

Blatchford Renewable Energy Utility 2019-2022 Operating Budget

Edmonton

Introduction

The Blatchford development is aimed to be one of the world's largest sustainable communities and home to 30,000 residents; all living sustainably on 536 acres of land, minutes away from downtown, existing infrastructure, schools, retails and services. Blatchford will be comprised of two primarily residential spaces on the east and west side of the site, along with a town centre, an 80-acre central park with plenty of green space throughout the community, as well as a civic plaza that will function as a large gathering space for the community.

To help achieve the City's long term goal of 100% renewable energy and carbon neutrality for Blatchford, a new public, city owned utility has been established. The Blatchford Renewable Energy Utility will own and operate the District Energy Sharing System and certain mechanical equipment within the customer buildings themselves. All buildings in Blatchford, with the exception of net-zero carbon buildings, must be connected to the District Energy Sharing Systems for all heating, cooling and domestic hot water services.

VISION

Blatchford will be home to up to 30,000 Edmontonians living, working and learning in a sustainable community that uses 100% renewable energy, is carbon neutral, significantly reduces its ecological footprint, and empowers residents to pursue a range of sustainable lifestyle choices.



Branch - Blatchford Renewable Energy Utility

Programs & Services:

During the first four years of existence, the focus of activities of the Blatchford Renewable Energy Utility is on the construction and operation of the first stages of the District Energy Sharing System and further development and establishment of the governance and financial structure of the Utility.

Stage 1 construction of the District Energy Sharing System started in April 2018 and the current schedule foresees construction completion with commissioning by the third quarter of 2019. With further development into the Town Centre or further west into Blatchford, additional Energy Centre stages are planned in conjunction with the land development progress. The first stage of the District Energy Sharing System can supply energy for additional stages of residential and commercial development in Blatchford. Special attention will be given to the planning and development of the Sewer Heat Recovery Energy Centre in the Town Centre. Construction start of the Sewer Heat Recovery Energy Centre is currently expected in 2022 with commissioning anticipated in 2023. The next Energy Centre #2, based on geoexchange technology, will be dependent on the current overall development scenario for Blatchford, and will be expected to be commissioned in 2024. In parallel, the operation of the District Energy Sharing System, starting with Stage 1, will grow with the future stages coming online.

Starting in 2018, financial and operational governance activities of the Blatchford Renewable Energy Utility are geared towards full Utility structure development. In April of 2018, City Council approved the Fiscal Policy of the Blatchford Renewable Energy Utility. The Fiscal Policy is the prerequisite required to support the first four year Utility Business Plan and Bylaw including rates. These documents provide the financial background required for the Utility, and establish the key parameters for long term financial sustainability. Following the approval of the Business Plan, work on the initial rates will be integrated in the Utility Bylaw, which will be presented to Council in October of 2018. The Bylaw will establish the District Energy Sharing System, its operation, define the ownership and conditions, identify connecting requirements and specifications, fees, rates, and fines. The Business Plan and Bylaw will be developed and updated, if needed, on an annual basis.

Initial operation of the first stage of the District Energy Sharing System, with a relatively small number of connections and accounts, will be managed internally by the Utility in partnership with other City Departments, external contractors and technical experts. Overall focus will be on appropriate oversight of the design and initial Utility operation. Through the design and construction of the first stage of the District Energy Sharing System, operational and maintenance protocols will be developed and implemented into the full operation. Qualified service providers will be evaluated and engaged for all aspects of utility operation. The growth of the Utility will depend on the timing of the engagement of an qualified external operator of the District Energy Sharing System. The Utility is evaluating an opportune time to engage an external partner, which will likely occur when the initial stage of operations have matured. To promote the Blatchford Community, the Blatchford Land Development program is growing its marketing and communication efforts in cooperation with the Blatchford Renewable Energy Utility.

Branch - Blatchford Renewable Energy Utility

Proposed 2019-2022 Budget - Branch Summary by

(\$000)	2018		2019 Budget	2020 Budget	2021 Budget	2022 Budget
	2017 Actual	Adjusted Budget				
Revenue & Transfers						
Rate Revenue			77	161	206	325
Infrastructure Fees			459	-	239	422
Grant Revenue			-	-	-	-
Total Revenue & Transfers	-	-	\$536	\$161	\$445	\$747
Net Expenditure & Transfers						
Personnel			276	281	287	293
Materials, Goods, and Supplies			188	304	414	451
External Services			776	788	470	501
Interest	8	24	660	748	866	1,000
Intra-municipal Charges			72	74	75	77
Utilities & Other Charges			30	42	50	68
Amortization		0	113	453	472	486
Subtotal	8	24	2,115	2,690	2,634	2,876
Intra-municipal Recoveries						
Total Net Expenditure & Transfers	\$8	\$24	\$2,115	\$2,690	\$2,634	\$2,876
Total Net Operating Requirement	\$8	\$24	\$1,579	\$2,529	\$2,189	\$2,129
Full-time Equivalents	-	-	1.8	1.8	1.8	1.8

Branch - Blatchford Renewable Energy Utility

Budget Changes for 2019-2022

(\$000)

Revenue - Changes

Rate Revenue

Rate revenue increases annually as additional residents move into the Blatchford development and become customers of the Blatchford utility.

Infrastructure Revenue

Year over year changes in infrastructure revenue reflect the timing of when the one time infrastructure fee is paid by builders to connect to the Blatchford Utility District Energy System.

Expenditure - Changes

Personnel

1.8 FTE's in each of 2019 to 2022. Increases related to movement towards job rates, cost of living adjustment and related impact on benefits.

Materials, Goods and Supplies

Increases over 2019 are due to full year of operation and increase in customer base overtime.

External Services

Costs to implement the billing system and initial marketing costs decline after 2020 as these are one time costs related to start-up of the utility. Ongoing costs have been included with estimated inflation of 2%.

Intra-Municipal Services

Increases in service cost is due to estimated inflationary increases.

Utilities & Other Charges

Increases in utility costs relate to moving to a full year of operation in 2020. Additionally, as new customer accounts are added to the utility, the operating costs increase.

Amortization

Capitalization and amortization of assets based on assumption infrastructure will be financed by the Utility rather than a non-refundable cash infusion. Amortization is calculated on a straightline basis as assets are put into service (Energy Centre 1 in 2019).

Interest

Interest expense includes interest due to City of Edmonton for use of working capital and interest on long term debt used to Finance capital expenditures. Interest on working capital is calculated on rates from 1.65% to 2.0% (Interest in 2019 is \$32. Interest over the 2019-22 forecast period totals \$302). Interest is calculated on long term borrowing of 25 years at rates ranging from 3.55% to 4.3% (Interest in 2019 is \$628. Interest over the 2019-22 forecast period totals \$2,973).

Branch - Blatchford Renewable Energy Utility

Pro-Forma Income Statements

	2017 Actual	2018 Adjusted Budget	2019 Budget	2020 Budget	2021 Budget	2022 Budget
Revenues						
Rate Revenue			77	161	206	325
Infrastructure Fees			459	-	239	422
Grant Revenue			-	-	-	-
	-	-	\$536	\$161	\$445	\$747
Expenses						
Operating and maintenance			1,270	1,415	1,221	1,313
Intra-municipal recoveries			72	74	75	77
Net amortization		-	113	453	472	486
Interest	8	24	660	748	866	1,000
	\$8	\$24	\$2,115	\$2,690	\$2,634	\$2,876
Net Loss	(\$8)	(\$24)	(\$1,579)	(\$2,529)	(\$2,189)	(\$2,129)
Opening Net Deficit		(\$8)	(\$32)	(\$1,611)	(\$4,141)	(\$6,330)
Net Loss	(8)	(24)	(1,579)	(2,529)	(2,189)	(2,129)
Ending Net Deficit	(\$8)	(\$32)	(\$1,611)	(\$4,141)	(\$6,330)	(\$8,459)

Branch - Blatchford Renewable Energy Utility

Pro-Forma Balance Sheet

	2017 Actual	2018 Forecast	2019 Forecast	2020 Forecast	2021 Forecast	2022 Forecast
Assets						
Cash	-	-	7,521	4,920	2,594	252
	-	-	\$7,521	\$4,920	\$2,594	\$252
Liabilities						
Due to City of Edmonton	15	53				
Short-term debt			9,500	9,500	9,500	9,500
Long-term debt	93	17,990	19,454	21,751	24,040	45,940
	\$108	\$18,043	\$28,954	\$31,251	\$33,540	\$55,440
Net Financial Assets (Net Debt)	(\$108)	(18,043)	(21,433)	(26,331)	(30,946)	(55,187)
Non-Financial Assets						
Non-contributed tangible capital assets	100	18,011	19,822	22,190	24,616	46,728
	\$ 100	\$ 18,011	\$ 19,822	\$ 22,190	\$ 24,616	\$ 46,728
Operating Surplus (Deficit)	(8)	(32)	(1,611)	(4,141)	(6,330)	(8,459)
Retained Earnings/(Deficit)	\$ (8)	\$ (32)	\$ (1,611)	\$ (4,141)	\$ (6,330)	\$ (8,459)

Blatchford Renewable Energy Utility

Summary of Capital Expenditures

'000s

		2017	2018	2019	2020	2021	2022	2019- 2022	2023 & Beyond	Total Budget
Capital Design & Construction Construction Profile	17-02-2107	100	17,911	267	1,164			1,431		1,431
Blatchford Renewable Energy Utility P&D - Growth	CM-83-8383			1,657	1,657	2,898		6,212		6,212
Blatchford Renewable Energy Utility Delivery - Growth	CM-83-9000						22,598	22,598	22,598	45,196
Total Capital		100	17,911	1,924	2,821	2,898	22,598	30,241	22,598	52,839

PROFILE NAME:	BLATCHFORD RENEWABLE ENERGY UTILITY P&D - GROWTH	UNFUNDED
PROFILE NUMBER:	CM-83-8383	PROFILE STAGE: Entry - Create Profile
DEPARTMENT:	Integrated Infrastructure Services	PROFILE TYPE: Composite
LEAD BRANCH:	Blatchford Redevelopment Project	LEAD MANAGER: Brian Latte
PROGRAM NAME:		PARTNER MANAGER: Tom Lumsden
PARTNER:	Infrastructure Planning & Design	ESTIMATED START: January, 2019
BUDGET CYCLE:	2019-2022	ESTIMATED COMPLETION: December, 2022

Service Category:	Major Initiative:
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GROWTH	RENEWAL	PREVIOUSLY APPROVED:	-
100		BUDGET REQUEST:	6,213
		TOTAL PROFILE BUDGET:	6,213

PROFILE DESCRIPTION

This composite program supports preliminary planning and design work on the Blatchford District Energy System Infrastructure capital projects prior to budget approval. This approach is consistent with Administration's implementation of the Project Development & Delivery Model (PDDM), as well as the Capital Governance Policy that was approved by Council. Funding in the profile will be used to support project development (concept, preliminary planning and schematic design). This composite profile will develop projects that may move to delivery in the current budget cycle and into the start of the next budget cycle.

PROFILE BACKGROUND

The Blatchford redevelopment started in 2008 when Edmonton City Council asked Administration to prepare a report on the possibilities and challenges with the City Centre Airport. A phased closure and redevelopment of the City Centre Airport was approved by Council in a multi-faceted motion in July 2009 after extensive discussions, public consultations, and expert analysis with the airport officially closing in 2013. A business case for the Blatchford community was approved by City Council in 2014 with the construction of the first phase commencing in 2015. In 2017, construction activities continued, including the installation of the storm, sanitary, water services and distribution piping for the District Energy Sharing System. The first phase of the builder selection process, in support of the first stage of development, also commenced in 2017 and will continue in 2018.

In 2016, the Integrated Infrastructure Services (IIS) Transformation program developed the Project Development and Delivery Model (PDDM) which has been endorsed by Council through the approval of the Capital Governance Policy (C591).

PROFILE JUSTIFICATION

To adhere with the PDDM, planning and design work should be completed on projects prior to the project's budget being approved in its entirety by Council. This composite profile will fund that work so Administration can provide Council with better information regarding the scope, schedule and budget prior to funding the entire project, reducing the risk of cost overruns, schedule issues, and other unanticipated issues.

Working in close coordination with the currently proposed Blatchford Land development scenario, the Blatchford Renewable Energy Utility is responsible for the development of additional renewable energy sources and their associated infrastructure to keep up with the energy demands. In order to meet this requirement, funding for the design phase of the Sewer Heat Exchange and Energy Centre #2 being requested through this Business Case is of the utmost importance for the success of this project.

STRATEGIC ALIGNMENT

- Blatchford District Energy contributes to the following 10-year strategic goals specifically:
- Transform Edmonton's Urban Form
 - Preserve and Sustain Edmonton's Environment
 - Improve Edmonton's Livability
 - Ensure Edmonton's Financial Sustainability
 - Diversify Edmonton's Economy

ALTERNATIVES CONSIDERED

The Blatchford Energy Strategy was an outcome of a multi-year effort to find the best available technologies able to meet Council's vision for the community. Throughout the development, various technologies on how to provide sustainable energy to residents and businesses in Blatchford were evaluated. The ambient-loop temperature District Energy Sharing System was deemed the preferred and technically option for meeting the heating, cooling and domestic hot water energy needs and a critical part of the strategy to achieve Council's vision of a 100 per cent renewable and carbon neutral community.

COST BENEFITS

- The planning and design composite profiles provide better information to make capital investment decisions:
- Early investment in design to support detailed business cases.
 - Structured process to evaluate readiness, scope and prioritization.
 - Increased confidence around budget and schedule estimates.
 - There is the opportunity to make major changes in project scope if there are problems identified during the early planning and design phases.

KEY RISKS & MITIGATING STRATEGY

One key risk of the PDDM approach surrounds what would occur should a capital project not be approved after spending resources on planning and design. Current mitigation is the ongoing reporting to City Council regarding capital priorities, while future mitigation could be the improvement to the long term capital planning process. This will ensure that projects being advanced through the planning and design composite are Council and City priorities in line with corporate strategies, goals, and objectives.

Blatchford District Energy Utility maintains a risk register to monitor project risks.

RESOURCES

The planning, design and delivery of the next DESS Stages are managed within the Integrated Infrastructure Services Department and will be according to the Project Development and Delivery Mechanism (PDDM).

CONCLUSIONS AND RECOMMENDATIONS

Capital funds are required to advance the planning and design of capital growth projects in order to adhere with the Project Development and Delivery Model, and improve project schedule and budget estimates through increased level of design to ensure realistic expectations are set prior to project tendering and construction. Approval of this capital profile is required to fund planning and design work in adherence to the PDDM process.

CAPITAL PROFILE REPORT

PROFILE NAME: **Blatchford Renewable Energy Utility P&D - Growth**
 PROFILE NUMBER: **CM-83-8383**
 BRANCH: **Blatchford Redevelopment Project**

UNFUNDED
 PROFILE TYPE: **Composite**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Approved Budget	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST	Budget Request	-	-	1,657	1,657	2,898	-	-	-	-	-	-	6,213
	Revised Funding Sources (if approved)												
	Self Supporting-Tax Guaranteed	-	-	1,657	1,657	2,898	-	-	-	-	-	-	6,213
	Requested Funding Source	-	-	1,657	1,657	2,898	-	-	-	-	-	-	6,213

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	-	1,657	1,657	2,898	-	-	-	-	-	-	6,213
	Requested Funding Source												
	Self Supporting-Tax Guaranteed	-	-	1,657	1,657	2,898	-	-	-	-	-	-	6,213
	Requested Funding Source	-	-	1,657	1,657	2,898	-	-	-	-	-	-	6,213

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Design	-	-	1,657	1,657	2,898	-	-	-	-	-	-
	Total	-	-	1,657	1,657	2,898	-	-	-	-	-	-	6,213

OPERATING IMPACT OF CAPITAL

Type of Impact:

Branch:																
	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE
Total Operating Impact	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

PROFILE NAME:	BLATCHFORD RENEWABLE ENERGY UTILITY DELIVERY - GROWTH	UNFUNDED
PROFILE NUMBER:	CM-83-9000	PROFILE STAGE: Entry - Create Profile
DEPARTMENT:	Integrated Infrastructure Services	PROFILE TYPE: Composite
LEAD BRANCH:	Blatchford Redevelopment Project	LEAD MANAGER: Brian Latte
PROGRAM NAME:		PARTNER MANAGER: Tom Lumsden
PARTNER:	Infrastructure Delivery	ESTIMATED START: January, 2019
BUDGET CYCLE:	2019-2022	ESTIMATED COMPLETION: December, 2022

Service Category:	Utilities	Major Initiative:
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GROWTH	RENEWAL	PREVIOUSLY APPROVED:	-
100		BUDGET REQUEST:	45,196
		TOTAL PROFILE BUDGET:	45,196

PROFILE DESCRIPTION

This composite program supports the development and delivery of the Downtown District Energy System Infrastructure capital growth projects. The approach is consistent with Administration's implementation of the Project Development & Delivery Model (PDDM) as well as the Capital Governance Policy that was approved by Council. The work within this profile will develop and deliver projects in this budget cycle as well as some project development for the next budget cycle.

The next phase of the development, for which funding is being requested through this Business Case, consists of the planning and design development of the Sewer Heat Recovery Energy Centre in the Town Centre and of the Energy Centre #2. Construction start of the Sewer Heat Recovery Energy Centre is currently expected in 2022 with commissioning anticipated in 2023. Energy Centre #2, which is based on geoexchange technology, is expected to be commissioned in 2024. The related planning, design and construction activities for these initiatives are integrated in the upcoming four year budget cycle in 2019-2022.

PROFILE BACKGROUND

The Blatchford redevelopment started in 2008 when Edmonton City Council asked Administration to prepare a report on the possibilities and challenges with the City Centre Airport. A phased closure and redevelopment of the City Centre Airport was approved by Council in a multifaceted motion in July 2009 after extensive discussions, public consultations, and expert analysis with the airport officially closing in 2013. A business case for the Blatchford community was approved by City Council in 2014 with the construction of the first phase commencing in 2015. In 2017, construction activities continued, including the installation of the storm, sanitary, water services and distribution piping for the District Energy Sharing System. The first phase of the builder selection process, in support of the first stage of development, also commenced in 2017 and will continue in 2018.

In 2016, the Integrated Infrastructure Services (IIS) Transformation program developed the Project Development and Delivery Model (PDDM) which has been endorsed by Council through the approval of the Capital Governance Policy (C591).

PROFILE JUSTIFICATION

To continue the development of future Blatchford stages, profile # CM-83-9000 has been developed for the 2019-2022 Budget Cycle in the asking amount of \$22,598,103 to support the construction of Sewer Heat Exchange system infrastructure in the next budget cycle. The expected construction costs for this Business Case listed are for 2022 only. Total expected construction costs are \$45,196,206 and would partly fall into 2023. The recommendation of this Business Case is that capital funding be allocated to commence work on the aforementioned plans and continue with the efforts necessary to achieve Council's Blatchford vision and assist in the delivery of a successful project. It will be unique in that Blatchford is envisioned to be a world leading sustainable development and will serve as microcosm of a sustainable lifestyle as referenced in The Way Ahead.

To adhere with the Project Development and Delivery Model, the work within this profile will bring the project to Checkpoint 3. At this point, the projects will go to Council for approval as a standalone profile to advance the project.

STRATEGIC ALIGNMENT

- Blatchford District Energy contributes to the following 10-year strategic goals specifically:
- Transform Edmonton's Urban Form
 - Preserve and Sustain Edmonton's Environment
 - Improve Edmonton's Livability
 - Ensure Edmonton's Financial Sustainability
 - Diversify Edmonton's Economy

ALTERNATIVES CONSIDERED

The Blatchford Energy Strategy was an outcome of a multi-year effort to find the best available technologies able to meet Council's vision for the community. Throughout the development, various technologies on how to provide sustainable energy to residents and businesses in Blatchford were evaluated. The ambient-loop temperature District Energy Sharing System was deemed the preferred and technically option for meeting the heating, cooling and domestic hot water energy needs and a critical part of the strategy to achieve Council's vision of a 100 per cent renewable and carbon neutral community.

KEY RISKS & MITIGATING STRATEGY

A capital project is not approved after spending resources on concept planning and design. Planning work for the next budget cycle too late will increase the risk of not meeting the completion schedule and budget. Lack of planning can also lead to increased risk during delivery, increased costs and delays.

Blatchford District Energy Utility maintains a risk register to monitor project risks.

RESOURCES

Internal staff and external contractors (via tender process) will be used to complete design/construction.

CONCLUSIONS AND RECOMMENDATIONS

Capital funds are required to be secured to fund the delivery of capital growth projects once PDDM Checkpoint 3 is reached (after planning and design) in order to adhere to the Project Development and Delivery Model, and improve project schedule and budget estimates through increased level of design to ensure realistic expectations are set prior to project tendering and construction. Approval of this capital profile is required to fund delivery work in adherence to the PDDM process.

CAPITAL PROFILE REPORT

PROFILE NAME: **Blatchford Renewable Energy Utility Delivery - Growth**
 PROFILE NUMBER: **CM-83-9000**
 BRANCH: **Blatchford Redevelopment Project**

UNFUNDED
 PROFILE TYPE: **Composite**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Approved Budget	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST	Budget Request	-	-	-	-	-	22,598	22,598	-	-	-	-	45,196
	Revised Funding Sources (if approved)												
	Self Supporting-Tax Guaranteed	-	-	-	-	-	22,598	22,598	-	-	-	-	45,196
	Requested Funding Source	-	-	-	-	-	22,598	22,598	-	-	-	-	45,196

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	-	-	-	-	22,598	22,598	-	-	-	-	45,196
	Requested Funding Source												
	Self Supporting-Tax Guaranteed	-	-	-	-	-	22,598	22,598	-	-	-	-	45,196
	Requested Funding Source	-	-	-	-	-	22,598	22,598	-	-	-	-	45,196

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Construction	-	-	-	-	-	22,598	22,598	-	-	-	-
	Total	-	-	-	-	-	22,598	22,598	-	-	-	-	45,196

OPERATING IMPACT OF CAPITAL

Type of Impact:

Branch:																
	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE
Total Operating Impact	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Branch - Blatchford Renewable Energy Utility

Financial Indicators

(\$000)	2019 Budget	2020 Budget	2021 Budget	2022 Budget
1. Rates Sufficient to Meet Expenses				
Net Income (loss)	(1,579)	(2,529)	(2,189)	(2,129)
Target: Positive Net Income				
2. Actual Cash Balance				
	7,521	4,920	2,594	252
Target: Positive Cash Position				
3. Financing of Capital Investments				
Debt to Net Assets Ratio	146%	141%	136%	119%
Target: Between 50-70%				