redevelopment options. A continued trend towards transparency and accountability surrounding environment, health and safety will result in more detailed approaches to monitoring and reporting.

The profile of safety across The Corporation has increased throughout the current business cycle, creating momentum and a directive to make improvements in a number of key areas, including proactive safety risk management with a focus on areas of high risk.

Continuing with the trend of improving safety across The Corporation, the Corporate Safety Strategy (CSS) will drive significant change in safety management through to 2018. The CSS will guide safety performance in five strategic result areas: safety culture; leadership; governance; programs and services; and measurement and evaluation. ESM will work with business units to develop prioritized annual safety work plans to create alignment and line of sight from the business unit, back to the CSS and the accompanying Safety Strategic Action Plan.

ESM will lead the development of a comprehensive Contractor Safety Management Program that will address safety requirements and expectations throughout the entire process of contractor acquisition, contract execution and completion. It will provide guidance, tools, and support, to City of Calgary employees responsible for oversight of various types of contractors.

Long-Term Plans

ESM's initiatives are guided by sustainability targets to reduce greenhouse gases by 20 per cent by 2020, and 80 per cent by 2050. This direction comes from imagineCALGARY and the 2020 Sustainability Direction. ESM is working to reach these targets through The Corporate and Community Greenhouse Gas Reduction Plans, and by supporting the Corporate Energy Strategy. While community greenhouse gas emissions are increasing, there is an opportunity to build on positive trends identified in the community.

The City will lead by example by shifting operational vehicle use away from gasoline and diesel, and working with operational areas to identify and address environmental risks, and maximize new opportunities to reduce the environmental impact.

The CSS and Safety Strategic Action Plan create the framework for a long-term safety plan with strong safety risk management which will guide leadership and the implementation of safety programs and services. The initiative is also guided by 2020 Sustainability Direction targets to become the best in class for municipalities in regards to safety.

UEP: Environmental & Safety Management - Overview

Citizen Engagement

Citizen engagement helps ESM shape community initiatives and programs that enable citizens to reduce their environmental impact. Citizen engagement revealed that responsible use of water and energy ranked high among their priorities, along with evaluating new energy sources like solar and wind.

Citizens also commented that The City should be reducing emissions of CO₂ from vehicles, and implementing policies to reduce pollution in Calgary. The City of Calgary has a number of programs to reduce fuel consumption through fuel-efficient driving practices, conducting trials of new technologies and fuel types (i.e. compressed natural gas and renewable diesel), and right-sizing vehicles. This results in less impact to air quality and reduced green house gas emissions. The City continues to support the Calgary Region Airshed Zone (CRAZ) and their efforts to reduce emissions of fine particulate matter and ozone in Calgary and area.

In addition, the results of imagineCALGARY's environmental summit revealed greenhouse gas reduction as a priority followed by integrated planning and increasing citizen connections to the natural environment.

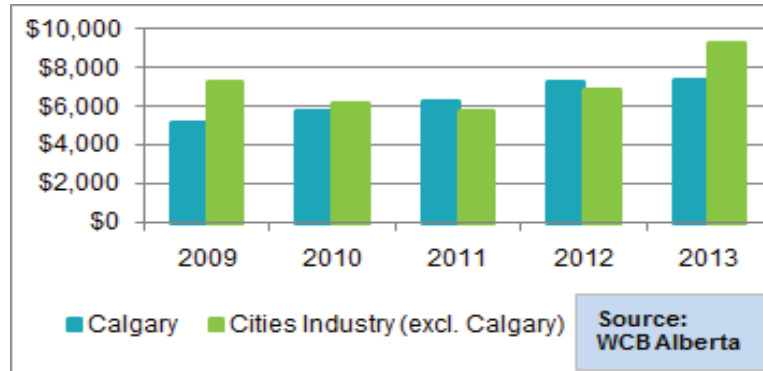
Council Priorities

ESM is an integral contributor to the Council Priority of a healthy and green city. ESM enables The City and citizens to make environmental choices that reduce energy consumption and greenhouse gases, in order to meet Council-set targets and to reduce contributions to climate change. ESM contributes to inspiring neighbourhoods by ensuring brownfield sites are improved; Calgary's air quality remains high; and contaminated sites are assessed and managed to protect public safety. In a well-run city the health and safety of employees is protected. This includes identifying and addressing environmental, health and safety

risks; meeting or exceeding safety, workplace and environmental legislation and standards in operations and planning; and implementing corporate emergency response plans. In addition, ESM governs the safety and environmental auditing that ensures adherence to rigorous management systems, conservation of resources, environmental protection, strategic alignment of goals and business planning.

UEP: Environmental & Safety Management - Benchmarking

Average Cost Per Lost Time Claim



The Average Cost per Lost Time Claim benchmark is a comparison of The City of Calgary's costs with that of 29 other Alberta organizations in the same industry group monitored by the Workers' Compensation Board (WCB).

Learning and Best Practices

The increased focus by The City on managing work-related injuries that result in time away from the job has had a positive effect on lowering the cost of lost time claims. Wage replacement is the largest component of this cost, so quickly and safely returning a worker to the job has a significant impact on the cost. The City is improving its process to identify work opportunities when an injured worker temporarily cannot fulfill their regular job duties.

Improvement Initiatives & Action Plan 2015-2018

Actions will be targeted at high risk operational business units based on trends identified through reporting. Beyond reducing the average cost of work-related lost time claims, The City's objective is to prevent work-related injuries from occurring.

UEP: Environmental & Safety Management - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:
 UEP supports the infrastructure needs of a growing city and enhances The City's capacity to prepare and respond to natural disasters.

A city of inspiring neighbourhoods
 Every Calgarian lives in a safe, mixed and just neighbourhood,
 and has the opportunity to participate in civic life.

Strategy Related to Council Outcome	Business Unit Action Related to Strategy	Accountable Service
N3 Enhance The City's capacity and resiliency to prepare for and respond to pandemics, natural disasters and emergency situations.	N3.1 Implement the Corporate Emergency Response Plan program to mitigate risk and minimize business disruption.	ESMSS
	N3.2 Develop and implement a comprehensive business continuity program to address key risks.	EPS, ESMSS, SPS
	N3.3 Address oil and gas matters in a coordinated, informed and consistent manner in order to protect public safety, the environment and The City's interests.	EPS
N6 Manage and promote growth to achieve the best possible social, environmental and economic outcomes within financial capacities.	N6.1 Support The City's South Saskatchewan Regional Plan strategy to support regional sustainability.	ESMSS
	N6.2 Support a growing city in managing environmental needs, to achieve the long-term vision of the MDP and CTP.	EPS



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N9 Provide great public spaces and public realm improvements across the city to foster opportunity for well used public spaces and places for citizen connections and urban vitality.

N9.1 Develop processes to facilitate returning City-owned brownfield sites to productive use in order to support urban vitality and environmental protection.

EPS

N9.2 Introduce a strategic approach to diverting waste from the public realm to support urban vitality.

ESMSS



UEP: Environmental & Safety Management - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:

UEP works with the community, the region and The Corporation to achieve air, land, and water goals to help conserve, protect and enhance the environment.

A healthy and green city
We steward our air, land, and water while encouraging healthy lifestyles for all Calgarians.

Strategy Related to Council Outcome	Business Unit Action Related to Strategy	Accountable Service
H2 Encourage a broader range of innovative and clean energy technologies.	H2.1 Design and deliver programs to engage the community to advance the goal of reducing community greenhouse gases.	EPS
	H2.2 Identify partnership and funding opportunities for energy efficiency and air quality-related initiatives throughout the community.	EPS
H3 Manage the interrelationships between flood protection, water quality and quantity, and land use.	H3.1 Collaborate with partners in the development of climate change models for the region to gain a broader perspective.	ESMSS
	H3.2 Develop a comprehensive climate adaptation plan and implementation tools to reduce future impacts.	ESMSS
H6 Continue to build public awareness and understanding of our shared responsibility to conserve and protect the environment.	H6.1 Assume a leadership role in educating and engaging the public to create awareness of links between energy consumption and GHGs, air quality, and climate change.	EPS



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H6 Continue to build public awareness and understanding of our shared responsibility to conserve and protect the environment.

H6.2 Promote brownfield redevelopment achievements to increase public awareness of improved urban vitality and environmental conditions within the city.

EPS

H10 Lead by example and manage regulatory risks to protect public health and the environment.

H10.1 Minimize the environmental impacts from City operations and capital projects, showcasing innovative and practical solutions to show leadership.

EPS, ESMSS, SPS

H10.2 Promote the implementation of the Industrial, Commercial & Institutional Waste Diversion Strategy as a Corporation to lead by example.

EPS

H10.3 Reduce GHG emissions from Corporate sources to be an example for other corporations and municipalities.

EPS



UEP: Environmental & Safety Management - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:
 UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

A well-run city
 Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

Strategy Related to Council Outcome	Business Unit Action Related to Strategy	Accountable Service
W2 Be as efficient and effective as possible, reducing costs and focusing on value-for-money.	W2.1 Continually improve on plans and practices to manage financial health.	EPS, ESMSS, SPS
	W2.2 Leverage tools and technology to support operations and realize efficiencies.	EPS, ESMSS, SPS
	W2.3 Measure, benchmark and report our performance to drive continuous improvement and support decision making.	EPS, ESMSS, SPS
	W2.4 Adopt flexible work options that results in reducing assigned workstations in order to optimize administrative spaces.	EPS, ESMSS, SPS
	W2.5 Participate in a Zero-Based Review in order to realize improvements to service efficiency and effectiveness.	EPS, ESMSS, SPS



For Council Approval

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Utilities & Environmental Protection Commitment:
 UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

W5 Regularly collaborate and engage citizens to encourage participation in City decision-making, and better communicate the reasons for the decisions.

W5.1 Understand citizen expectation of The City's leadership on the environment to inform the design of programs.

EPS

W5.2 Integrate feedback from customers and stakeholders to drive programs and service improvements and enable two way communications.

EPS, ESMSS, SPS

W6 Effectively manage The City's inventory of public assets, optimizing limited resources to balance growth and maintenance requirements.

W6.1 Assess The Corporation's risks and liabilities related to contaminated sites to inform appropriate management practices.

EPS

W6.2 Use tools such as management systems and auditing to minimize environmental, health and safety (EHS) risks.

EPS, ESMSS, SPS

W7 Continue to transform the organization to be more citizen-focused in its approach and delivery of service.

W7.1 Support the implementation of a Customer Service strategy in alignment with the Corporate Customer Service framework.

EPS, ESMSS, SPS

W7.2 Work with citizens and stakeholders to provide efficient and effective service.

EPS, ESMSS, SPS



UEP: Environmental & Safety Management - Actions for Council Approval

For Council Approval

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Utilities & Environmental Protection Commitment:

UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

W8 Increase collaboration across the organization, including alignment of budgets with service delivery to achieve City priorities.

W8.1 Ensure effective cross departmental coordination for improved service delivery.

EPS, ESMSS, SPS

W8.2 Collaborate across the organization to deliver risk based programs and services that align with budgets and resources.

EPS, ESMSS, SPS

W9 Strive to be an employer of choice with a focus on addressing The City's aging workforce.

W9.1 Enable a flexible and adaptable workforce to support achievement of business goals.

EPS, ESMSS, SPS

W9.2 Foster a workplace culture where employees feel supported and see how they contribute to achieving business goals.

EPS, ESMSS, SPS

W9.3 Strengthen leadership effectiveness.

EPS, ESMSS, SPS

W9.4 Lead The Corporation in the implementation of the Corporate Safety Strategy to demonstrate a commitment to the safety of all employees.

SPS



UEP: Environmental & Safety Management - Actions for Council Approval

For Council Approval

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Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

W9 Strive to be an employer of choice with a focus on addressing The City's aging workforce.

W9.5 Implement a Contractor Safety Management Program to mitigate risk to the Corporation.

SPS

W9.6 Prioritize occupational health, safety and wellness in operational planning and activities to foster a complete culture of engaged employee safety.

EPS, ESMSS, SPS



UEP: Environmental & Safety Management - Lines of Service

Breakdown of Operating Budget by Service (\$000) (Totals may not add due to rounding)															
	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
Director's Office	1,252	905	2.0	1,003	276	2.0	1,003	276	2.0	1,003	276	2.0	1,003	276	2.0
Environmental Programs & Services	5,769	4,341	26.6	5,924	4,305	26.6	5,984	4,365	26.6	6,082	4,464	26.6	6,078	4,460	26.6
Safety Programs & Services	4,521	2,840	30.0	4,837	2,798	31.0	5,036	2,992	31.0	5,245	3,196	31.0	5,347	3,298	31.0
Strategic Services	2,498	2,162	16.0	3,313	3,163	16.0	3,189	3,189	16.0	3,293	3,143	16.0	3,148	3,148	16.0
Total Business Unit	14,040	10,248	74.6	15,077	10,543	75.6	15,211	10,822	75.6	15,624	11,079	75.6	15,576	11,181	75.6

In 2015-2018, ESM's operating budget will increase by a total of \$1,083 thousand over four years (excluding one-time funding of \$150 thousand in 2014), of which \$687 thousand is to fulfil the negotiated union salary increases, and \$396 thousand is to support corporate safety requirements as a result of growth and legislated requirements. The number of FTEs will increase by one Safety Advisor to support capital projects within the Utilities business unit. There is no impact to ESM's operating budget as the cost of the FTE will be recovered from the Utilities.

ESM's operating budget is reflective of community and Corporate leadership in environmental stewardship and safety performance. ESM re-organized in 2013 to adapt to changing needs and requirements for service delivery for safety and the environment. All Safety Advisor positions were re-aligned from individual business units to ESM to

streamline information, training, support and collaboration to more effectively deliver safety services throughout The Corporation. During 2015-2018, ESM will increase The Corporation's safety capacities and resiliency including the implementation of comprehensive Emergency Response Plans. Environmental programs will focus on moving beyond pilot projects and fully implementing programs with internal business unit partners.

Accommodating increasing requests for services is a challenge across The Corporation. Though ESM will not be directly impacted by population growth, the internal customers that ESM serves will be. Throughout the 2015-2018 business cycle, ESM will continue to identify and implement opportunities to be more efficient and accommodate increased demands.

UEP: Environmental & Safety Management - Lines of Service

All \$ values are in Thousands (\$000)

Environmental Programs & Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	5,769	4,341	26.6	5,924	4,305	26.6	5,984	4,365	26.6	6,082	4,464	26.6	6,078	4,460	26.6

Environmental Programs & Services (EPS) contributes to the Council Priority of a healthy and green city through programs aimed at reducing greenhouse gas emissions and energy consumption. EPS builds programs and processes that promote "green technology", raise awareness of environmental stewardship and encourage citizens to reduce their environmental impact. Financial resources also help to create a city of inspiring neighbourhoods by supporting the clean-up and restoration of City-owned contaminated properties for future community benefit and urban vitality. EPS supports a growing city in managing environmental needs to achieve the long-term vision of the MDP and CTP.

In 2015-2018, EPS will continue to refine the focus of on-going initiatives. City business units will receive assistance to report financial liabilities associated with the management and remediation work of contaminated sites to comply with newly introduced public sector accounting standards. As well, EPS will focus on stabilizing Corporate greenhouse gas emissions from vehicle fuels while continuing to meet increased service needs. In addition, EPS will enhance land stewardship programs to address the potential environmental impacts of utility work on City-owned properties.

Safety Programs & Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	4,521	2,840	30.0	4,837	2,798	31.0	5,036	2,992	31.0	5,245	3,196	31.0	5,347	3,298	31.0

Safety Programs & Services (SPS) supports a well-run city through the protection of the health and safety of employees. SPS leads the Corporate Safety Strategy and champions proactive initiatives aimed at preventing work related injury and illness. Additionally, SPS supports compliance with Occupational Health and Safety regulations by providing employee programming and meeting safety training standards. The Health, Safety and Wellness Reserve fund is used to supplement funding for innovative safety initiatives and service improvements.

SPS provides all City departments with health and safety support and advice on policy, strategy and leadership. This support is provided through programs and services that assist management and employees

to understand and manage hazards and risks associated with its business operations. SPS recommends strategies to improve overall health and safety performance and reduce work-related injuries and illnesses in the workplace. An additional Safety Advisor FTE recovered from Utilities will support UEP capital projects.

In addition to safety support directly in the business units, SPS provides risk-based, corporate health and safety programs such as ergonomics, noise management and occupational hygiene. These programs ensure that all employees have access to these services consistently across The City.

Strategic Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	2,498	2,162	16.0	3,313	3,163	16.0	3,189	3,189	16.0	3,293	3,143	16.0	3,148	3,148	16.0

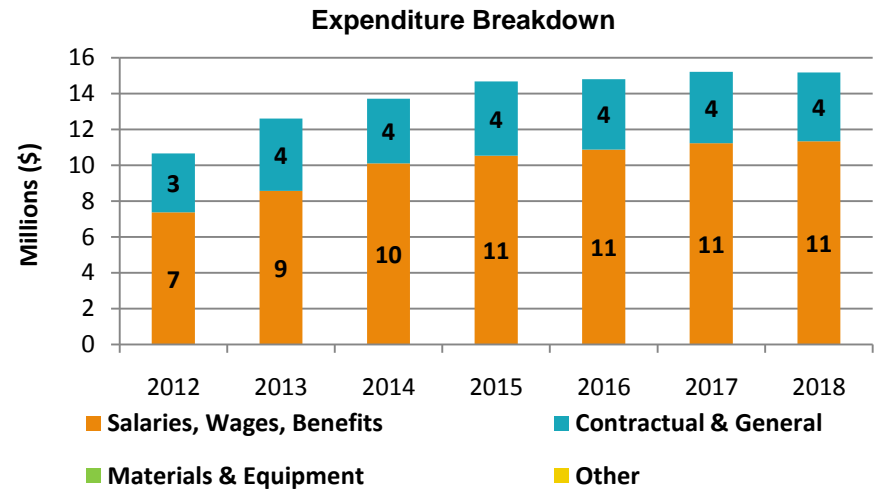
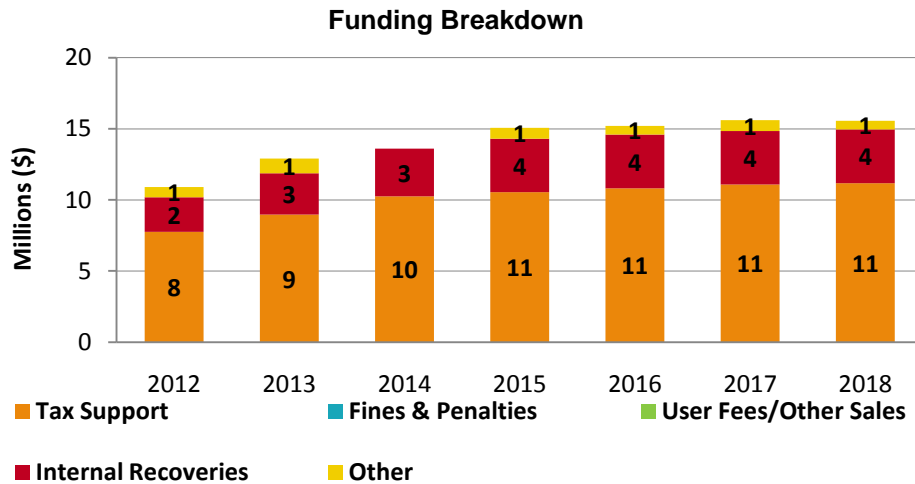
Strategic Services (ESMSS) supports the Council Priority of a well-run city by ensuring adherence to increasingly rigorous environmental and safety standards. ESMSS provides expertise to support auditing; environmental and safety performance tracking; and governance and development of new frameworks to meet changing regulations. Development of climate change models for the region, including the South Saskatchewan Regional plan, supports a broader perspective and long-term sustainability.

Due to increasingly stringent environmental and safety regulatory

requirements, ESMSS has increased its oversight to ensure more consistent environmental, health and safety controls to reduce risk in The City's operational activities. ESMSS works across business units and departments to address gaps in legislated activities such as emergency response planning, worker injury reporting and recording processes and tools. This requires coordination and leadership, and working with City operational areas to develop and implement programs to ensure The City remains a leader in protecting its employees and the environment.

UEP: Environmental & Safety Management - Breakdown of the Operating Budget

Totals may not match due to rounding



Funding Breakdown - ESM is funded through tax support for approximately 70 per cent of the operating budget. External sources of revenue are obtained from providing access to environmental site data through the EnviroSite system, and from processing Licenses of Occupation(LOC) for others to access City-owned land for purposes of environmental investigation and remediation. Recoveries are received for services provided to internal clients primarily for Safety Advisor positions.

Expenditures - Approximately 70 per cent of ESM's expenditures are to support staff (salaries, wages, and benefits). Contractors and consultants are used to provide specialized expertise when needed, particularly in the area of contaminated site evaluation and remediation.

ESM has maintained relatively constant funding and expenditure levels, and through the previous two business cycles, has balanced the budget through increased efficiencies and a risk-based approach to work priorities. This resulted in a reduction of 6.4 FTEs from 2009 to 2014. In late 2013, the Safety Advisor position and supporting resources across The City were moved from other business units into ESM's Safety Programs & Services, resulting in a net increase of 13 FTEs, and a net budget of \$1.274 million.

UEP: Environmental & Safety Management - Breakdown of the Net Operating Budget*Totals may not add due to rounding*

Breakdown of Net Operating Budget Changes (\$000s)	2015	2016	2017	2018
Previous Year's Budget	10,248	10,543	10,822	11,079
Less: Previous Year One Time	(150)	(150)	(100)	0
Base	10,098	10,393	10,722	11,079
Efficiency Gains	(190)	(29)	(1)	(4)
Inflation	201	230	261	4
Service and Budget Increase	184	100	98	102
Operating Impact of Previously Approved Capital	67	0	0	0
Operating Impact of New Capital (Incremental)	33	27	0	0
Re-alignments	0	0	0	0
One Time	150	100	0	0
Total Budget Change	445	429	357	102
Total Budget	10,543	10,822	11,079	11,181

ESM is not impacted directly by growth of population, but the need for safety and environmental services increases accordingly with the growth of business units providing direct service to Calgarians.

The efficiency gain of \$190 thousand in 2015 is primarily from reducing budgeted internal charges that did not reflect actual service levels. The inflationary increases for 2015-2017 consist of both the negotiated union salary increases and the annual increases to security and insurance costs. The 2018 value reflects only the security and insurance costs.

The budget reflects the operating costs of capital projects associated with licensing updates, systems upgrades, safety equipment and

environmental monitoring systems. The operating impacts also include the maintenance of a new program associated with previously approved capital.

The operating budget for service growth needs will be absorbed within ESM's current budget allocation, primarily by reprioritizing to ensure Council Priorities are resourced appropriately, and seeking additional efficiencies within ESM teams by consolidating workplans and projects. Program growth and community programming will be offered by increasing recoveries and revenues through external sponsorship, and by pursuing one-time funding for special projects/programs.

TCA Depreciation (\$000s) - Environmental & Safety Management			
2015	2016	2017	2018
554	601	509	587

TCA Depreciation content is presented for information only.

UEP: Environmental & Safety Management - Operating Budget for Council Approval

For Council Approval

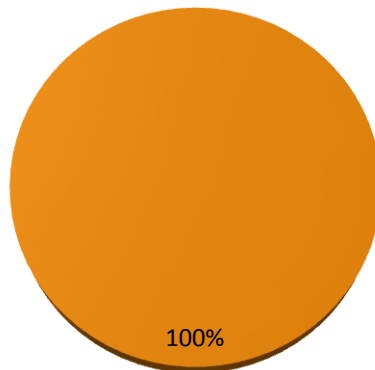
Environmental & Safety Management															
Total Operating Budget (\$000s) for Approval (Totals may not match due to rounding)															
	2012 Actual	2013 Actual	2014 Total Budget (as of June 30)	2015 Budget			2016 Budget			2017 Budget			2018 Budget		
				Base	One- Time	Total	Base	One- Time	Total	Base	One- Time	Total	Base	One- Time	Total
Expenditures	10,913	12,931	14,040	14,927	150	15,077	15,111	100	15,211	15,624	0	15,624	15,576	0	15,576
Recoveries	(2,448)	(2,916)	(3,347)	(3,764)	0	(3,764)	(3,769)	0	(3,769)	(3,774)	0	(3,774)	(3,774)	0	(3,774)
Revenue	(719)	(1,051)	(445)	(770)	0	(770)	(620)	0	(620)	(770)	0	(770)	(620)	0	(620)
Net	7,746	8,964	10,248	10,393	150	10,543	10,722	100	10,822	11,079	0	11,079	11,181	0	11,181
FTEs	62.6	76.6	74.6	75.6	0.0	75.6	75.6	0.0	75.6	75.6	0.0	75.6	75.6	0.0	75.6

UEP: Environmental & Safety Management - Capital Budget Overview

Environmental & Safety Management Capital Budget (\$000s) Overview (Totals may not match due to rounding)						
	2015	2016	2017	2018	*2019+	Total
Previously-Approved Budget (as at 2014 June 30)	0	0	0	0	0	0
Total New Capital Budget Requests	714	1,061	1,116	1,507	0	4,398
Total Business Unit Capital Budget	714	1,061	1,116	1,507	0	4,398

*2019+ represents projects which start within the 2015-2018 cycle and which are completed in years beyond 2018.

**Environmental & Safety Management
New Capital Budget Requests by Project Type
(2015-*2019+)
Total \$4 Million**



■ Upgrades

Upgrades - Both the Environmental and Technology Capital Programs of ESM are of the Upgrade Project Type. The majority of the planned spending is to improve upon the assets associated with the Emergency Response Program (ERP) and to purchase new assets to improve The City's fleet and property assets.

Almost half of the Capital budget of ESM is aligned with the Council Priority a city of inspiring neighbourhoods, largely from the ERP projects to enhance the ability to respond to emergency situations. Three other capital projects align with this Council Priority including strategies to improve public spaces and manage growth to support social, environmental and economic outcomes through upgrades to City properties through Green Office initiatives, community centre solar panel projects, and actions to facilitate the return of Brownfield properties to productive use.

The remainder of ESM's Capital projects are aligned and support Council Priorities of a well-run city and a healthy and green city.

UEP: Environmental & Safety Management - Capital Budget Overview

Funding for Capital Projects (Totals may not match due to rounding)	2015	2016	2017	2018	*2019+	Total 2015-*2019+
<i>Pay-As-You-Go</i>	714	1,061	1,116	1,507	0	4,398
Total Funding	714	1,061	1,116	1,507	0	4,398
<hr/>						
Total Operating Impacts of Capital (Cumulative)						
2015-2018 Operating Budget	33	60	60	60	N/A	
2019 and beyond up to 2024 Operating Plan	N/A	N/A	N/A	N/A	360	

*2019+ represents projects which start within the 2015-2018 cycle and are completed in years beyond 2018.

Capital Budget Listing (by Program - Project) (\$000s)

Program-Project	Project Description	Type	Cat	Prev. Approved Budget up to 2014	Prev. Approved Budget for future years	New Budget Request	2015	2016	2017	2018	*2019+	2015-*2019+	Growth Area
815-12F	Technology	U	C			1,863	489	466	316	592	-	1,863	
815-14F	Environmental Programs	U	C			2,535	225	595	800	915		2,535	
Total Program 815 : Environmental Liabilities & Remediation				-	-	4,398	714	1,061	1,116	1,507	-	4,398	
Operating impact of capital of Program 815													
	2015-2018 Operating Budget		O1				33	60	60	60	N/A	213	
	2019 and beyond Operating Plan		O2				N/A	N/A	N/A	N/A	360	360	
				-	-	4,398	714	1,061	1,116	1,507	-	4,398	

Note:

Type: M=Maintenance/Replacement, U=Upgrade, G=Growth, S=Service Change

Category: A=Project in Progress, C=New Project, O1=2015-2018 Operating Cost, O2=2019 and beyond Operating Cost

Budgets and/or operating impact of capital beyond 2019 are included in 2019 and are detailed in the Explanation section

Explanation of Budget Requests

Program 815 : Environmental Liabilities & Remediation

Project 815-12F: Technology

New budget request of \$1.863 million, with funding from Pay-As-You-Go, with the majority of this Technology program aligned with the Council Priority of a city of inspiring neighbourhoods and the action plan strategy to respond to emergency situations, pandemics, and natural disasters. In fact, the projects are directly aligned with ESM's action to upgrade the Corporate Emergency Response Plan program. The majority of the other projects in the Technology program are aligned with the Council Priority of a well-run city and strategies to effectively manage the City's inventory of public assets, strive to be an employer of choice with a focus on addressing The City's aging workforce, and the strategy to increase collaboration across the organization, including alignment of budgets with service delivery to achieve Council Priorities. These Technology projects support ESM's actions to lead the Corporation in the implementation of the Corporate Safety Strategy, and to use tools such as management systems and auditing to minimize environmental, health and safety (EHS) risks.

Operating impact of capital: None

Project 815-14F: Environmental Programs

New budget request of \$2.535 million, with funding from Pay-As-You-Go, has the majority of the new Environmental Programs demand aligned with Council Priority a healthy and green city. These projects are likewise aligned with strategies that protect public health and the environment including a broader range of clean energy alternatives, the strategy to lead by example and manage regulatory risks to protect public health and the environment, and also the strategy to improve public spaces and manage growth to support social, environmental and economic outcomes. These capital projects are directly aligned with ESM actions to reduce community and Corporate greenhouse gas emissions, actions to minimize the environmental impacts from City operations and capital projects, and the action to promote the implementation of the ICI Waste Diversion Strategy.

Operating impact of capital: This program requires \$213 thousand in operating costs for the 2015 - 2018 budget cycle; operating costs of \$360 thousand in 2019 - 2024.

UEP: Environmental & Safety Management - Capital Budget for Council Approval

For Council Approval

Environmental & Safety Management							
Capital Budget (\$000s) for Approval (Totals may not match due to rounding)							
	2014	2015	2016	2017	2018	*2019+	Total (2015-*2019+)
Previously-Approved Budget (as at 2014 June 30)	2,703	0	0	0	0	0	0
Projects Requiring Approval							
<i>Program 815 : Environmental Liabilities & Remediation</i>		714	1,061	1,116	1,507	0	4,398
Total Projects Requiring Approval		714	1,061	1,116	1,507	0	4,398
Total Capital Budget	2,703	714	1,061	1,116	1,507	0	4,398

*2019+ represents projects which start within the 2015-2018 cycle and are completed in years beyond 2018.

Waste & Recycling Services

UEP: Waste & Recycling Services - Overview

Waste & Recycling Services (WRS) is responsible for The City's solid waste management services, which includes providing residential and commercial collection, managing active and inactive landfill sites and operating recycling, composting and other waste diversion programs. These operating and capital costs are funded through a combination of self-supporting fees and property taxes. WRS develops and implements strategies, programs and facilities that support progress towards the Council-approved goal of 80 per cent diversion of waste from City-run landfills by 2020 (80/20 by 2020). WRS also develops and delivers education programs to support citizens to reduce, reuse and recycle. In 2017, WRS will implement a Green Cart Program (single family residential organics) to collect organic material from single-family homes and deliver it to a City-owned composting facility that is privately designed, built and operated to handle food and yard waste, and biosolids.

Collection Services (WRCS)

Provide collection services for residential waste and recycling (black, blue and green cart service), some commercial waste, Community Recycling Depots, community clean-ups, and festivals and events.

Disposal & Processing Services (DPS)

Manage the operations of The City's three active waste management facilities as well as inactive landfills to protect public health and the environment.

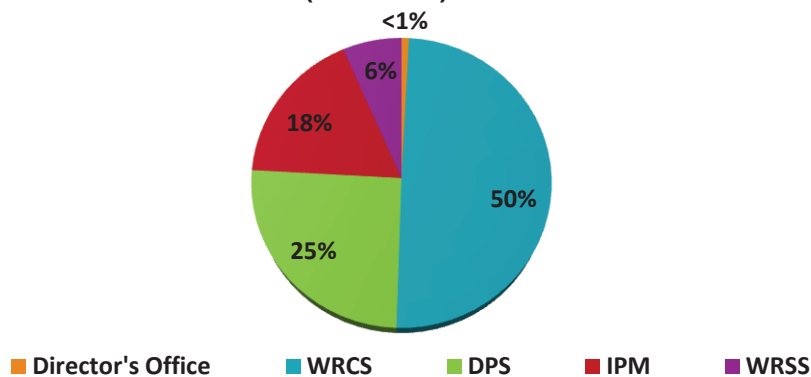
Infrastructure & Program Management (IPM)

Develop and manage waste diversion programs and provide infrastructure planning, project delivery and asset management.

Strategic Services (WRSS)

Provide strategic planning services to support maximum waste diversion in all sectors (single-family, multi-family, construction & demolition, and industrial, commercial & institutional).

Waste & Recycling Services
Gross Operating Expenditure by Line of Service
(2015-2018)



Values may not sum to 100%, due to rounding.

UEP: Waste & Recycling Services - Overview

Trends

The primary trends and strategic risks affecting Waste & Recycling Services (WRS) during 2015-2018 relate to city growth, inflationary pressures, regulatory requirements, workforce and customer service. Development of new housing has the largest impact on WRS' capacity to provide collection services. Depending on the pace and location of new housing, an additional collection vehicle is required for every 3,500 to 3,800 new homes for both blue and black cart collection. The costs of a vehicle's capital, maintenance, fuel and operator are all subject to inflationary and growth pressures which will impact WRS' operating budget requirement. WRS is facing increased costs to maintain and operate its fleet. Service level agreements and metrics are under review to identify areas to minimize inflationary pressures for 2015-2018. Environmental regulations have become more stringent in recent years, requiring investments to upgrade, monitor and maintain assets on waste management facilities. WRS is investing funds to maintain and reduce infrastructure gaps and manage the expanding customer base, while continuing to provide high quality service at affordable rates. Workforce trends suggest retirements will increase, leading to higher demand for qualified staff at all levels of the organization. WRS will use innovative recruitment and retention strategies to retain staff and continue providing high quality services to citizens.

WRS has considered strategic risks, trends, citizen engagement and industry research in the development of the 2015-2018 plan. These trends are being addressed to balance service delivery with customer expectations.

Long-Term Plans

In 2007, Council adopted the goal to divert 80 per cent of waste from City-run landfills by 2020 in support of the long-term vision of "Leading the community toward zero waste". The City's 80/20 by 2020 goal aligns with the objectives of the Municipal Development Plan (MDP) and the 2020 Sustainability Direction. In support of long-term goals, WRS continues to encourage residents to reduce, reuse and recycle through education and programs. WRS will measure waste collected per household in the 2015-2018 business cycle to gauge the effectiveness of residential programs. WRS will implement a Green Cart Program, a Multi-Family Recycling Strategy, and an Industrial, Commercial and Institutional (ICI) Waste Diversion Strategy and continue to work with the Construction and Demolition sector. WRS will measure waste landfilled per capita which is influenced by all sectors. WRS will continue to measure and report the waste diverted per capita from landfills through City of Calgary programs, including Blue Cart, Green Cart, Household Hazardous Waste drop-offs, community clean-ups, material sorting areas, leaf and pumpkin composting, electronics, biosolids composting and Christmas tree mulching. These programs help reduce waste to landfill and make progress toward the 2020 Sustainability Direction target, the MDP goals and the imagineCALGARY target.

UEP: Waste & Recycling Services - Overview

Citizen Engagement

WRS' actions are informed by ongoing citizen and stakeholder engagement. Engagement during the Action Plan process indicated that customers are very satisfied with blue and black cart collection services and City-operated recycling services. The introduction of a residential Green Cart Program in 2017 will address the Action Plan engagement results, which indicate that residential customers support a comprehensive composting program to divert food and yard waste. Stakeholder engagement in the Multi-Family and Industrial, Commercial and Institutional (ICI) sectors resulted in the approved strategies supported by private industry which balance cost effectiveness and flexibility. These strategies will pave the way for on-site separation and storage of recyclables, development of organics programs and eventual bans on divertible material. WRS also engaged waste management facility customers in 2012 and used the results to improve communication, facilities, and operations to achieve better customer service. WRS will continue to engage citizens and stakeholders and provide high quality customer service for new and existing programs throughout the 2015-2018 business cycle.

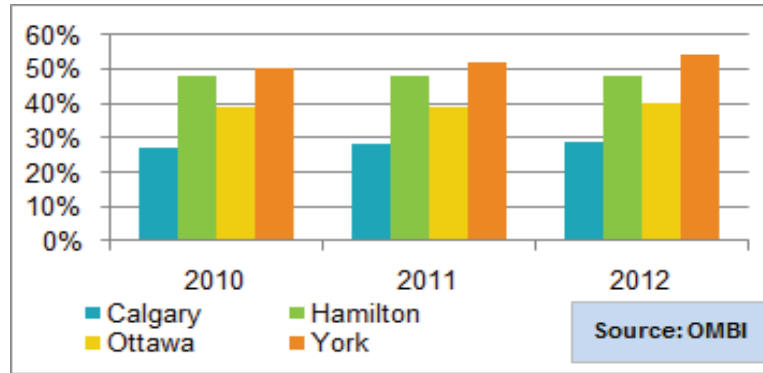
Council Priorities

WRS will lead the Council Strategy to implement the Green Cart Program, and Multi-Family Recycling Strategy as well as reduce ICI waste in City-run landfills. WRS will construct an organics and biosolids composting facility as a joint effort with Water Services & Water Resources to divert organic material from landfills, manage biosolids, and support the implementation of a Green Cart Program in 2017. WRS will also implement the Multi-Family Recycling Strategy in alignment with the Council Strategy, which will require multi-family buildings to have on-site recycling. The basis of this strategy is the amendment and implementation of the Waste and Recycling Bylaw 20M2001 that will ensure a minimum standard of recycling across the city. WRS will play

a role in providing communication, education, monitoring and stakeholder engagement to maximize the capture of recyclables from this sector. Similarly, WRS will implement the ICI Waste Diversion Strategy, which will include a comprehensive set of diversion tools for all materials in the ICI sector. Further amendments to the Waste and Recycling Bylaw 20M2001 are planned to maximize diversion of ICI waste materials including mandatory source separation, differential tipping fees and eventual material bans. WRS will understand the costs of doing business and look for further opportunities to be an efficient and effective waste management business in support of Council Priorities under a well-run city. WRS will ensure citizens are engaged in decisions that affect the services they receive. WRS will support the action to effectively manage The City's inventory of public assets by implementing an infrastructure investment plan and asset management plan. These will allow WRS to maintain assets, meet regulatory requirements, provide services and keep pace with the city's growth.

UEP: Waste & Recycling Services - Benchmarking

Per cent of Residential Solid Waste Diverted Away from Landfills



Compared to other major cities, Calgary diverts less waste than the 43 per cent average.

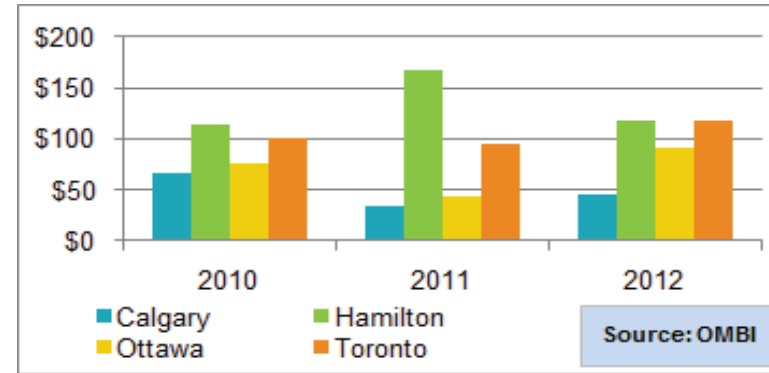
Learning and Best Practices

Calgary has implemented many best practices including blue cart recycling; education and outreach, Community Recycling Depots and material sorting areas at waste management facilities, which encourage diversion of electronics, metal and household hazardous waste. WRS investigated organics diversion in other municipalities and undertook a Green Cart pilot. Based on the results of pilot, Council approved the construction of a compost facility for residential food and yard waste, and biosolids, with implementation of a Green Cart Program in 2017. Residential organics diversion is a key component for Calgary to increase diversion rates.

Improvement Initiatives & Action Plan 2015-2018

WRS will continue to fund education and diversion programs and add resources for the implementation of a Green Cart Program. These actions will increase residential diversion rates for Calgary to levels similar to cities with organics diversion programs.

Total Cost for Solid Waste Disposal per Tonne



Costs in Calgary are increasing as anticipated due to the cumulative impacts of the decreasing volume of waste generated, increased diversion, compliance with increasingly stringent regulations, and increased service levels. Several factors may influence the variation in costs between comparable cities such as the method of disposal, cost of transporting waste and the complexity of operations.

Learning and Best Practices

Landfill efficiency and effectiveness has been improved through the right-sizing of equipment, use of hybrid bulldozers to reduce fuel, and new technologies to maximize landfill cell compaction and utilization. In response to increasing regulatory requirements and best practices, WRS has invested in infrastructure to recover leachate, capture landfill gas and manage stormwater.

Improvement Initiatives & Action Plan 2015-2018

WRS will survey customers to obtain feedback on ways to improve programs. WRS will also investigate ways to optimize the use of the three waste management facilities.

UEP: Waste & Recycling Services - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:

UEP supports the infrastructure needs of a growing city and enhances The City's capacity to prepare and respond to natural disasters.

A city of inspiring neighbourhoods
Every Calgarian lives in a safe, mixed and just neighbourhood,
and has the opportunity to participate in civic life.

Strategy Related to Council Outcome	Business Unit Action Related to Strategy	Accountable Service
N3 Enhance The City's capacity and resiliency to prepare for and respond to pandemics, natural disasters and emergency situations.	N3.1 Develop a comprehensive business continuity plan.	DPS, IPM, WRCS, WRSS
N9 Provide great public spaces and public realm improvements across the city to foster opportunity for well used public spaces and places for citizen connections and urban vitality.	N3.2 Continually improve existing emergency management program to manage risks.	DPS, IPM, WRCS, WRSS
	N9.1 Provide collection service for community clean-up events.	WRCS
	N9.2 Provide waste removal, recycling and organics recovery for city-wide events and festivals.	WRCS



UEP: Waste & Recycling Services - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:
 UEP works with the community, the region and The Corporation to achieve air, land, and water goals to help conserve, protect and enhance the environment.

A healthy and green city
 We steward our air, land, and water while encouraging healthy lifestyles for all Calgarians.

Strategy Related to Council Outcome	Business Unit Action Related to Strategy	Accountable Service
H1 Implement the green cart program and multi-family recycling strategy, and reduce industrial, commercial and institutional waste in our landfills.	H1.1 Implement a residential Green Cart Program.	IPM, WRCS
	H1.2 Design and construct a residential organics and biosolids composting facility to support 2017 implementation of a Green Cart Program.	IPM
	H1.3 Implement the Multi-Family Recycling Strategy.	DPS, IPM, WRCS, WRSS
	H1.4 Implement the Industrial, Commercial and Institutional Waste Diversion Strategy.	DPS, IPM, WRCS, WRSS
	H1.5 Develop and implement sector and material strategies to maximize diversion.	WRSS



UEP: Waste & Recycling Services - Actions for Council Approval

For Council Approval

A healthy and green city
We steward our air, land, and water while encouraging healthy lifestyles for all Calgarians.

Utilities & Environmental Protection Commitment:

UEP works with the community, the region and The Corporation to achieve air, land, and water goals to help conserve, protect and enhance the environment.

H6 Continue to build public awareness and understanding of our shared responsibility to conserve and protect the environment.

H6.1 Collaborate and create partnerships to achieve reduction and diversion outcomes.

DPS, IPM, WRCS, WRSS

H6.2 Manage and improve existing diversion programs to achieve 80/20 by 2020.

DPS, IPM, WRCS

H6.3 Deliver educational programs to foster behaviour change and enhance public awareness of resource management.

WRSS

H10 Lead by example and manage regulatory risks to protect public health and the environment.

H10.1 Operate Waste Management Facilities to ensure compliance with regulatory requirements.

DPS

H10.2 Mitigate the impacts of business on air, land and water.

DPS, IPM, WRCS, WRSS

H10.3 Support the corporate energy strategy through energy efficiency and review of generation opportunities.

DPS, IPM, WRCS, WRSS



UEP: Waste & Recycling Services - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:

UEP works with the community, the region and The Corporation to achieve air, land, and water goals to help conserve, protect and enhance the environment.

H10 Lead by example and manage regulatory risks to protect public health and the environment.

H10.4 Explore opportunities for expansion of alternative fuels for WRS fleet to reduce greenhouse gas (GHG) emissions.

DPS, WRCS

A healthy and green city
We steward our air, land, and water while encouraging healthy lifestyles for all Calgarians.

A prosperous city

A city of inspiring neighbourhoods

A city that moves

A healthy and green city

A well-run city

UEP: Waste & Recycling Services - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:

UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

A well-run city
Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

Strategy Related to Council Outcome	Business Unit Action Related to Strategy	Accountable Service
W2 Be as efficient and effective as possible, reducing costs and focusing on value-for-money.	W2.1 Continually improve on plans and practices to manage financial health.	DPS, IPM, WRCS, WRSS
	W2.2 Measure, benchmark and report performance to drive continuous improvement and support decision making.	DPS, IPM, WRCS, WRSS
	W2.3 Leverage tools and technology to support operations and realize efficiencies.	DPS, IPM, WRCS
	W2.4 Optimize utilization and improve availability of WRS fleet.	DPS, WRCS
	W2.5 Change residential garbage collection frequency from weekly to every two weeks with introduction of Green Cart collection.	WRCS
	W2.6 Utilize route design and collection service improvements to accommodate growth in new communities.	WRCS



UEP: Waste & Recycling Services - Actions for Council Approval

For Council Approval

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Utilities & Environmental Protection Commitment:

UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

<p>W2 Be as efficient and effective as possible, reducing costs and focusing on value-for-money.</p>	<p>W2.7 Complete a cost of service study to assess the rates and fees allocated to each customer group.</p>	<p>WRSS</p>
<p>W3 Examine opportunities for alternative service delivery for competitiveness.</p>	<p>W2.8 Adopt flexible work options that results in reducing assigned workstations in order to optimize administrative spaces.</p>	<p>DPS, IPM, WRCS, WRSS</p>
<p>W5 Regularly collaborate and engage citizens to encourage participation in City decision-making, and better communicate the reasons for the decisions.</p>	<p>W3.1 Implement the public-private-partnership (P3) model for delivery and operation of organics and biosolids composting facility.</p>	<p>IPM</p>
<p>W5 Regularly collaborate and engage citizens to encourage participation in City decision-making, and better communicate the reasons for the decisions.</p>	<p>W3.2 Implement outcomes of the collection service review.</p>	<p>WRCS, WRSS</p>
<p>W5 Regularly collaborate and engage citizens to encourage participation in City decision-making, and better communicate the reasons for the decisions.</p>	<p>W5.1 Integrate feedback from customers and stakeholders to drive programs and service improvements and enable two-way communication.</p>	<p>DPS, IPM, WRCS, WRSS</p>
<p>W5 Regularly collaborate and engage citizens to encourage participation in City decision-making, and better communicate the reasons for the decisions.</p>	<p>W5.2 Continue to engage citizens to understand the value of WRS services to inform decision making.</p>	<p>DPS, IPM, WRCS, WRSS</p>



UEP: Waste & Recycling Services - Actions for Council Approval

For Council Approval

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Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

Utilities & Environmental Protection Commitment:

UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

W6 Effectively manage The City's inventory of public assets, optimizing limited resources to balance growth and maintenance requirements.

W6.1 Implement a strategic, long-range infrastructure investment plan which continues progress toward 80 per cent diversion of waste from City-run landfills by 2020.

DPS, IPM

W6.2 Develop and implement asset management plans to maintain assets, meet regulatory requirements, provide services and keep pace with growth.

DPS, IPM

W7 Continue to transform the organization to be more citizen-focused in its approach and delivery of service.

W7.1 Support the implementation of a Customer Service Strategy in alignment with the Corporate Customer Service Framework.

DPS, IPM, WRCS, WRSS

W7.2 Empower staff to continue to deliver excellent customer service as part of The City's culture.

DPS, IPM, WRCS, WRSS

W8 Increase collaboration across the organization, including alignment of budgets with service delivery to achieve City priorities.

W8.1 Ensure effective collaboration of capital projects across all departments.

DPS, IPM, WRCS, WRSS

W8.2 Ensure effective collaboration of operations across all departments for service delivery.

DPS, IPM, WRCS, WRSS



UEP: Waste & Recycling Services - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:

UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

A well-run city
 Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

W9 Strive to be an employer of choice with a focus on addressing The City's aging workforce.

W9.1 Enable a flexible and adaptable workforce to support achievement of business goals.

DPS, IPM, WRCS, WRSS

W9.2 Foster a workplace culture where employees feel supported and see how they contribute to achieving business goals.

DPS, IPM, WRCS, WRSS

W9.3 Strengthen leadership effectiveness.

DPS, IPM, WRCS, WRSS

W9.4 Implement the Corporate Safety Strategy.

DPS, IPM, WRCS, WRSS

W9.5 Prioritize occupational health, safety and wellness in operational planning and activities to foster a complete culture of engaged employee safety.

DPS, IPM, WRCS, WRSS



UEP: Waste & Recycling Services - Lines of Service

Breakdown of Operating Budget by Service (\$000) (Totals may not add due to rounding)															
	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
Director's Office	1,550	1,550	3.0	1,153	1,153	3.0	1,169	1,169	3.0	1,187	1,187	3.0	1,202	1,202	3.0
Major Revenues	0	(81,262)	0.0	0	(91,338)	0.0	0	(94,829)	0.0	0	(108,768)	0.0	0	(124,457)	0.0
Capital Costs	2,697	2,697	0.0	7,192	7,192	0.0	12,161	12,161	0.0	14,139	14,139	0.0	14,308	14,308	0.0
Contributions to Reserves	13,211	13,211	0.0	12,825	12,002	0.0	8,709	6,152	0.0	5,914	(551)	0.0	16,146	16,090	0.0
Collection Services	61,030	54,905	355.2	62,681	57,102	356.2	65,450	59,861	358.2	78,251	72,651	392.2	76,779	71,169	395.2
Disposal & Processing Services	32,327	30,525	155.0	33,623	31,309	158.0	35,040	32,726	160.0	37,370	35,056	163.0	38,476	36,163	163.0
Infrastructure & Program Management	16,686	9,837	32.5	18,190	12,154	35.5	19,503	13,466	35.5	28,433	17,962	38.5	33,989	17,378	38.5
Strategic Services	7,056	7,026	27.3	9,191	9,164	30.3	9,156	9,129	30.3	9,400	9,373	30.3	9,629	9,602	30.3
Total Business Unit	134,557	38,489	573.0	144,854	38,737	583.0	151,187	39,836	587.0	174,694	41,050	627.0	190,529	41,454	630.0

The tax-supported portion of the WRS budget is used to fund residential garbage collection, and Community Recycling Depots (CRDs). In 2014, \$38.5 million funded residential garbage collection for 310,000 single-family residences, 76,000 condominium units and 47 CRDs. For 2015-2018, accommodating growth will be a challenge and WRS will pursue operating efficiencies within existing collection programs to service new homes. Efficiencies realized in CRD operations \$350 thousand will be reinvested into the implementation of Multi-Family Recycling. The 2015-2018 operating budget allows WRS to deliver a new Green Cart Program to single-family residences in 2017. Savings from the change in residential garbage collection to once every two weeks will offset the costs of the Green Cart Program. Food and yard waste diversion is necessary to reduce long-term landfill liabilities and extend the life of The City's waste management facilities. The organics and biosolids composting facility will also address the need to manage increasing volumes of biosolids produced at The City's wastewater

treatment plants.

The 2015-2018 operating budget and associated fees will enable WRS to implement the Green Cart Program (38 FTEs), deliver collection service (5 FTEs), and meet regulatory and operational requirements of The City's three waste management facilities (8 FTEs). WRS will deliver existing diversion programs, implement Multi-Family Recycling and reduce ICI waste from landfills in accordance with the Council Strategic Action (4 FTEs). Additionally, WRS will implement a long-range infrastructure investment plan to maintain assets, meet regulatory requirements, provide services and keep pace with growth (2 FTEs). WRS will continue to move forward on the reduction and reuse of materials from construction and demolition activities. In 2015-2018, WRS will improve its financial plans and practices and continue to undertake performance measurement, reporting and benchmarking to continue progress towards the goal of achieving 80 per cent diversion of waste from City-run landfills by 2020.

UEP: Waste & Recycling Services - Lines of Service

All \$ values are in Thousands (\$000)

Collection Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	61,030	54,905	355.2	62,681	57,102	356.2	65,450	59,861	358.2	78,251	72,651	392.2	76,779	71,169	395.2

Collection Services (WRCS) collects waste and recycling for residential customers (blue, black and green carts) and for Community Recycling Depots, community clean-ups, festivals, events and some commercial waste. WRCS will maintain strong customer satisfaction levels and deliver efficient and timely collection services to citizens in the blue and black cart collection programs. The introduction of a Green Cart Program in 2017 will address the Action Plan engagement results which indicate residential customers want a comprehensive composting program. The cost of implementation of a Green Cart Program will be offset by the savings resulting from a change in Black Cart collection frequency to

once every two weeks. WRCS will continue to pursue operating efficiencies within existing collection programs to provide residential blue and black cart collection service to new homes at affordable rates. WRCS will continue to operate community collection programs (recycling depots, Christmas Tree Program, Leaf & Pumpkin Program, festivals, and community clean-ups) to make progress on reduction of waste to landfills and support the Council Strategic Action to build public awareness and understanding of our shared responsibilities to conserve and protect the environment.

Disposal & Processing Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	32,327	30,525	155.0	33,623	31,309	158.0	35,040	32,726	160.0	37,370	35,056	163.0	38,476	36,163	163.0

Disposal & Processing Services (DPS) manages operations of The City's three active waste management facilities and inactive landfills to ensure compliance with operating approvals and applicable regulatory requirements. The operation includes receiving, managing and disposal of municipal and non-hazardous industrial waste; receiving and managing materials from City, community and provincial diversion programs; and collecting, transporting, recycling and disposal of household hazardous waste. DPS will lead by example through safe and environmentally responsible operation and maintenance of City-owned landfills and long-term care of The City's inactive landfill sites. DPS will

play a critical role in mitigating the impact of the WRS business on air, land and water through development and continual improvement of leachate, stormwater and landfill gas management systems. Upgrades and enhancements of on-site diversion opportunities at waste management facilities will help reduce the volume of materials landfilled. DPS will engage customers in all sectors during the 2015-2018 business cycle to maintain high satisfaction levels and support the Council Priority to regularly collaborate and engage citizens to encourage participation in City decision-making.

All \$ values are in Thousands (\$000)

Infrastructure & Program Management	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	16,686	9,837	32.5	18,190	12,154	35.5	19,503	13,466	35.5	28,433	17,962	38.5	33,989	17,378	38.5

Infrastructure & Program Management (IPM) develops and manages waste diversion programs and provides infrastructure planning, project delivery and asset management. This includes management of contracted services and public-private partnerships. IPM also coordinates 311 intake and responses for WRS. In 2015-2018, IPM will implement and update the WRS Infrastructure Investment Plan to maintain assets, meet increasingly stringent regulatory requirements, provide reliable and high quality waste and recycling services, and keep pace with growth. This will support the Council Strategic Action to effectively manage The City's inventory of public assets. IPM will coordinate the design and construction of the residential organics and biosolids composting facility as well as develop and facilitate

implementation of the Green Cart Program. IPM will leverage tools and technology to support operations and realize efficiencies. IPM will continue to engage the Construction and Demolition sector to increase recycling and reuse of materials. Further reduction of materials sent to landfills will be accomplished through the implementation of the Multi-Family Recycling Strategy and the ICI Waste Diversion Strategy. These actions will continue progress toward the 80/20 by 2020 waste diversion goal and support the achievement of the Council Strategic Action to implement the Green Cart Program and Multi-Family Recycling Strategy, and reduce Industrial, Commercial and Institutional waste in landfills.

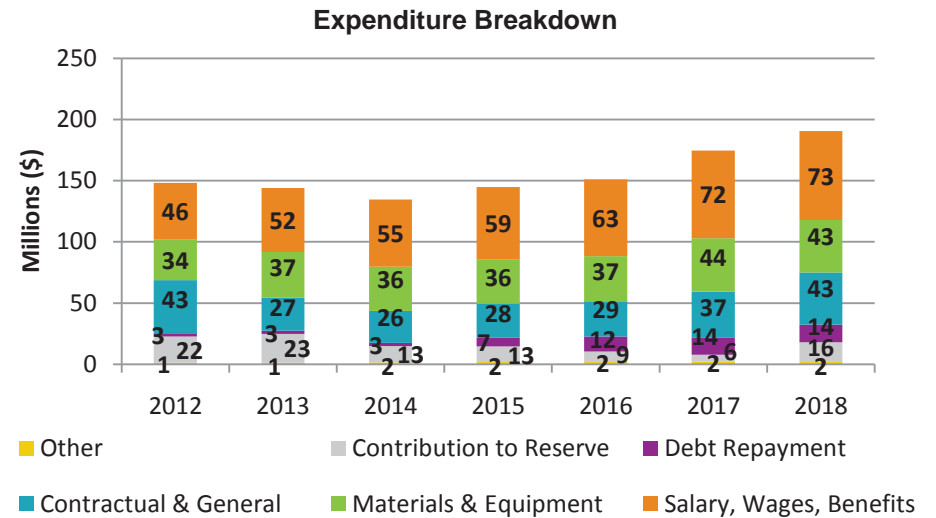
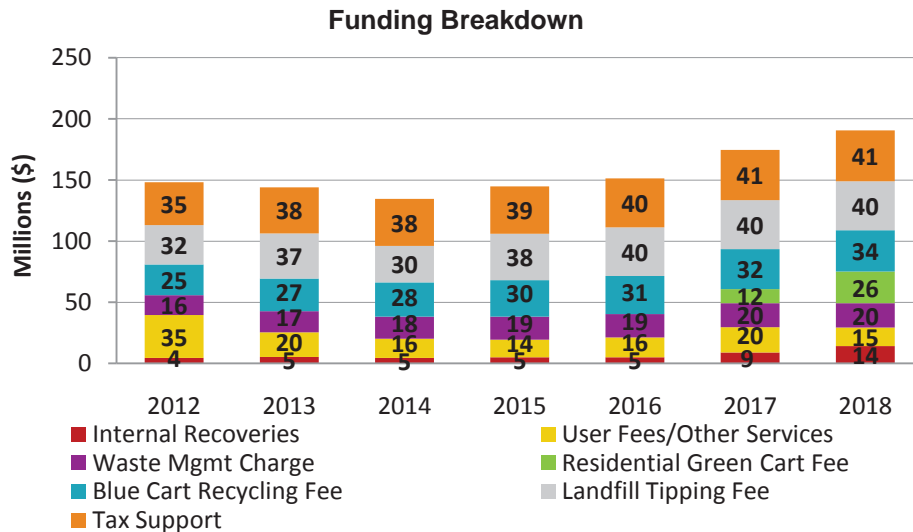
Strategic Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	7,056	7,026	27.3	9,191	9,164	30.3	9,156	9,129	30.3	9,400	9,373	30.3	9,629	9,602	30.3

Strategic Services (WRSS) develops and implements sector and material strategies and will develop a long-term strategy beyond 80/20 by 2020 to support the imagineCALGARY goal of diverting 85 per cent of waste generated within Calgary from landfills by 2036. Ongoing engagement with citizens and customers will provide input for the design and implementation of services to increase diversion by reducing, reusing and recycling. This supports the Council Priority to regularly collaborate and engage citizens to encourage participation in City decision making. WRSS provides educational programs for the business unit to foster behaviour change and enhance public awareness of waste management to support the Council Priority to conserve and protect the environment.

WRSS undertakes planning, research, and engagement to develop and update policies and ensure programs and services are financially sustainable. This includes development and reporting of benchmarking and performance measures to support decision making and risk mitigation. In 2015-2018, WRSS will undertake a cost of service study to support the Council Strategy to be as efficient and effective as possible, reducing costs and focusing on value for money. WRSS leads environmental, health and safety initiatives and supports customer service and employee development for the business unit. Partnerships with other municipalities and organizations provide opportunities to share information and improve waste management practices.

UEP: Waste & Recycling Services - Breakdown of the Operating Budget

Totals may not match due to rounding



Funding Breakdown - Tax support provides operating funding for residential garbage collection, and Community Recycling Depots. All other programs are funded through revenues from the Blue Cart Recycling Fee, Waste Management Charge (WMC), Landfill Tipping Fee, User Fees/Other Services. The 2015-2018 rates and fee structure will provide WRS with the appropriate funding to deliver diversion programs in alignment with the 80/20 by 2020 goal and ensure operational, capital and liability requirements are met for waste management facilities.

Expenditures - Salary, wages and benefits are an average of 41 per cent of the WRS 2015-2018 budget. An increase in 2017 is required for the implementation of the Green Cart Program. Inflationary and growth

pressures have resulted in increased Materials and Equipment charges. Debt repayment is increasing due to the borrowing required for the organics and biosolids composting facility.

User Fees / Charges / Utility Rates - The WMC will remain at \$4.90 per household per month. The Blue Cart Recycling Fee will increase annually by \$0.20/household/month in 2015-2018 to cover inflationary pressures on the operating costs of the Blue Cart Program. In 2017, WRS will add a Residential Green Cart Fee of \$6.50/household per month to cover program costs. The Landfill Tipping Fee will increase annually by \$3/tonne/year in 2015-2018 to meet inflationary pressures and maintain a pricing incentive to encourage private development of diversion opportunities. Fees for 2015-2018 are detailed in Attachment 2.

UEP: Waste & Recycling Services - Breakdown of the Net Operating Budget

Totals may not add due to rounding

Breakdown of Net Operating Budget Changes (\$000s)	2015	2016	2017	2018
Previous Year's Budget	38,489	38,737	39,836	41,050
Less: Previous Year One Time	0	0	0	0
Base	38,489	38,737	39,836	41,050
Efficiency Gains	(350)	0	(4,800)	(5,300)
Inflation	1,602	2,420	2,684	3,314
Service and Budget Increase	(562)	(1,601)	(3,841)	(2,851)
Operating Impact of Previously Approved Capital	476	184	6,776	5,241
Operating Impact of New Capital (Incremental)	0	96	395	0
Re-alignments	(918)	0	0	0
One Time	0	0	0	0
Total Budget Change	248	1,099	1,214	404
Total Budget	38,737	39,836	41,050	41,454

A change in Black Cart collection frequency to every other week results in savings in 2017 and 2018 to be re-invested in the Green Cart Program to reduce the monthly fee. Efficiencies realized in CRD operations in 2015 will be reinvested into the implementation of the Multi-Family Recycling Strategy.

Inflation is budgeted for salary and wage, communication expenses, materials and commodities, fuel and oil, and utility expenses for self-supported programs. Since WRS is primarily self-supported through rates and fees, the service and budget increases include the revenue required to fund all operating expenditures.

Increases for Landfill Tipping Fee, Waste Management Charge and Blue

Cart Recycling Fee are due to changes in tonnages and households. A new Green Cart Fee is required in 2017. Debt repayment increases due to borrowing costs for the organics and biosolids composting facility, with partial cost recovery from the Utilities commencing in 2017. Increases in salary & wage are for new staff for the Blue Cart Program and waste management facilities. Vehicle & maintenance increases due to fleet costs.

The budget reflects the operating costs of capital projects in alignment with the WRIIP. In 2017 and 2018, operating impact of previously approved capital increases due to operation and maintenance costs of the new organics and biosolids composting facility.

TCA Depreciation (\$000s) - Waste & Recycling Services			
2015	2016	2017	2018
9,212	10,358	14,142	16,835

TCA Depreciation content is presented for information only.

UEP: Waste & Recycling Services - Operating Budget for Council Approval

For Council Approval

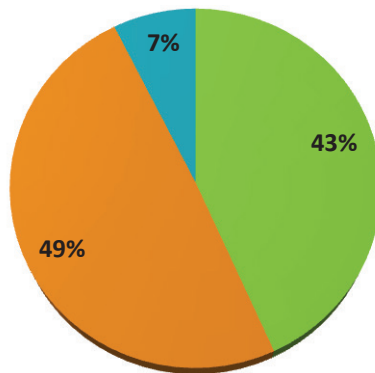
Waste & Recycling Services															
Total Operating Budget (\$000s) for Approval (Totals may not match due to rounding)															
	2012 Actual	2013 Actual	2014 Total Budget (as of June 30)	2015 Budget			2016 Budget			2017 Budget			2018 Budget		
				Base	One- Time	Total	Base	One- Time	Total	Base	One- Time	Total	Base	One- Time	Total
Expenditures	148,190	144,051	134,557	144,854	0	144,854	151,187	0	151,187	174,694	0	174,694	190,529	0	190,529
Recoveries	(4,487)	(5,226)	(4,518)	(5,080)	0	(5,080)	(5,080)	0	(5,080)	(9,080)	0	(9,080)	(14,205)	0	(14,205)
Revenue	(108,538)	(101,175)	(91,550)	(101,037)	0	(101,037)	(106,271)	0	(106,271)	(124,564)	0	(124,564)	(134,870)	0	(134,870)
Net	35,165	37,650	38,489	38,737	0	38,737	39,836	0	39,836	41,050	0	41,050	41,454	0	41,454
FTEs	548.5	561.0	573.0	583.0	0.0	583.0	587.0	0.0	587.0	627.0	0.0	627.0	630.0	0.0	630.0

UEP: Waste & Recycling Services - Capital Budget Overview

Waste & Recycling Services						
Capital Budget (\$000s) Overview (Totals may not match due to rounding)						
	2015	2016	2017	2018	*2019+	Total
Previously-Approved Budget (as at 2014 June 30)	125,245	92,864	4,292	4,490	0	226,891
Total New Capital Budget Requests	(24,987)	31,857	54,745	26,260	11,302	99,177
Total Business Unit Capital Budget	100,258	124,721	59,037	30,750	11,302	326,068

*2019+ represents projects which start within the 2015-2018 cycle and which are completed in years beyond 2018.

**Waste & Recycling Services
New Capital Budget Requests by Project Type
(2015-*2019+)
Total \$99 Million**



■ Maintenance ■ Upgrades ■ Service Change

Maintenance/Replacement - Investments will maintain, protect and extend the life of infrastructure. This includes replacement of collection carts and bins to keep infrastructure operating to meet its intended purpose, and maintenance of landfill infrastructure to protect public health and the environment.

Upgrades - Investments in infrastructure will allow WRS to operate waste management facilities in compliance with regulatory requirements. This includes landfill remediation and infrastructure upgrades to mitigate the impact of the business on air, land and water. An asset management program and collection route optimization enhancements will support Council Priority of a well-run city.

Growth - Investments in growth are reflected in the maintenance/replacement project type.

Service Change - Investments are required to provide reliable and high quality waste and recycling services to citizens. Investment in the organics and biosolids composting facility and program infrastructure are required to implement the Green Cart Program. These support the Council Strategic Action to implement the green cart program under a healthy and green city. Additional investments in information technology systems support enhanced customer service.

UEP: Waste & Recycling Services - Capital Budget Overview

Funding for Capital Projects (Totals may not match due to rounding)	2015	2016	2017	2018	*2019+	Total 2015-*2019+
<i>Federal Gas Tax Fund (GTF)</i>	8,110	7,102	16,800	16,800	8,525	57,337
<i>Capital Reserves</i>	(30)	8,960	18,461	9,460	2,777	39,628
<i>Self-supported Debt</i>	(33,067)	15,795	19,484	0	0	2,212
Total Funding	(24,987)	31,857	54,745	26,260	11,302	99,177
<hr/>						
Total Operating Impacts of Capital (Cumulative)						
2015-2018 Operating Budget	0	96	491	491	N/A	
2019 and beyond up to 2024 Operating Plan	N/A	N/A	N/A	N/A	2,946	

*2019+ represents projects which start within the 2015-2018 cycle and are completed in years beyond 2018.

Capital Budget Listing (by Program - Project) (\$000s)

Program- Project	Project Description	Type	Cat	Prev. Approved Budget up to 2014	Prev. Approved Budget for future years	New Budget Request	2015	2016	2017	2018	*2019+	2015- *2019+	Growth Area
256-000	Landfill/Treatment Infrastructure	M	A	58,236	53,473	-	(2,211)	2,211	-	-	-	-	
256-000	Landfill/Treatment Infrastructure	M	C			42,912	-	6,139	22,323	13,428	1,022	42,912	
Total Program 256 : Landfill/Treatment Infrastructure				58,236	53,473	42,912	(2,211)	8,350	22,323	13,428	1,022	42,912	
<hr/>													
257-000	Diversion Infrastructure	S	A	30,434	157,647	(15,958)	(33,067)	12,009	5,100	-	-	(15,958)	
257-000	Diversion Infrastructure	S	C			23,333		568	21,481	1,284		23,333	

Program- Project	Project Description	Type	Cat	Prev. Approved Budget up to 2014	Prev. Approved Budget for future years	New Budget Request	2015	2016	2017	2018	*2019+	2015- *2019+	Growth Area
Total Program 257 : Diversion Infrastructure				30,434	157,647	7,375	(33,067)	12,577	26,581	1,284	-	7,375	
Operating impact of capital of Program 257													
	2015-2018 Operating Budget		O1				-	96	396	396	N/A	888	
	2019 and beyond Operating Plan		O2				N/A	N/A	N/A	N/A	2,376	2,376	
258-000	Facilities & Equipment	U	A	96,358	15,771	15,958	10,291	5,667	-	-	-	15,958	
258-000	Facilities & Equipment	U	C			32,932	-	5,263	5,841	11,548	10,280	32,932	
Total Program 258 : Facilities & Equipment				96,358	15,771	48,890	10,291	10,930	5,841	11,548	10,280	48,890	
Operating impact of capital of Program 258													
	2015-2018 Operating Budget		O1				-	-	95	95	N/A	190	
	2019 and beyond Operating Plan		O2				N/A	N/A	N/A	N/A	570	570	
				185,028	226,891	99,177	(24,987)	31,857	54,745	26,260	11,302	99,177	

Note:

Type: M=Maintenance/Replacement, U=Upgrade, G=Growth, S=Service Change

Category: A=Project in Progress, C=New Project, O1=2015-2018 Operating Cost, O2=2019 and beyond Operating Cost

Budgets and/or operating impact of capital beyond 2019 are included in 2019 and are detailed in the Explanation section

Explanation of Budget Requests

Program 256 : Landfill/Treatment Infrastructure

Project 256-000 Landfill/Treatment Infrastructure

Previously approved budget up to 2014 of \$58.236 million which represents spending to the end of 2014 for replacement and maintenance of landfills, leachate collection system, landfill cells, and remediated areas, with funding from Federal Gas Tax Fund (GTF) grant of \$21.946 million, Waste & Recycling Services Reserve of \$32.790 million and Pay-As-You-Go \$3.500 million.

Previously approved budget for Future Years of \$53.473 million for completion of landfill remediation work, leachate collection system, and landfill cell construction, with funding from GTF grant of \$32.783 million, Waste & Recycling Services Reserve of \$17.690 million and self-supported debt of \$3.000 million.

A deferral of \$2.211 million of the pre-approved budget from 2015 to 2016 for East Calgary Landfill remediation project due to revised work-plan and project re-prioritization, with funding from Waste & Recycling Services Reserve.

A funding switch of \$6.690 million of 2015 pre-approved budget and \$8.698 million of 2016 pre-approved budget from Waste & Recycling Services Reserve to Gas Tax Fund (GTF) grant for landfill leachate treatment and remediation projects to better fit funding needs.

New budget request of \$42.912 million for replacement and maintenance of landfill, leachate collection system, landfill cells, and remediated areas, with funding from Federal Gas Tax Fund (GTF) grant of \$29.474 million, Waste & Recycling Services Reserve of \$3.472 million and self-supported debt of \$9.966 million.

Operating impact of capital: None.

Program 257 : Diversion Infrastructure

Project 257-000 Diversion Infrastructure

Previously approved budget up to 2014 of \$30.434 million which represents spending to the end of 2014 for the design and build of an indoor composting facility, design and build of an organics waste collection/handling system comprised of organics carts, organics campus site development, and lifecycle replacement of Blue Cart, with funding from Waste & Recycling Services Reserve of \$13.173 million and self-supported debt of \$17.261 million.

Previously approved budget for Future Years of \$157.647 million for the completion of the indoor composting and biosolids facility and the organic campus site development with funding from self-supported debt and Waste & Recycling Services Reserve.

A transfer of \$15.958 million of the pre-approved budget from Program 257 Diversion Infrastructure to Program 258 Facilities & Equipment as the funds for Blue Cart infrastructure including transfer station are no longer required in Program 257 and can be used to support funding for asset management systems, upgrade of landfill infrastructure, and information technology systems to support enhanced customer service, with funding from Waste & Recycling Services Reserve of \$12.994 million and self-supported debt of \$2.964 million.

A deferral of \$17.109 million of the pre-approved budget from 2015 to 2016 and 2017 for the residential composting facility due to a revised work-plan, with funding from self-supported debt.

New budget request of \$23.333 million for Green Cart purchase with the implementation of the Green Cart Program in 2017 and growth and lifecycle replacement of blue carts, with funding from Waste & Recycling Services Reserve of \$12.350 million and self-supported debt of \$10.983 million.

Operating impact of capital: This program requires \$888 thousand in operating costs for the 2015-2018 budget cycle and \$2.376 million for 2019-2024.

Program 258 : Facilities & Equipment

Project 258-000 Facilities & Equipment

Previously approved budget up to 2014 of \$96.358 million which represents spending to the end of 2014 for building scalehouse, operations depot and truck shelter at the 3 City landfills, drainage ditches construction and wetland treatment for stormwater collection, landfill gas collection system extension, IT asset upgrade and replacement, landfill building maintenance, and life cycle replacement of garbage collection carts and bins, with funding from GTF grant of \$59.512 million, Waste & Recycling Services Reserve of \$33.946 million and self-supported debt of \$2.900 million.

Previously approved budget for Future Years of \$15.771 million for the completion of East Calgary Operation Depot, Zhamol land acquisition, IT asset upgrade and replacement with funding from GTF grant, self-supported debt and Waste & Recycling Services Reserve.

A transfer of \$15.958 million of the pre-approved budget from Program 257 Diversion Infrastructure to Program 258 Facilities & Equipment as the funds for Blue Cart infrastructure including transfer station station are no longer required in Program 257 and can be used to support funding for asset management systems, upgrade of landfill infrastructure, and information technology systems to support enhanced customer service, with funding from Waste & Recycling Services Reserve of \$12.994 million and self-supported debt of \$2.964 million. .

A deferral of \$5.667 million of the pre-approved budget from 2015 to 2016 for landfill infrastructure upgrade, asset management systems, information technology systems and lifecycle replacement of collection carts and bins due to revised work-plan and project re-prioritization, with funding from Waste & Recycling Services Reserve.

A funding switch of \$15.473 million of 2015 pre-approved budget from Waste & Recycling Services Reserve of \$8.110 million and from self-supported debt of \$7.363 million to Gas Tax Fund (GTF) grant; and \$1.000 million of 2016 pre-approved budget from Waste & Recycling Services Reserve to Gas Tax Fund (GTF) grant for landfill gas collection systems, landfill stormwater management and landfill facilities and infrastructure projects to better fit funding needs.

New budget request of \$32.932 million for landfill building upgrade and maintenance, operations facilities, landfill gas collections systems, East Calgary Drainage Master Plan, IT asset upgrade and replacement, public arts and growth and lifecycle replacement of garbage collection carts and bins, with funding from GTF grant of \$19.753 million and Waste & Recycling Services Reserve of \$13.179 million.

Operating impact of capital: This program requires \$190 thousand in operating costs for the 2015-2018 budget cycle and \$570 thousand for 2019-2024.

UEP: Waste & Recycling Services - Capital Budget for Council Approval

For Council Approval

Waste & Recycling Services							
Capital Budget (\$000s) for Approval (Totals may not match due to rounding)							
	2014	2015	2016	2017	2018	*2019+	Total (2015-*2019+)
Previously-Approved Budget (as at 2014 June 30)	69,800	125,245	92,864	4,292	4,490	0	226,891
Projects Requiring Approval							
<i>Program 256 : Landfill/Treatment Infrastructure</i>		(2,211)	8,350	22,323	13,428	1,022	42,912
<i>Program 257 : Diversion Infrastructure</i>		(33,067)	12,577	26,581	1,284	0	7,375
<i>Program 258 : Facilities & Equipment</i>		10,291	10,930	5,841	11,548	10,280	48,890
Total Projects Requiring Approval		(24,987)	31,857	54,745	26,260	11,302	99,177
Total Capital Budget	69,800	100,258	124,721	59,037	30,750	11,302	326,068

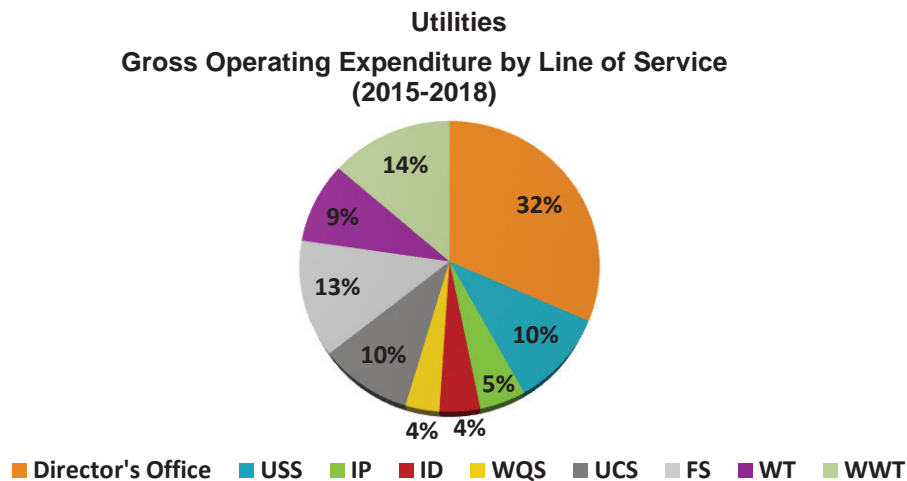
*2019+ represents projects which start within the 2015-2018 cycle and are completed in years beyond 2018.

Utilities (Water Resources and Water Services)

UEP: Utilities - Overview

The Utilities consist of the Water Resources and Water Services business units and together they deliver water, wastewater and drainage services in an operational model where all operating and capital budget expenses are funded through utility billing, not property taxes. The Utilities plan, design, build, operate and maintain water, wastewater and drainage systems to supply quality drinking water, collect and treat wastewater and manage urban runoff. Treatment plants, and collection and distribution systems are operated and maintained to ensure regulatory requirements are met and public health, property and the environment are protected. The Utilities have a responsibility to manage natural resources and work with watershed partners to protect river water quality and quantity.

The Gross Operating Expenditures shown do not include capital related expenses. The majority of the Director's Office expenditures are related to the franchise fee, return on equity and contributions to the Utilities' sustainment reserve.



Values may not sum to 100%, due to rounding.

Utilities Strategic Services (USS)

Develop and implement plans and policies to address risks and opportunities related to water resource management.

Infrastructure Planning (IP)

Planning and asset management for water, wastewater, and stormwater infrastructure and river systems.

Infrastructure Delivery (ID)

Project management, engineering and inspection services for water, wastewater and drainage infrastructure projects.

Water Quality Services (WQS)

Provide analytical, monitoring and technical expertise to The City, the general public, and external partners.

Utilities Construction Services (UCS)

Construction, repair and replacement of the linear water distribution, wastewater collection and drainage systems.

Field Services (FS)

Operation and maintenance of the water distribution, wastewater collection and drainage systems.

Water Treatment (WT)

Treatment and distribution of drinking water.

Wastewater Treatment (WWT)

Collection and treatment of wastewater, and management of Biosolids.

UEP: Utilities - Overview

Trends

A review of the trends and risks helped guide planning of the actions outlined in the 2015-2018 business plan and budget. In the past decade, Calgary and surrounding regions have experienced a trend of higher than anticipated growth which advances the need for supporting infrastructure as well as the pressure to manage assets and deliver service levels within available funding resources. In addition, increasingly stringent regulatory requirements require the Utilities to collaborate with partners, the region and regulators to enhance environmental performance and to contribute to regulatory decision-making. The level of service provided by the drainage program will be advanced through a focus on asset management best practices, an accelerated community drainage infrastructure program, and implementation of low impact development and riparian strategies. To support resiliency, the Utilities will update and maintain business continuity and emergency preparedness and response plans, and develop capacity to address risks and to respond and recover from emergencies. To address changing demographics and an increasingly diverse workforce, the Utilities will strengthen leadership effectiveness, and foster a supportive culture where employees see how they contribute to business goals.

Long-Term Plans

The Utilities are responsible for \$38 billion of City-owned assets, representing over half of The Corporation's total assets. An asset management foundation is used to determine the blend of policy, operational activity, asset maintenance and capital investment necessary to meet service level objectives within the financial capacity of the Utilities. This results in system resiliency, service reliability and financial efficiency. Increasing the financial capacity and sustainability of the Utilities aligns with The City's Long Range Financial Plan, 2020 Sustainability Direction and Municipal Development Plan (MDP). As the Utilities work to achieve the financial targets for water,

wastewater and drainage over the 2015-2018 timeframe, improving the overall performance and financial health of the Utilities will remain a priority. The Utilities will continue to look for opportunities for efficiency and effectiveness improvements through zero-based reviews and a focus on measuring and benchmarking performance to drive continuous improvement.

A priority for the Utilities is continuing to achieve watershed management objectives around water quality and water quantity in support of the 2020 Sustainability Direction, Water Efficiency Plan and Stormwater Management Strategy. Ongoing focus to implement a whole systems approach to manage environmental risks will be achieved by creating alignment between preparedness and natural resource plans. Identifying measures to integrate watershed protection with land use planning will also continue to be a priority. This includes the incorporation of low impact development source control practices in land development. In addition, the Utilities will continue to operate facilities and systems to ensure compliance with regulatory requirements and to mitigate the impacts on air, land and water.

The Utilities will contribute to the achievement of the MDP and CTP by aligning to the Corporate Framework for Growth and Change. The Utilities will ensure adequate land supply, identify infrastructure investments requirements, and support the negotiation of the standard development agreement and a funding strategy for redevelopment to support growth in developing, developed and industrial areas.

UEP: Utilities - Overview

Citizen Engagement

Qualitative feedback was collected through various citizen engagement input streams to build the Utilities' business plan and budget. A key theme was the importance of maintaining service levels, which the Utilities achieve through the ongoing commitment to provide quality water, wastewater and drainage services.

A key citizen-identified priority was for The City to enable two-way communication. This is a focus for the Utilities, and is addressed by actions to integrate feedback from customers and stakeholders to drive programs and service improvements.

The Utilities' plan demonstrates UEP's commitment to implement a customer service strategy in alignment with the Corporate Customer Service Framework, and to provide quality services that add value to citizens' lives. The Utilities' plan addresses citizen requests for ongoing education and engagement to demonstrate to citizens the value they are getting for the services provided.

Council Priorities

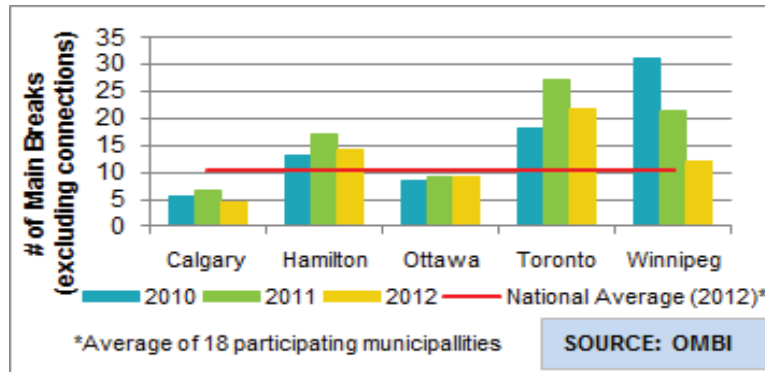
The Utilities are committed to and aligned with Council Priorities for 2015-2018. The Utilities will play a significant role in the development of a healthy and green city. A key area of focus for 2015-2018 will be to lead the Council Strategy H3 to manage the interrelationships between flood protection, water quality and quantity, and land use. The Utilities have actions supporting this strategy including strengthening the performance and condition of the drainage line of service, and progressing the biosolids and residuals management strategy. UEP is committed to leading Council's Strategy H6 to continue to build public awareness and understanding of our shared responsibility to conserve and protect the environment. Key actions for the Utilities include proactively seeking and collaborating with partners to protect natural resources, and fostering behaviour change through both broad and targeted community environmental programs and ongoing education.

The Utilities are also aligned with the Council Priority of a city of inspiring neighbourhoods. The Utilities are committed to manage and promote growth through support of the Corporate Framework for Growth and Change. The Utilities have aligned the Water Infrastructure Investment Plan (WIIP) with the framework's prioritized and sequenced lists so that capital investments are allocated to support a growing city. In addition, the Utilities will continue to invest in priority flood resilient infrastructure and implement the recommendations from the Flood Expert Management Panel as directed.

The Utilities continue to build actions and focus areas for 2015-2018 to support the priority of a well-run city. Key actions include continued focus on ensuring maximum value from the WIIP through advancement of asset management plans and continuing to build strategies to effectively deliver the capital plan. The Utilities will continue to collaborate with partners across the Corporation for alignment of service delivery to citizens.

UEP: Utilities - Benchmarking

Water Main Breaks Per 100 km of Water Distribution Pipe



Based on research published by the Ontario Municipal Benchmarking Initiative (OMBI), Calgary Utilities trend below the OMBI group average in the number of main breaks per 100 km for its water distribution system (compared against 18 total municipalities).

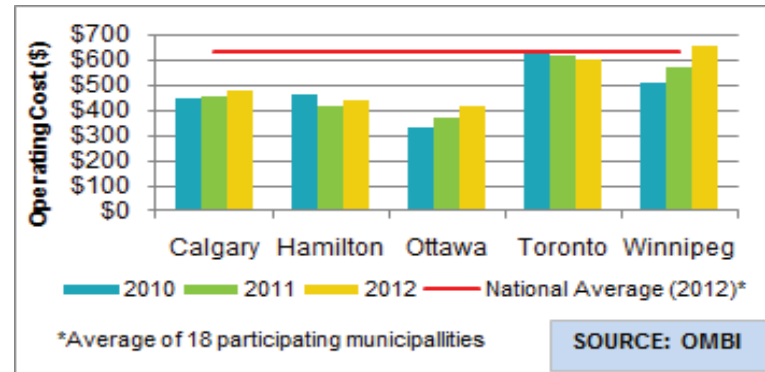
Learning and Best Practices

The Utilities' strong performance can be attributable to proactive asset management and investment in capital maintenance programs. The number of main breaks in Calgary's water distribution system has fallen by 85 per cent over the last 30 years. During this time the network has doubled in length to approximately 5,000 km.

Improvement Initiatives & Action Plan 2015-2018

Through Action Plan 2015-2018, the Utilities will continue to develop and deliver capital maintenance programs which aim to investigate and reduce potential main breaks. In addition, the Utilities continue to refine a sophisticated GIS based risk model to improve the quality of data used to develop the capital maintenance programs. Through 2015-2018, the Utilities will apply best practices from the Water Asset Management program to the Drainage line of service.

Operating Cost of Wastewater Collection and Treatment



Based on research published by the Ontario Municipal Benchmarking Initiative (OMBI), Calgary Utilities trend below the OMBI group average in operating cost for wastewater collection & treatment per megalitre treated (compared against 18 total municipalities).

Learning and Best Practices

The Utilities' performance is largely attributable to maintenance efficiencies and advanced treatment technologies used in the plants.

Improvement Initiatives & Action Plan 2015-2018

Through Action Plan 2015-2018, the Utilities will implement improvements to maintenance management practices, continue to implement operating and maintenance optimization and upgrade projects, and enhance energy management plans. The Utilities will continue to strive for efficiency and effectiveness in alignment with the Water Services and Water Resources Zero-Based Review recommendations.

UEP: Utilities - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:
 UEP supports the infrastructure needs of a growing city and enhances The City's capacity to prepare and respond to natural disasters.

A city of inspiring neighbourhoods
 Every Calgarian lives in a safe, mixed and just neighbourhood,
 and has the opportunity to participate in civic life.

Strategy Related to Council Outcome	Business Unit Action Related to Strategy	Accountable Service
N2 Build resiliency to flooding.	N2.1 Implement recommendations from the Flood Expert Management Panel as directed.	FS, ID, IP, UCS, USS, WQS, WT, WWT
	N2.2 Continue to invest in priority flood resilient infrastructure to reduce the impact of and vulnerability to future events.	ID, IP
N3 Enhance The City's capacity and resiliency to prepare for and respond to pandemics, natural disasters and emergency situations.	N3.1 Update and maintain business continuity and emergency preparedness and response plans to address key risks.	FS, ID, IP, UCS, USS, WQS, WT, WWT
	N3.2 Develop capacity and capability to respond to and effectively recover from emergencies.	FS, ID, IP, UCS, USS, WQS, WT, WWT
N5 Systematically invest in established neighbourhoods as they evolve to accommodate changing community needs.	N5.1 Anticipate and identify infrastructure investment requirements to support growth.	IP



UEP: Utilities - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:
 UEP supports the infrastructure needs of a growing city and enhances The City's capacity to prepare and respond to natural disasters.

A city of inspiring neighbourhoods
 Every Calgarian lives in a safe, mixed and just neighbourhood,
 and has the opportunity to participate in civic life.

N6 Manage and promote growth to achieve the best possible social, environmental and economic outcomes within financial capacities.

N6.1 Support and align to the Corporate Framework for Growth and Change.

IP, USS

N6.2 Ensure adequate land supply (planned and serviced) in developing, developed and industrial areas.

ID, IP, USS

N7 Develop a new funding framework to provide for infrastructure in new and redeveloping neighbourhoods.

N7.1 Support The Corporation in the negotiation of the Standard Development Agreement and an aligned funding model.

IP, USS

N7.2 Support The Corporation in the negotiation of a funding strategy for redevelopment.

IP, USS

N8 Make it easier to build developments that meet our Municipal Development Plan and Calgary Transportation Plan objectives.

N8.1 Support the development of measures to integrate watershed protection with land use planning.

ID, IP, USS, WQS

N8.2 Support incorporation of Low Impact Development source control practices in public land development and redevelopment.

FS, ID, IP, USS, WQS

A prosperous city

A city of inspiring neighbourhoods

A city that moves

A healthy and green city

A well-run city

UEP: Utilities - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:
 UEP works with the community, the region and The Corporation to achieve air, land, and water goals to help conserve, protect and enhance the environment.

A healthy and green city
 We steward our air, land, and water while encouraging healthy lifestyles for all Calgarians.

Strategy Related to Council Outcome	Business Unit Action Related to Strategy	Accountable Service
H3 Manage the interrelationships between flood protection, water quality and quantity, and land use.	H3.1 Align preparedness and natural resource plans to implement a whole systems approach to manage the interrelationships between flood protection, water quality and quantity, and land use.	FS, ID, IP, UCS, USS, WQS, WT, WWT
	H3.2 Continue to strengthen the strategy and actions for the Drainage line of service to improve its overall performance and condition.	FS, ID, IP, USS, WQS
	H3.3 Implement and measure progress on a biosolids and residuals management strategy.	ID, IP, WQS, WT, WWT
H4 Work with our regional partners and the Government of Alberta on an integrated approach to the watershed.	H4.1 Collaborate with staff and regulators to enhance environmental performance and contribute to regulatory decision-making.	FS, ID, IP, UCS, USS, WQS, WT, WWT
	H4.2 Support the implementation of the Calgary Metropolitan Plan through an integrated approach to the watershed.	IP, USS



UEP: Utilities - Actions for Council Approval

For Council Approval

A healthy and green city
We steward our air, land, and water while encouraging healthy lifestyles for all Calgarians.

Utilities & Environmental Protection Commitment:

UEP works with the community, the region and The Corporation to achieve air, land, and water goals to help conserve, protect and enhance the environment.

H6 Continue to build public awareness and understanding of our shared responsibility to conserve and protect the environment.

H6.1 Proactively seek and collaborate with partners to conserve and protect air, land and water resources.

FS, ID, IP, UCS, USS, WQS, WT, WWT

H6.2 Foster behaviour change through program innovation, removing barriers and ongoing education.

USS, WQS

H10 Lead by example to protect public health and the environment

H10.1 Operate facilities and systems to ensure compliance with regulatory requirements and to protect public health and mitigate the impacts of our business on air, land and water.

FS, ID, IP, UCS, USS, WQS, WT, WWT

H10.2 Effectively use research to improve decision-making and environmental performance.

FS, ID, IP, UCS, USS, WQS, WT, WWT



UEP: Utilities - Actions for Council Approval

For Council Approval

Utilities & Environmental Protection Commitment:

UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

A well-run city
 Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

Strategy Related to Council Outcome	Business Unit Action Related to Strategy	Accountable Service
W2 Be as efficient and effective as possible, reducing costs and focusing on value-for-money.	W2.1 Continually improve on financial plans and practices to manage financial health.	FS, ID, IP, UCS, USS, WQS, WT, WWT
	W2.2 Measure, benchmark and report performance to drive continuous improvement and support decision-making.	FS, ID, IP, UCS, USS, WQS, WT, WWT
	W2.3 Leverage tools and technology to support operations and realize efficiencies.	FS, ID, IP, UCS, USS, WQS, WT, WWT
	W2.4 Develop, Implement and measure progress on an Energy Management Plan.	FS, ID, IP, USS, WT, WWT
	W2.5 Implement recommendations from the Water Services Zero Based Review.	FS, UCS, USS, WT, WWT
	W2.6 Participate in a Water Resources Zero Based Review to explore opportunities for improvements to service efficiency and effectiveness.	ID, IP, USS, WQS



UEP: Utilities - Actions for Council Approval

For Council Approval

A well-run city
 Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

Utilities & Environmental Protection Commitment:
 UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

W2 Be as efficient and effective as possible, reducing costs and focusing on value-for-money.

W2.7 Conduct a Cost of Service Study for Water, Wastewater and Drainage Services.

IP, USS

W2.8 Adopt flexible work options that results in reducing assigned workstations in order to optimize administrative spaces.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W5 Regularly collaborate and engage citizens to encourage participation in City decision-making, and better communicate the reasons for the decisions.

W5.1 Integrate feedback from customers and stakeholder to drive programs and service improvements, and enable two-way communication.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W5.2 Provide responsive and quality service while balancing capacity and value for money.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W6 Effectively manage The City's inventory of public assets, optimizing limited resources to balance growth and maintenance requirements.

W6.1 Ensure maximum value from the Infrastructure Investment Plan.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W6.2 Maintain levels of service through reliable and resilient infrastructure.

FS, ID, IP, UCS, USS, WQS, WT, WWT



UEP: Utilities - Actions for Council Approval

For Council Approval

A well-run city
 Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

Utilities & Environmental Protection Commitment:

UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

W6 Effectively manage The City's inventory of public assets, optimizing limited resources to balance growth and maintenance requirements.

W6.3 Ensure the effective coordination and delivery of infrastructure investments.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W7 Continue to transform the organization to be more citizen-focused in its approach and delivery of service.

W7.1 Support the implementation of a Customer Service Strategy in alignment with the Corporate Customer Service Framework.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W7.2 Empower staff to continue to deliver excellent customer service as part of The City's culture.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W8 Increase collaboration across the organization, including alignment of budgets with service delivery to achieve City priorities.

W8.1 Ensure effective coordination for delivery of capital projects across Departments.

ID, IP, UCS, USS, WQS, WT, WWT

W8.2 Collaborate across Departments for alignment of service delivery to citizens.

FS, ID, UCS, WT, WWT



For Council Approval

A well-run city
 Calgary's government is open, responsive, accountable and transparent, delivering excellent services at a fair price. We work with our government partners to ensure we have the tools we need.

Utilities & Environmental Protection Commitment:
 UEP delivers excellent services at a fair price and engages with citizens and customers to improve decision making, to demonstrate value and to align with expectations.

W9 Strive to be an employer of choice with a focus on addressing The City's aging workforce.

W9.1 Enable a flexible and adaptable workforce to support achievement of business goals.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W9.2 Strengthen leadership effectiveness.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W9.3 Foster a supportive culture where employees see how they contribute to achieving business goals.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W9.4 Support and align to the Corporate Safety Strategy.

FS, ID, IP, UCS, USS, WQS, WT, WWT

W9.5 Prioritize occupational health, safety and wellness in operational planning and activities to foster a complete culture of engaged employee safety.

FS, ID, IP, UCS, USS, WQS, WT, WWT



UEP: Utilities - Lines of Service

Breakdown of Operating Budget by Service (\$000) (Totals may not add due to rounding)															
	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
Director's Office	117,838	110,300	31.0	122,070	115,849	31.0	126,658	120,231	31.0	131,632	124,977	31.0	137,001	130,128	31.0
Major Revenues	0	(540,469)		0	(624,063)		0	(681,809)		0	(743,370)		0	(811,249)	
Capital Costs	224,106	224,106		283,392	283,392		324,929	324,929		351,720	351,720		358,423	358,423	
Contributions to Reserves	9,857	9,857		233	233		228	228		18,232	18,232		59,494	59,494	
Utilities Strategic Services	30,315	29,875	102.8	40,430	39,589	110.8	41,568	40,701	110.8	43,032	42,135	110.8	44,495	43,570	110.8
Infrastructure Planning	13,360	6,303	70.0	17,399	8,952	79.0	19,144	10,382	79.0	20,681	11,566	80.0	21,891	12,247	80.0
Infrastructure Delivery	13,573	4,199	88.5	15,728	4,464	99.5	16,892	4,662	103.5	17,935	4,826	106.5	18,534	4,980	106.5
Water Quality Services	12,289	11,778	86.0	13,280	12,959	90.0	14,453	14,120	93.0	14,927	14,580	93.0	15,370	15,010	93.0
Utilities Construction Services	36,796	28,940	232.1	38,498	31,048	232.1	39,396	31,728	232.1	40,367	32,455	232.1	41,293	33,151	232.1
Field Services	44,912	42,587	332.8	47,188	44,338	339.8	51,924	49,010	341.8	55,737	52,751	343.8	57,426	54,372	345.8
Water Treatment	32,882	31,872	119.0	35,979	33,873	123.0	36,675	34,908	123.0	37,432	35,592	123.0	38,141	36,233	123.0
Wastewater Treatment	41,704	41,164	171.3	50,443	49,366	175.3	52,028	50,910	175.3	55,700	54,536	184.3	64,849	63,641	184.3
Total Business Unit	577,632	512	1,233.5	664,640	0	1,280.5	723,895	0	1,289.5	787,395	0	1,304.5	856,917	0	1,306.5

Meeting the needs of a city experiencing unprecedented growth, while keeping pace with increasingly stringent regulatory requirements will challenge the Utilities' current operations. The Utilities' budget for 2015-2018 focuses on the delivery of an expanded capital program and the operation of new infrastructure. The budget advances the development of an enhanced Drainage line of service. The budget was developed in consideration of volatility in energy rates, increased energy consumption required to operate new infrastructure, the diversified biosolids management program, and increases required to achieve

compliance to the Utilities' financial targets by 2018.

The Utilities are committed to optimizing existing resources through efficiency and effectiveness initiatives, but will require 73 new FTEs in order to achieve the objectives set within the four year plan. Of these FTEs, 25 will support the delivery of capital programs, 12 will support the operation of new and upgraded wastewater treatment infrastructure as well as composting of biosolids in 2017-2018, and 36 will support the implementation of an enhanced Drainage line of service.

UEP: Utilities - Lines of Service

All \$ values are in Thousands (\$000)

Utilities Strategic Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	30,315	29,875	102.8	40,430	39,589	110.8	41,568	40,701	110.8	43,032	42,135	110.8	44,495	43,570	110.8

Utilities Strategic Services (USS) develops and implements plans and policies to address risks and opportunities related to water resource management and infrastructure including water quantity, quality, impacts of climate change and natural disasters. This includes managing risks to ensure sufficient water resources are available to meet city and regional demands. USS also develops resource management and preparedness plans for business continuity and emergency response.

To ensure consistent customer service and effective contract management, USS manages customer service and stakeholder relations in alignment to the Corporate Customer Service Framework. USS manages the business and budget planning process and performance management to support Utilities' business goals. This includes effectively managing finances, facilities, vehicles, information and administrative services.

Infrastructure Planning	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	13,360	6,303	70.0	17,399	8,952	79.0	19,144	10,382	79.0	20,681	11,566	80.0	21,891	12,247	80.0

Infrastructure Planning (IP) plans and evaluates for water, wastewater and drainage infrastructure in developing, developed and industrial areas to support the growth and development objectives of The City. This includes prioritizing infrastructure investments to manage short and long term business risks while ensuring levels of service are maintained or improved. IP incorporates resiliency in the planning and design of infrastructure to maintain or enable recovered services during and after adverse events and planned interruptions for maintenance and repair. Water policies and servicing requirements in the Corporate land-use planning process are represented by IP. Review and evaluation services

are provided by IP to new development and redevelopment to ensure plans achieve both design requirements and the lowest lifecycle costs. IP develops engineered solutions for riparian and riverbank protection and provides engineering knowledge and input to issues related to rivers and creeks. In addition, IP plans and implements asset management programs such as condition and risk assessments, and the associated rehabilitation and replacement programs for water, wastewater and drainage infrastructure. To support the Energy Management Strategy, IP identifies, implements and measures progress towards reduced energy consumption.

Infrastructure Delivery	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	13,573	4,199	88.5	15,728	4,464	99.5	16,892	4,662	103.5	17,935	4,826	106.5	18,534	4,980	106.5

Infrastructure Delivery (ID) provides project management, engineering drainage infrastructure. This includes providing internal engineering services to continually improve operational and maintenance efficiencies. To safeguard The City's interests, ID manages the external contractor process for construction of utilities on City rights of way. ID conducts certificate inspections for developers under development agreements

and inspection services for the delivery of water, wastewater and with The City. To achieve more consistent, transparent and accountable delivery of capital projects, ID supports the implementation, embedment and sustainment of the Corporate Project Management Framework (CPMF) within the Utilities, including change management.

Water Quality Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	12,289	11,778	86.0	13,280	12,959	90.0	14,453	14,120	93.0	14,927	14,580	93.0	15,370	15,010	93.0

Water Quality Services (WQS) provides scientific, technical and regulatory services and expertise to protect the environment, public health and City infrastructure. This includes auditing, tracking and maintaining water quality data, trends and environmental performance. WQS maintains regulatory relationships and reports on water, wastewater, stormwater and biosolids to meet environmental and health related legislation. To ensure compliance with Bylaws and promote best

practices, WQS monitors, inspects and verifies industry and community activities and updates Bylaws as required. WQS identifies and manages environmental risks through an Environmental Management System (ISO 14001) and nationally accredited laboratories (ISO 17025.) In addition, WQS facilitates applied research and partnerships to continually improve resource management strategies and capital infrastructure investments.

Utilities Construction Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	36,796	28,940	232.1	38,498	31,048	232.1	39,396	31,728	232.1	40,367	32,455	232.1	41,293	33,151	232.1

Utilities Construction Services (UCS) constructs, repairs and replaces linear water distribution, wastewater collection and drainage infrastructure. This includes repairs to water mains, sanitary sewers and storm sewers to restore service, protect public health and private property. During service disruptions, UCS delivers emergency potable

water supply and provision of temporary water connections to customers. UCS delivers water, wastewater and drainage capital projects to replace aging infrastructure and upgrade existing infrastructure. To ensure efficient service delivery, UCS continually invests in technology, such as trenchless repair methods.

Field Services	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	44,912	42,587	332.8	47,188	44,338	339.8	51,924	49,010	341.8	55,737	52,751	343.8	57,426	54,372	345.8

Field Services operates and maintains the water distribution, wastewater collection and drainage systems in order to maintain levels of service distribution of water to and collection of wastewater from residential, industrial, commercial, institutional and regional customers. FS provides customer support for water, wastewater and drainage infrastructure and service concerns, including emergency response to water and wastewater service interruptions. To ensure the provision of service and reliability of infrastructure, FS maintains water, wastewater and stormwater pipes. To increase the efficiency of service delivery, FS

and to ensure compliance with regulations. This includes protecting property and roadways from stormwater flooding and maintaining the continually invests in field technology including expanded use of cameras for the investigation of infrastructure problems and streamlining field crew dispatch methods. This builds on the progress that has been made to make it easier for customers to submit 311 Service Requests and access information related to water, wastewater and drainage services.

Water Treatment	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	32,882	31,872	119.0	35,979	33,873	123.0	36,675	34,908	123.0	37,432	35,592	123.0	38,141	36,233	123.0

Water Treatment (WT) operates the water treatment plants, transmission pumping, and reservoir storage facilities to ensure a clean, safe and reliable water supply to residential, industrial, commercial, institutional and regional customers. This includes the maintenance of water treatment plants, transmission pumping and reservoir storage facilities to ensure the reliable performance of infrastructure. WT operates and maintains the Glenmore Dam to manage a reliable raw

water supply in the reservoir, maintain environmental flows on the lower Elbow River and reduce the impacts of flood events.

To ensure compliance with more stringent regulations, enhance safety and better address high source water turbidity events, WT continually invests in infrastructure and process upgrades at the water treatment plants.

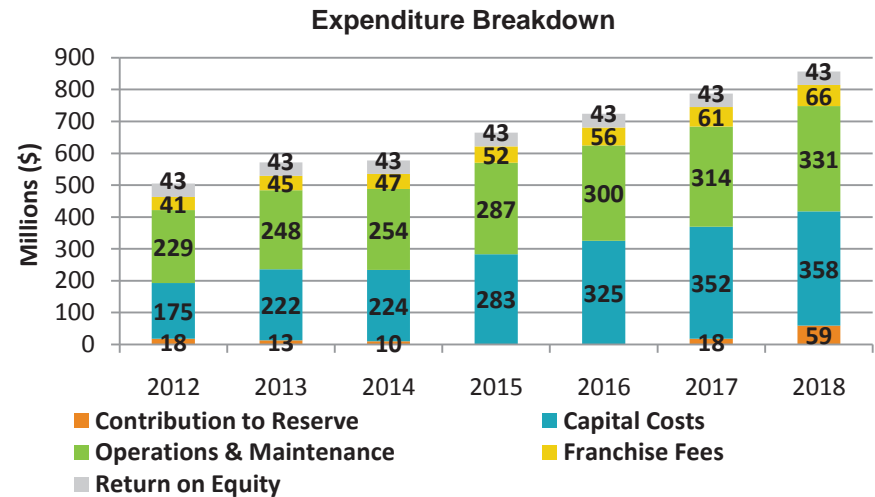
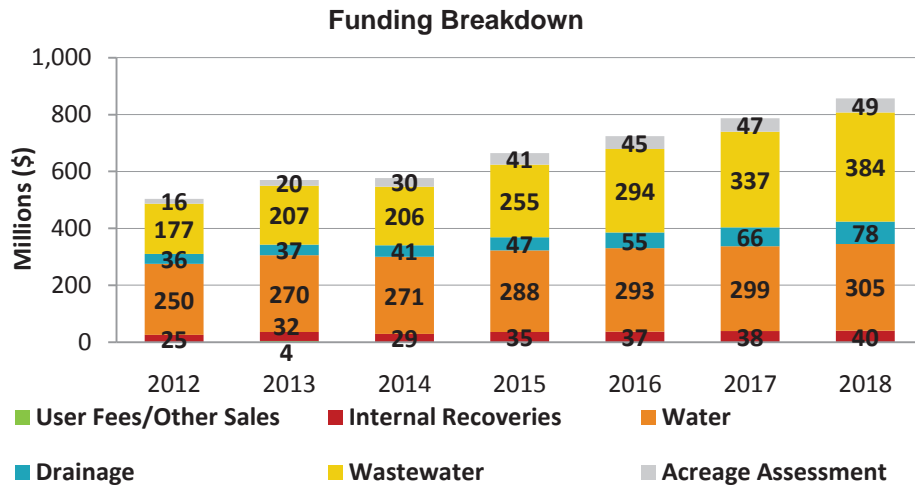
Wastewater Treatment	2014			2015			2016			2017			2018		
	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs	\$ Exp	\$ Net	FTEs
	41,704	41,164	171.3	50,443	49,366	175.3	52,028	50,910	175.3	55,700	54,536	184.3	64,849	63,641	184.3

Wastewater Treatment (WWT) receives and treats wastewater from residential, industrial, commercial, institutional and regional customers to meet regulatory requirements and protect public health and the environment. This includes the expansion of the beneficial reuse program for biosolids, the nutrient-rich by-product of wastewater treatment, to compliment the capacity of the Calgro biosolids land application program. WWT maintains the wastewater treatment facilities to ensure the longevity and performance of infrastructure. To maintain current service levels and manage increased plant loadings as a result of

growth, WWT makes capital investments at the wastewater treatment plants, and utilizes effective processes and technology. WWT also operates the new treated effluent pumping station, which supplies the ENMAX Energy Centre with treated process water, and the new Headworks facility, equipped with more modern equipment, to improve plant processes. To increase energy efficiency of the wastewater treatment plants, WWT continually invests in new processes and technology.

UEP: Utilities - Breakdown of the Operating Budget

Totals may not match due to rounding



Funding Breakdown - The funding sources are made up of revenue from the sales of goods & services from Water, Wastewater and Drainage rates and fees, acreage assessments, and internal recoveries from the capital program that support the delivery of capital projects. These provide the required funding sources to meet the operational and capital requirements, while working towards compliance to the Utilities and drainage financial targets.

Expenditures - Capital expenditures are primarily made up of debt repayment and depreciation associated with the increase to the capital program required to maintain assets, meet increasingly stringent regulatory requirements, provide reliable and high quality services, and keep pace with growth. The operating expenditures include the FTEs and operation and maintenance costs related to new infrastructure, such as increased energy consumption. In addition, the contribution to reserve increases over the business cycle to achieve the financial target of

building a sustainment reserve equal to 10 per cent of total revenue.

User Fees / Charges / Utility Rates - Rates:

- The rate increase allows the Utilities to work toward achievement of long term financial health, maintaining debt within corporate thresholds, as well as meeting the funding requirements for cash financing of capital investments.
- The combined water and wastewater rate increase is 8.3% for each year of 2015-2018. Specifically:
 - Water rate increase: 2.0% in 2015, 2.0% in 2016, 2.0% in 2017, 2.0% in 2018
 - Wastewater rate increase: 16.9% in 2015, 15.8% in 2016, 14.9% in 2017, 14.2% in 2018
 - Monthly drainage charge: \$10.96 for 2015, \$13.05 for 2016, \$15.54 for 2017, \$18.51 in 2018.
- The Utility rates and fees for 2015-2018 are detailed in Attachment 2.

UEP: Utilities - Breakdown of the Net Operating Budget

Totals may not add due to rounding

Breakdown of Net Operating Budget Changes (\$000s)	2015	2016	2017	2018
Previous Year's Budget	512	0	0	0
Less: Previous Year One Time	(512)	0	0	0
Base	0	0	0	0
Efficiency Gains	0	0	(750)	(1,050)
Inflation	2,686	3,993	4,639	4,034
Service and Budget Increase	(11,135)	(10,783)	(13,042)	(11,683)
Operating Impact of Previously Approved Capital	7,895	1,466	2,623	3,717
Operating Impact of New Capital (Incremental)	554	5,324	6,530	4,982
Re-alignments	0	0	0	0
One Time	0	0	0	0
Total Budget Change	0	0	0	0
Total Budget	0	0	0	0

Efficiency gains have been incorporated into the Utility's operating budget that will be realized by 2018 through more effective utilization of existing fleet and implementation of an energy management plan. This will be used to offset increased costs associated with growth, inflation and operational needs. Implementation of the recommendations from the Water Services Zero-Based Review may also result in increased operational efficiency by the end of the business cycle. The inflation is primarily the increases for salary, wage and fringe benefits of existing FTEs. Since the Utilities are self-supported, the service and budget increases include the revenue required to fund all operating expenditures and results in a net zero budget. The budget increases reflect increased

insurance premiums and the enhanced biosolids management program that supports organics composting in 2017 – 2018. Operating impacts include budget and FTEs for the operation and maintenance of new infrastructure associated with previously approved capital, including additional budget to account for increased energy consumption of the new infrastructure. An expanded capital program for the 2015-2018 business cycle has also resulted in the addition of FTEs and budget that are required to deliver on the new capital program. The operating impact of new principal and interest payments related to new capital investments have been included.

TCA Depreciation (\$000s) - Utilities			
2015	2016	2017	2018
92,785	99,719	107,868	113,969

TCA Depreciation content is presented for information only. The Utilities are self supported and the TCA depreciation is funded through its operating budget.

UEP: Utilities - Operating Budget for Council Approval

For Council Approval

Utilities															
Total Operating Budget (\$000s) for Approval (Totals may not match due to rounding)															
	2012 Actual	2013 Actual	2014 Total Budget (as of June 30)	2015 Budget			2016 Budget			2017 Budget			2018 Budget		
				Base	One- Time	Total	Base	One- Time	Total	Base	One- Time	Total	Base	One- Time	Total
Expenditures	505,045	571,713	577,632	664,640	0	664,640	723,895	0	723,895	787,395	0	787,395	856,917	0	856,917
Recoveries	(25,177)	(31,668)	(28,796)	(35,084)	0	(35,084)	(36,565)	0	(36,565)	(38,476)	0	(38,476)	(40,089)	0	(40,089)
Revenue	(478,282)	(538,499)	(548,324)	(629,556)	0	(629,556)	(687,330)	0	(687,330)	(748,919)	0	(748,919)	(816,828)	0	(816,828)
Net	1,586	1,546	512	0	0	0	0	0	0	0	0	0	0	0	0
FTEs	1,205.5	1,213.5	1,233.5	1,280.5	0.0	1,280.5	1,289.5	0.0	1,289.5	1,304.5	0.0	1,304.5	1,306.5	0.0	1,306.5

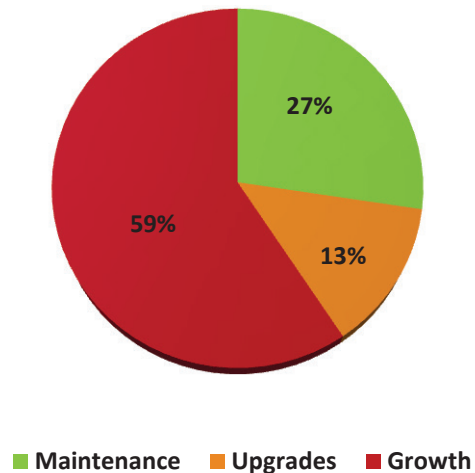
UEP: Utilities - Capital Budget Overview

Utilities						
Capital Budget (\$000s) Overview (Totals may not match due to rounding)						
	2015	2016	2017	2018	*2019+	Total
Previously-Approved Budget (as at 2014 June 30)	203,135	60,652	22,100	6,700	0	292,587
Total New Capital Budget Requests**	141,076	372,706	486,655	332,508	435,789	1,768,734
Total Business Unit Capital Budget	344,211	433,358	508,755	339,208	435,789	2,061,321

*2019+ represents projects which start within the 2015-2018 cycle and which are completed in years beyond 2018.

**Total Utilities self-supported debt, including that required for the requested capital budget, will not exceed approved borrowing limits.

Utilities
New Capital Budget Requests by Project Type
(2015-*2019+)
Total \$1,769 Million



Maintenance/Replacement - The Water Infrastructure Investment Plan (WIIP) supports the capital maintenance necessary to keep current infrastructure operational, supporting the Council Strategic Action of effectively managing The City's inventory of public assets. The WIIP encompasses multiple programs including watermain replacement programs, condition assessments, and corrosion protection programs, as well as capital maintenance programs designed to reduce the risk of unplanned service interruptions while providing services to citizens at an optimal cost.

Upgrades - Investments in stormwater and sanitary system upgrades as well as flood resiliency support the Council Priority of a city of inspiring neighbourhoods. A significant increase in investment for community drainage improvements and sanitary upgrades will increase levels of service in older communities towards modern service standards. Investments in flood resilient infrastructure such as lift stations and stormwater outfall improvements will increase resiliency of the Utilities' services during extreme events.

Growth - To ensure capacity is in place to meet the needs of forecasted population growth, significant investments are planned to maintain a supply of serviced land, ensure adequate treatment capacity and to expand and upgrade pipe networks. The WIIP aligns with the Corporate Framework for Growth and Change, part 5 of the 2009 Municipal Development Plan and supports Council's strategy to manage and promote growth.

UEP: Utilities - Capital Budget Overview

Funding for Capital Projects (Totals may not match due to rounding)	2015	2016	2017	2018	*2019+	Total 2015-*2019+
Other Government Grants	26,610	15,000	7,000	2,000	0	50,610
Private Contributions/Developers Loans	4,616	5,863	27,186	6,736	18,252	62,653
Capital Reserves	95,603	88,040	92,409	88,940	0	364,992
Self-supported Debt	14,247	263,803	360,060	234,832	417,537	1,290,479
Total Funding	141,076	372,706	486,655	332,508	435,789	1,768,734
<hr/>						
Total Operating Impacts of Capital (Cumulative)						
2015-2018 Operating Budget	554	5,878	12,408	17,390	N/A	
2019 and beyond up to 2024 Operating Plan	N/A	N/A	N/A	N/A	157,670	

*2019+ represents projects which start within the 2015-2018 cycle and are completed in years beyond 2018.

Flood Projects in yellow

Capital Budget Listing (by Program - Project) (\$000s)

Program-Project	Project Description	Type	Cat	Prev. Approved Budget up to 2014	Prev. Approved Budget for future years	New Budget Request	2015	2016	2017	2018	*2019+	2015-*2019+	Growth Area
891-000	Water Treatment Plants	M	A	445,987	29,900	(24,300)	(24,300)					(24,300)	City-Wide
891-000	Water Treatment Plants	M	C			129,536	23,823	42,859	50,482	12,372		129,536	City-Wide
Total Program 891 : Water Treatment Plants				445,987	29,900	105,236	(477)	42,859	50,482	12,372	-	105,236	
<hr/>													
Operating impact of capital of Program 891													
	2015-2018 Operating Budget		O1				136	1,506	3,319	3,501	N/A	8,462	
	2019 and beyond Operating Plan		O2				N/A	N/A	N/A	N/A	21,006	21,006	
892-000	Water Distribution Network	M	C			313,371	39,483	53,563	73,609	68,402	78,314	313,371	Multiple

Program- Project	Project Description	Type	Cat	Prev. Approved Budget up to 2014	Prev. Approved Budget for future years	New Budget Request	2015	2016	2017	2018	*2019+	2015- *2019+	Growth Area
Total Program 892 : Water Distribution Network				-	-	313,371	39,483	53,563	73,609	68,402	78,314	313,371	
Operating impact of capital of Program 892													
	2015-2018 Operating Budget		O1				68	907	2,624	4,366	N/A	7,965	
	2019 and beyond Operating Plan		O2				N/A	N/A	N/A	N/A	36,030	36,030	
894-000	Wastewater Treatment Plants	G	A	627,792	194,359	648,541	(54,029)	96,888	191,271	135,668	278,743	648,541	City-Wide
894-000	Wastewater Treatment Plants	G	C			65,920	24,555	20,757	10,342	10,266		65,920	City-Wide
Total Program 894 : Wastewater Treatment Plants				627,792	194,359	714,461	(29,474)	117,645	201,613	145,934	278,743	714,461	
Operating impact of capital of Program 894													
	2015-2018 Operating Budget		O1				104	489	489	489	N/A	1,571	
	2019 and beyond Operating Plan		O2				N/A	N/A	N/A	N/A	38,834	38,834	
895-000	Wastewater Collection Network	G	A	332,136	48,960	71,387	23,077	34,880	13,430			71,387	Multiple
895-000	Wastewater Collection Network	G	C			262,995	32,575	54,124	62,201	53,615	60,480	262,995	Multiple
Total Program 895 : Wastewater Collection Network				332,136	48,960	334,382	55,652	89,004	75,631	53,615	60,480	334,382	
Operating impact of capital of Program 895													
	2015-2018 Operating Budget		O1				110	1,508	3,363	5,131	N/A	10,112	
	2019 and beyond Operating Plan		O2				N/A	N/A	N/A	N/A	38,382	38,382	
897-000	Drainage Facilities & Network	U	C			188,800	26,244	38,358	63,883	42,063	18,252	188,800	Multiple

Program- Project	Project Description	Type	Cat	Prev. Approved Budget up to 2014	Prev. Approved Budget for future years	New Budget Request	2015	2016	2017	2018	*2019+	2015- *2019+	Growth Area
Total Program 897 : Drainage Facilities & Network				-	-	188,800	26,244	38,358	63,883	42,063	18,252	188,800	
<i>Operating impact of capital of Program 897</i>													
	2015-2018 Operating Budget		O1				136	1,468	2,613	3,903	N/A	8,120	
	2019 and beyond Operating Plan		O2				N/A	N/A	N/A	N/A	23,418	23,418	
899-000	Facilities, Equipment & Technology	U	C			46,496	9,580	15,077	13,877	7,962		46,496	
Total Program 899 : Facilities, Equipment & Technology				-	-	46,496	9,580	15,077	13,877	7,962	-	46,496	
952-001	Flood-Water	M	C			15,120	5,400	5,400	3,240	1,080	-	15,120	
952-002	Flood-Wastewater	M	C			15,930	6,210	5,400	3,240	1,080	-	15,930	
952-003	Flood-Drainage	M	C			34,938	28,458	5,400	1,080	-	-	34,938	
Total Program 952 : 2013 Flood Related Projects				-	-	65,988	40,068	16,200	7,560	2,160	-	65,988	
				1,405,915	273,219	1,768,734	141,076	372,706	486,655	332,508	435,789	1,768,734	

Note:

Type: M=Maintenance/Replacement, U=Upgrade, G=Growth, S=Service Change

Category: A=Project in Progress, C=New Project, O1=2015-2018 Operating Cost, O2=2019 and beyond Operating Cost

Budgets and/or operating impact of capital beyond 2019 are included in 2019 and are detailed in the Explanation section

Explanation of Budget Requests

Program 891 : Water Treatment Plants

Previously approved Budget up to 2014 of \$445.987 million which represents the estimated spending to the end of 2014 with funding from Utility sustainment reserve and self-supported debt. Previously approved budget includes ongoing rehabilitation and replacement of equipment at two Water Treatment Plants as well as required upgrades to service a growing population.

Previously approved Budget for Future Years of \$29.900 million for Bearspaw UV, Glenmore Actiflo and Bearspaw Actiflo projects required to ensure adequate water treatment. Relinquishment of budget request of \$24.300 million due to the revised timing for Bearspaw UV pending review of the regulatory requirements by the Province. The funding for these projects is self-supported debt.

New Budget Request of \$129.536 million with funding from Utility sustainment reserve and self-supported debt to continue to meet the water treatment demands of a growing Calgary and Regional customer base. The new budget request includes asset maintenance programs to ensure reliability of two Water Treatment Plants, ensures compliance with regulatory approvals and provides resiliency of services.

Operating impact of capital: This program requires \$8.462 million in operating costs for the 2015-2018 budget cycle and \$21.006 million for 2019-2024 primarily driven by debt principal repayment and interest charges for new capital.

Program 892 : Water Distribution Network

New Budget Request of \$313.371 million with funding from Utility sustainment reserve, self-supported debt, and private contribution to continue to supply clean, safe drinking water in compliance with increasingly stringent regulatory requirements. The new budget request provides sufficient land supply to allow for continued development of new communities, includes asset maintenance programs to limit future watermain breaks and customer disruptions, ensures the drinking water quality is maintained within the distribution system and includes upgrades to improve water pressure and flows to ensure continued customer satisfaction. New budget requires \$235.057 million for the 2015-2018 budget cycle; \$20.041 million in 2019; \$39.978 million in 2020; \$18.295 million in 2021.

Operating impact of capital: This program requires \$7.965 million in operating costs for the 2015-2018 budget cycle and operating costs of \$36.030 million for 2019-2024 primarily driven by debt principal repayment and interest charges for new capital.

Program 894 : Wastewater Treatment Plants

Previously approved Budget up to 2014 of \$627.792 million which represents the estimated spending to the end of 2014 with funding from Utility sustainment reserve and self-supported debt. Previously approved budget includes ongoing rehabilitation and replacement of equipment at three Wastewater Treatment Plants as well as required upgrades to service a growing population.

Previously approved Budget for Future Years of \$194.359 million for the Bonnybrook Capacity Upgrade project and engineering design for the Bonnybrook Plant D Expansion required to ensure adequate Wastewater treatment capacity for a growing City. In addition, there is a previously approved budget for the Dewatering Facility required as part of The City's composting and biosolids strategy. The funding for these projects is self-supported debt. **New budget request** of \$648.541 million increase to the \$194.359 million pre-approved budget for Wastewater Treatment Plants. The majority of these funds are for Bonnybrook Plant D Expansion to complete the project as the pre-approved budget was only for engineering design. New budget requires \$369.798 million for the 2015-2018 budget cycle; \$148.385 million in 2019; \$88.818 million in 2020; \$37.026 million in 2021; \$4.514 million in 2022. The funding for these projects is self-supported debt.

New Budget Request of \$65.920 million with funding from Utility sustainment reserve and self-supported debt to treat and manage wastewater and biosolids in order to protect public health and the environment, and remain in compliance with all regulatory requirements. The new budget request includes plant upgrades to continue to meet the demands of a growing Calgary and Regional Customer base, includes asset maintenance programs to ensure reliability of three Wastewater Treatment Plants and ensures foreseeable regulatory requirements will be met.

Operating impact of capital: This program requires \$1.571 million in operating costs for the 2015-2018 budget cycle primarily driven by debt principal repayment and interest charges for new capital. Operating budget of \$38.834 million is also required for 2019-2024 primarily for energy costs and resources to operate a growing asset base.

Program 895 : Wastewater Collection Network

Previously approved Budget up to 2014 of \$332.136 million which represents the estimated spending to the end of 2014 with funding from Utility sustainment reserve, self-supported debt and private contribution. Previously approved capital includes ongoing rehabilitation and replacement of wastewater collection infrastructure as well as capacity upgrades to service a growing City.

Previously approved Budget for Future Years of \$48.960 million for Bowness Sanitary Sewer Upgrade and for Nose Creek Trunk Upgrades required to ensure appropriate wastewater collection capacity to service a growing City. The funding for these projects is self-supported debt. **New Budget Request** of \$71.387 million increase to the pre-approved budget for Wastewater Collection Network. Additional funds are required to complete the Nose Creek Trunk Upgrade as the pre-approved budget was only for a portion of the project. The funding for these projects is self-supported debt.

New Budget Request of \$262.995 million with funding from Utility sustainment reserve, self-supported debt, and private contribution to ensure reliable Wastewater collection services for customers by minimizing risks of sewer backups. The new budget request provides sufficient serviced land to allow for continued development, ensures appropriate asset maintenance programs to limit wastewater sewer main failures and provides increased level of service in older communities most at risk of sewer back-ups. New budget requires \$202.515 million for the 2015-2018 budget cycle; \$25.245 million in 2019; \$35.235million in 2020.

Operating impact of capital: This program requires \$10.112 million in operating costs for the 2015-2018 budget cycle and operating costs of \$38.382 million for 2019-2024 primarily driven by debt principal repayment and interest charges.

Program 897 : Drainage Facilities & Network

New Budget Request of \$188.800 million with funding from Utility sustainment reserve, self-supported debt, and private contribution to protect watershed and river habitats by reducing Calgary's stormwater impacts on the river systems. This new budget request will provide sufficient serviced land to allow for the continued development of new communities, as well as providing the asset maintenance programs necessary to operate existing stormwater facilities effectively. In addition, this new budget request reduces sediment loadings and provides increased levels of service in the older communities most at risk of drainage back-ups. New budget requires \$170.548 million for the 2015-2018 budget cycle; \$8.694 million in 2019; \$9.558 million in 2020.

Operating impact of capital: This program requires \$8.120 million in operating costs for the 2015-2018 budget cycle and \$23.418 million for 2019-2024. This is driven by increased FTEs and fleet to maintain a growing asset base, debt principal repayment and interest charges for new capital.

Program 899 : Facilities, Equipment & Technology

New Budget Request of \$46.496 million with funding from Utility sustainment reserve to support efficient and effective operations of the Utilities. The new budget request provides maintenance of facilities and replacement of outdated technology and equipment, provides automated control systems and other critical monitoring equipment required to ensure compliance and includes investment in technology to increase effectiveness and efficiency.

Operating impact of capital: None.

Program 952 : 2013 Flood Related Projects

Flood Waterworks:

New budget Request of \$15.120 million for flood recovery of water utility underground river crossings that have been impacted by the 2013 flood. Additional funds are needed due to the changes in the riverbed as a result of the flood. There are some pipelines that have reduced ground cover which pose a risk of failure if left unprotected. A failure would directly impact the environment and the level of service. The repairs must meet the Alberta Environment Sustainable Resources regulations to protect underground river crossings to the 1:100 year scour level plus freeboard. This is funded by Utility sustainment reserve and government grant.

Flood Wastewater:

New budget Request of \$15.930 million for flood recovery of sanitary utility underground river crossings that have been impacted by the 2013 flood. Additional funds are needed due to the changes in the riverbed as a result of the flood. There are some pipelines that have reduced ground cover which pose a risk of failure if left unprotected. A failure would directly impact the environment and the level of service. The repairs must meet the Alberta Environment Sustainable Resources regulations to protect underground river crossings. Additional funds are also requested to cover the maintenance period for the sanitary lift stations that were impacted by the flood to ensure that the repairs are maintaining the level of service expected by the communities. This is funded by Utility sustainment reserve and government grant.

Flood Drainage:

New Budget Request of \$34.938 million for flood recovery of the critical, high, and moderate erosion sites, stormwater outfalls, stormwater ponds, and storm water lift stations that were impacted by the 2013 flood. This flood recovery work will ensure the adequate repair and protection of assets to ensure the level of services is maintained for the communities. Additional funds are also requested to cover the maintenance period for the storm lift stations that were impacted by the flood that have since been repaired. This is funded by Utility sustainment reserve and government grant.

Operating impact of capital: None.

UEP: Utilities - Capital Budget for Council Approval

For Council Approval

Utilities							
Capital Budget (\$000s) for Approval (Totals may not match due to rounding)							
	2014	2015	2016	2017	2018	*2019+	Total (2015-*2019+)
Previously-Approved Budget (as at 2014 June 30)	493,695	203,135	60,652	22,100	6,700	0	292,587
Projects Requiring Approval							
<i>Program 891 : Water Treatment Plants</i>		(477)	42,859	50,482	12,372	0	105,236
<i>Program 892 : Water Distribution Network</i>		39,483	53,563	73,609	68,402	78,314	313,371
<i>Program 894 : Wastewater Treatment Plants</i>		(29,474)	117,645	201,613	145,934	278,743	714,461
<i>Program 895 : Wastewater Collection Network</i>		55,652	89,004	75,631	53,615	60,480	334,382
<i>Program 897 : Drainage Facilities & Network</i>		26,244	38,358	63,883	42,063	18,252	188,800
<i>Program 899 : Facilities, Equipment & Technology</i>		9,580	15,077	13,877	7,962	0	46,496
<i>Program 952 : 2013 Flood Related Projects</i>		40,068	16,200	7,560	2,160	0	65,988
Total Projects Requiring Approval		141,076	372,706	486,655	332,508	435,789	1,768,734
Total Capital Budget	493,695	344,211	433,358	508,755	339,208	435,789	2,061,321

*2019+ represents projects which start within the 2015-2018 cycle and are completed in years beyond 2018.

Utilities & Environmental Protection: General Manager - Operating Budget for Council Approval

For Council Approval

Utilities & Environmental Protection: General Manager															
Total GM Operating Budget (\$000s) (Totals may not add due to rounding)															
	2012 Actual	2013 Actual	2014 Total Budget (as of June 30)	2015 Budget			2016 Budget			2017 Budget			2018 Budget		
				Base	One- Time	Total	Base	One- Time	Total	Base	One- Time	Total	Base	One- Time	Total
Expenditures	657	683	811	764	0	764	764	0	764	764	0	764	764	0	764
Recoveries	(142)	(127)	(253)	(382)	0	(382)	(382)	0	(382)	(382)	0	(382)	(382)	0	(382)
Revenue	0	(14)	0	0	0	0	0	0	0	0	0	0	0	0	0
Net	515	542	558	382	0	382	382	0	382	382	0	382	382	0	382
FTEs	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0