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## LAND ACKNOWLEDGMENT

The lands on which Edmonton sits and the North Saskatchewan River that runs through it have been the sites of natural abundance, ceremony and culture, travel and rest, relationship building, making and trading for Indigenous peoples since time immemorial.

The City of Edmonton acknowledges the traditional land on which we reside is in Treaty Six Territory. We would like to thank the diverse Indigenous Peoples whose ancestors' footsteps have marked this territory for centuries, such as nêhiyaw / Cree, Dene, Anishinaabe / Ojibwa, Nakota Isga / Nakota Sioux, and Niitsitapi / Blackfoot peoples. We also acknowledge this as the Métis' homeland and the home of one of the largest communities of Inuit south of the 60th parallel. It is a welcoming place for all peoples who come from around the world to share Edmonton as a home. Together we call upon all of our collective, honoured traditions and spirits to work in building a great city for today and future generations.

The City of Edmonton owes its strength and vibrancy to these lands and the diverse Indigenous peoples whose ancestors' footsteps have marked this territory as well as settlers from around the world who continue to be welcomed here and call Edmonton home.



The City of Edmonton recognizes that, as settlers to this land, we must do better. Reconciliation begins with acknowledging historical traumas and current disparities. The City recognizes it needs to honour and respect its foundational relationship with the First Peoples of Canada. This will be accomplished through living the values of mutual respect, responsibility and renewal to build and maintain strong relationships between all City employees and Indigenous Peoples.

The Indigenous Framework has been built on years of dialogue with Indigenous communities, through formal and informal relationships with Elders, community Knowledge Keepers and Indigenous youth, as well as information gathering from research and discussions with municipal and community leaders, service providers and academic professionals. This important work is intended to answer the question:

**“How can the City of Edmonton best support and build strong relationships with Indigenous Peoples in Edmonton?”**

Through the adoption of this framework, it becomes the responsibility of each and every City of Edmonton employee to forge stronger relationships with the descendants of the original inhabitants of this land and to recognize we all have roles to play in our journey towards reconciliation. The framework is designed to be a living initiative that will change and adapt as our relationships grow and mature.

**It is the responsibility of every employee to live out these four roles in their interactions with indigenous Peoples:**

**Listener:** “We listen, with open hearts and minds, when Indigenous Peoples share their stories and experiences.”

**Connector:** “We connect Indigenous Peoples to the programs, services, people and resources that enrich the community and foster relationships to create positive change.”

**Advocate:** “We stand with Indigenous Peoples to create a safe and inclusive city where everyone is treated with dignity and respect.”

**Partner:** “We work in partnership with Indigenous Peoples on initiatives to improve the physical, mental, spiritual and emotional well-being of Indigenous Peoples in Edmonton.”



## BLATCHFORD RENEWABLE ENERGY UTILITY

**Outcome: 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.**

Blatchford Renewable Energy's strategic objectives include the growth of the District Energy Sharing System and the integration of emerging technologies into the utility's operation. The overall goal is to reach steady, reliable operation and financial sustainability while achieving Council's vision for a carbon neutral community powered entirely by renewable energy. Blatchford's District Energy Sharing System has been operational for over two years and the utility's focus is on day-to-day operations, maintaining and connecting new customer connections while also planning the extension and development of the next Energy Centres as the development grows.

A key strategy of Edmonton's Community Energy Transition Strategy

## Emissions-neutral electricity grid by 2050

The overall goal is to reach steady, reliable operation and financial sustainability while achieving Council's vision for a carbon-neutral community powered entirely by renewable energy.

### Blatchford Renewable Energy

At full-built out, the Utility is expected to provide **46,789** and **43,747 MWh** heating and cooling energy respectively to Blatchford residents and businesses.

Complies with environmental regulations and goals to **protect the environment and biodiversity**.

### Downtown District Energy Initiative

>A **City-wide** decarbonized district energy network by 2050.

> Distributed energy centres will provide **redundancy** by supplying energy into the District Energy Sharing System from various locations.

Significantly reducing greenhouse gas emissions and increasing energy resilience in the heart of Edmonton.

**BRANCH BY THE NUMBERS**  
BLATCHFORD RENEWABLE ENERGY UTILITY



## Branch Services Delivered

Provision of Sustainable Thermal Energy Services
<p><b>Sustainable Heating and Domestic Hot Water Energy Services:</b> At full build out, the Blatchford Renewable Energy utility net District Energy Sharing System annual heating loads are currently estimated to be 46,789 MWh with peak heating demand of 34,543 kW.</p>
<p><b>Sustainable Cooling Energy Services:</b> At full build out, the Blatchford Renewable Energy utility net District Energy Sharing System annual cooling loads are currently estimated to be 43,747 MWh with peak cooling demand of 46,601 kW.</p>

## Key Actions for 2023-2026

The focus for Blatchford Renewable Energy over the next four years will be on the continuation of the utility's operational performance, the extension of the distribution piping network and the growth of existing and new energy centres.

The first Blatchford residents have been connected for almost two years and the District Energy Sharing System has worked without any interruptions or concerns. The variability and flexibility of the utility has provided comfortable heat and cooling energy throughout the initial years of operation. While the operations and engineering teams are monitoring the performance of the first energy centre, Blatchford Renewable Energy started the process of planning the anticipated growth in the community. The next four years will include a series of operational activities described in more detail below:

### Energy Centre One Expansion

The current capacity at Energy Centre One is one (1) megawatt (MW) of heating and cooling energy respectively, which is enough to service the first few land development stages in Blatchford. The expansion of Energy Centre One is needed to provide energy for land development stages in Blatchford west and east which are anticipated to come online between 2023 and 2026. This includes larger developments on the east side of Blatchford such as Hangar 11 and the anticipated initial NAIT campus extension, which will be serviced by Energy Centre One. At full capacity, Energy Centre One will be able to generate 4.25 MW of heating and 4 MW of cooling energy. The design effort for the expansion of Energy Centre One is underway and the anticipated capital budget in 2023 and 2024 to extend the capacity is \$3.2 million dollars.

### **Design and Construction of the Next Energy Centre**

According to the current development scenario, additional energy capacity in the District Energy Sharing System, apart from Energy Centre One, will be needed by 2026. To keep in line with the vision for Blatchford and the original business case for the District Energy Sharing System, the next major renewable energy source would be the heat from the two combined sewer lines which meet under the future Blatchford market area. The majority of this energy demand would need to be provided by a new Sewer Heat Exchange Energy Centre. With the project in schematic design development, the utility has learned that updated sewer flow forecasts from EPCOR have reduced the expected future flow and hence the energy potential from the combined sewer system. After the review of the updated business case for the Sewer Heat Exchange Energy Centre, the utility is suggesting to advance a previously planned peaking Energy Centre prior to the construction of the Sewer Heat Exchange Energy Centre. At current estimations, the peaking Energy Centre would be commissioned in 2026 at an approximate cost of \$15.3 million dollars.

### **Extension of Distribution Piping Network**

The distribution piping network distributes the energy from the energy centres to the buildings and utility customers. As the development grows, so will the piping network. In order to facilitate the anticipated Blatchford development scenario, additional distribution piping is expected to be needed over the next four years in Blatchford west, east and the market area. The total capital forecast for the 2023 to 2026 budget is \$4.9 million dollars for the planned extension of the distribution piping network.

### **Connecting New Customers**

Based on land sales and home builder construction, the utility is projected to be connected to 53 townhouse accounts by the end of 2022. The number of expected accounts is anticipated to increase to 143 in 2023 and to 216, 290 and 442 in the years 2024 to 2026 respectively. By 2026, Blatchford Renewable Energy expects to provide thermal energy services to a connected floor space area of approximately 400,000 m<sup>2</sup>, with all of this energy coming from the first energy centre.

## Performance

Performance Measure	Actual/ Forecast/ Trend				2023-2026 Desired Trend
	2020	2021	2022	2026	
	Actual	Actual	Forecast	Forecast	
<b>Goal: A Healthy Community Well Served</b>					
Thermal Energy Provided by DESS (Cumulative)	1MWh	214 MWh	798 MWh	29,762 MWh	↗
<b>Goal: Environmental Stewardship</b>					
Renewable Energy (Utility) <sup>1</sup>	96%	96%	96%	96%	→
GHG reduction (Utility) <sup>2</sup>	8.5 tCO <sub>2</sub> e	33 tCO <sub>2</sub> e	23 tCO <sub>2</sub> e	2,612 tCO <sub>2</sub> e	↗
<b>Goal: Operational Effectiveness</b>					
Total floor area connected to the DESS (Cumulative)	1,504 m <sup>2</sup>	5,787 m <sup>2</sup>	15,000 m <sup>2</sup>	403,335 m <sup>2</sup>	↗

<sup>1</sup> Renewable Energy (Utility): Percent of renewable energy used for utility-owned and operated equipment

<sup>2</sup> GHG Reduction (Utility): Tonnes of carbon dioxide equivalent reduced from utility operation



## Emerging Opportunities and Risks

### Emerging Opportunities

#### **Opportunity to grow the utility outside of its current service area**

Over the last year there has been interest from building owners located outside the utility's service area to connect to the District Energy Sharing System. This interest is driven mostly by acknowledging the sustainability impacts to connecting. NAIT indicated that they would like to look into the feasibility of connecting buildings on their existing campus to the utility in the future. The ability to service more buildings would need to be evaluated on an individual basis, but could be of benefit to the utility and the City's overall greenhouse gas reduction efforts.

#### **Partnership with external industry partner**

While still in its infancy, Blatchford Renewable Energy continues to evaluate the timing and opportunities related to engaging an external service provider with plans to further investigate this opportunity in 2023. This engagement is an ongoing mandate by Council, however the right timing and pathway would need to be evaluated and implemented.

#### **Integration of emerging technologies**

The strategic objectives of Blatchford Renewable Energy continue to focus on the growth of the District Energy Sharing System and the integration of emerging technologies. The utility continues to monitor the fast changing market for applicable sustainable energy services technologies which could further support the Blatchford vision.

### Emerging Risks

#### **External investment**

The need for external investment for the utility to close the existing funding gap in the long term financial model remains. The utility, with Council's support, continues to advocate for grant opportunities on the provincial and federal level. The impact on rate structure and uptake in customers is critical for long term viability.

#### **Pace of land development**

Close collaboration between the Blatchford Redevelopment Office and Blatchford Renewable Energy ensures planning and construction are aligned and expedites monitoring and updating the financial performance of both entities. As with any large land development project, Blatchford uses a staging plan. However, the sequence and timing of the stages are subject to change depending on the market conditions and construction progress. The current operational, energy and financial model for the utility is based on the most recent development scenario for Blatchford and will be adjusted as necessary and in alignment with the land development plans.

**Supply chain constraints**

Inflation, high fuel prices and potential labour shortages causing higher production and transportation costs, as well as service impacts, could affect procurement plans and budget forecasts, therefore impacting the utility's growth.

**Potential change in regulations**

Blatchford Renewable Energy works closely with its partners, all levels of government and key players in the energy and utility market to ensure any potential changes in regulations that may affect energy costs and other levies are recognized and implemented in any updated forecast.

## Branch Summary by Program

### Branch - Blatchford Renewable Energy Utility

#### 2023-2026 Budget - Branch Summary by Account Category

(\$000)	2021 Actuals	2022 Projected	2023 Budget	2024 Budget	2025 Budget	2026 Budget
<b>Revenue and Transfers</b>						
Rate Revenue	11	14	145	694	1,225	2,007
Infrastructure Fees	43	67	996	755	1,590	1,933
Grant Revenue	56	-	-	-	-	-
<b>Total Revenue and Transfers</b>	<b>\$110</b>	<b>\$81</b>	<b>\$1,141</b>	<b>\$1,449</b>	<b>\$2,815</b>	<b>\$3,940</b>
<b>Net Expenditure and Transfers</b>						
Personnel	360	288	575	587	600	613
Materials, Goods, and Supplies	11	3	11	11	11	11
External Services	351	261	661	533	529	478
Intra-municipal Charges	138	397	369	395	417	442
Utilities & Other Charges	48	72	74	85	91	92
Amortization	143	142	177	386	572	736
Debt	555	573	1,203	1,523	1,935	2,547
<b>Subtotal</b>	<b>1,606</b>	<b>1,736</b>	<b>3,070</b>	<b>3,520</b>	<b>4,155</b>	<b>4,919</b>
Intra-municipal Recoveries	-	-	-	-	-	-
<b>Total Net Expenditure and Transfers</b>	<b>\$1,606</b>	<b>\$1,736</b>	<b>\$3,070</b>	<b>\$3,520</b>	<b>\$4,155</b>	<b>\$4,919</b>
<b>Total Net Operating Requirement before other revenue</b>	<b>(\$1,496)</b>	<b>(\$1,655)</b>	<b>(\$1,929)</b>	<b>(\$2,071)</b>	<b>(\$1,340)</b>	<b>(\$979)</b>
Other Revenue - Developer Contributions - Capital	-	-	2,000	1,500	450	1,000
<b>Total Net Operating Requirement</b>	<b>(\$1,496)</b>	<b>(\$1,655)</b>	<b>\$71</b>	<b>(\$571)</b>	<b>(\$890)</b>	<b>\$21</b>
<b>Full Time Equivalents</b>	<b>3.10</b>	<b>3.10</b>	<b>5.10</b>	<b>5.10</b>	<b>5.10</b>	<b>5.10</b>

## Branch - Blatchford Renewable Energy Utility

### Summary of Budget Changes - Net Requirement

(\$000)	2023 Budget	2024 Budget	2025 Budget	2026 Budget
Previous Year's Budgeted Revenue	81	1,141	1,449	2,815
Rate Revenue	131	549	531	782
Infrastructure Fees	929	(241)	835	343
Grant Changes	-	-	-	-
<b>Total Proposed Budget Revenue</b>	<b>\$1,141</b>	<b>\$1,449</b>	<b>\$2,815</b>	<b>\$3,940</b>
Previous Year's Budgeted Expenditures	1,736	3,070	3,520	4,155
Previously Approved Adjustments	-	-	-	-
Administrative Adjustments	-	-	-	-
<b>Revised Base Budget</b>	<b>1,736</b>	<b>3,070</b>	<b>3,520</b>	<b>4,155</b>
Existing Services (Incremental to Base)				
Cost Changes	619	337	500	553
Efficiency & Cost Savings	-	-	-	-
<b>Total Impact on Existing Services</b>	<b>619</b>	<b>337</b>	<b>500</b>	<b>553</b>
Growth/New Services				
Customer Growth & Program Changes	715	113	135	211
<b>Total Growth/New Services</b>	<b>715</b>	<b>113</b>	<b>135</b>	<b>211</b>
<b>Total Proposed Budget Expenditures</b>	<b>\$3,070</b>	<b>\$3,520</b>	<b>\$4,155</b>	<b>\$4,919</b>
Other Revenue - Developer Contributions - Capital	2,000	1,500	450	1,000
<b>Total Net Income(Loss)</b>	<b>\$71</b>	<b>(\$571)</b>	<b>(\$890)</b>	<b>\$21</b>
Full Time Equivalents	2.0	0.0	0.0	0.0

## Details of Budget Changes

### Revenue Changes

- Annual rate revenue increases as additional residents move into Blatchford and become customers of Blatchford Renewable Energy. Up to 2023, all connections have been to fee-simple townhouses. From 2023 - 2026, growth is expected to include several new medium density apartments, new strata townhouse complexes, retail and residential mixed-use buildings, a new student union residence and a new fire hall.
- Year-over-year changes in infrastructure revenue reflect the timing of the one-time infrastructure fee paid by builders to connect to Blatchford Renewable Energy.

### Expenditure Changes

#### Existing Services (Incremental to Base)

- Increased costs related to higher facility maintenance and shared costs with more utility infrastructure coming online and increased rate and contract work.
- Increased effort and costs for design and construction management given the anticipated growth from 2023 to 2026, especially in the multi-unit building sector.

#### Growth/New Services

- Increased contract costs for feasibility studies to extend outside of the current service area and to prepare and execute the engagement of a third party industry partner for the utility.
- This includes the motion made at Executive Committee on October 12, 2022 for BRE to prepare an unfunded service package to undertake a feasibility study to expand the Utility to areas adjacent to Blatchford outside the current service area including, but not limited to, Hangar 14.
- Increased costs for rate integration work for EPCOR's automatic billing system on behalf of the utility.

#### Other Revenue - Developer Contribution - Capital

- New capital costs related to the development of the Energy Transfer Stations will be recovered from the builders in Blatchford. These transfer stations in the Blatchford apartment buildings connect and distribute energy from the District Energy Sharing System operated by the Utility.
- The builder will pay for central mechanical room equipment in multi-unit buildings, which will then be owned, operated and maintained by BREU. These will be contributed assets on BREU's balance sheet and will not attract a net depreciation expense or a return on rate base.

### Incremental Change in Full-Time Equivalents

- Two new full-time equivalents: the addition of a new Project Coordinator and a Business Analyst to provide business planning and engineering support with the anticipated utility growth, the management of additional energy centre construction and capacity, the extension of the distribution piping network and increased customer connections.

### Amortization

- Amortization is calculated on a straight line basis as assets are put into service which incurs a half year of expenses in the first and last year of the asset's life.

### Interest

- Interest Expense includes interest due to the 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 ranging from 4.63 per cent to 5.38 per cent. Interest is calculated on long term borrowing of 25 years at rates ranging from 5.33 per cent to 6.00 per cent.

## Branch - Blatchford Renewable Energy Utility

### Pro-Forma Income Statement

(\$000)	2021 Actuals	2022 Projected	2023 Budget	2024 Budget	2025 Budget	2026 Budget
<b>Revenues</b>						
Rate Revenue	11	14	145	694	1,225	2,007
Infrastructure Fees	43	67	996	755	1,590	1,933
Grant Revenue	56	-	-	-	-	-
<b>Total Revenue</b>	<b>\$110</b>	<b>\$81</b>	<b>\$1,141</b>	<b>\$1,449</b>	<b>\$2,815</b>	<b>\$3,940</b>
<b>Expenses</b>						
Operating and maintenance	908	1,021	1,690	1,611	1,648	1,636
Amortization of tangible capital assets	143	142	177	386	572	736
Interest	555	573	1,203	1,523	1,935	2,547
<b>Total Expense</b>	<b>\$1,606</b>	<b>\$1,735</b>	<b>\$3,070</b>	<b>\$3,520</b>	<b>\$4,155</b>	<b>\$4,919</b>
<b>Total Net Operating Requirement before other revenue</b>	<b>(\$1,496)</b>	<b>(\$1,654)</b>	<b>(\$1,929)</b>	<b>(\$2,071)</b>	<b>(\$1,340)</b>	<b>(\$979)</b>
Other Revenue - Developer Contribution - Capital	-	-	2,000	1,500	450	1,000
<b>Net Income/(Loss)</b>	<b>(\$1,496)</b>	<b>(\$1,654)</b>	<b>\$71</b>	<b>(\$571)</b>	<b>(\$890)</b>	<b>\$21</b>
<b>Opening Retained Earnings</b>						
Net Income	(11,738)	(13,352)	(15,007)	(14,936)	(15,507)	(16,398)
Capital assets transferred to other City Departments	(1496)	(1655)	71	(571)	(891)	22
Ending Retained Earnings	(118)	-	-	-	-	-
<b>Ending Retained Earnings</b>	<b>(\$13,352)</b>	<b>(\$15,007)</b>	<b>(\$14,936)</b>	<b>(\$15,507)</b>	<b>(\$16,398)</b>	<b>(\$16,376)</b>

## Branch - Blatchford Renewable Energy Utility

### Pro-Forma Balance Sheet

(\$000)	2021 Actuals	2022 Projected	2023 Budget	2024 Budget	2025 Budget	2026 Budget
<b>Assets</b>						
Cash and cash equivalents	10,905	8,777	6,336	3,857	2,170	824
Accounts Receivable	56	56	56	56	56	56
<b>Total Assets</b>	<b>\$10,961</b>	<b>\$8,833</b>	<b>\$6,392</b>	<b>\$3,913</b>	<b>\$2,226</b>	<b>\$880</b>
<b>Liabilities</b>						
Accounts payable and accrued liabilities	178	178	178	178	178	178
Short-term debt	16,000	16,000	16,000	16,000	16,000	16,000
Long-term debt	19,310	19,547	24,815	27,024	33,550	42,771
<b>Total Liabilities</b>	<b>\$35,488</b>	<b>\$35,725</b>	<b>\$40,993</b>	<b>\$43,202</b>	<b>\$49,728</b>	<b>\$58,949</b>
<b>Net Financial Assets (Net Debt)</b>	<b>(\$24,527)</b>	<b>(\$26,892)</b>	<b>(\$34,601)</b>	<b>(\$39,289)</b>	<b>(\$47,502)</b>	<b>(\$58,069)</b>
<b>Non-Financial Assets</b>						
Tangible capital assets	11,174	11,885	19,665	23,782	31,104	41,693
<b>Total Non-Financial Assets</b>	<b>\$11,174</b>	<b>\$11,885</b>	<b>\$19,665</b>	<b>\$23,782</b>	<b>\$31,104</b>	<b>\$41,693</b>
<b>Retained Earnings/Deficit</b>	<b>(\$13,353)</b>	<b>(\$15,007)</b>	<b>(\$14,936)</b>	<b>(\$15,507)</b>	<b>(\$16,398)</b>	<b>(\$16,376)</b>



## Proposed 2023-2026 Capital Budget

### Branch - Blatchford Renewable Energy Utility

#### Summary of Capital expenditures

Capital Projects	Profile Number	2022 & Prior	2023 Budget	2024 Budget	2025 Budget	2026 Budget	2023-2026 Total	Profile Total
<b>Previously Approved</b>								
Blatchford District Energy Sharing System - Energy Transfer St	22-83-8384	1,500	1,500	2,000	-	-	3,500	5,000
Distribution Piping System	21-83-8384	7,450	1,200	-	-	-	1,200	8,650
<b>Total Previously Approved</b>		8,950	2,700	2,000	-	-	4,700	13,650
<b>2023-2026 Capital Budget Requests</b>								
Blatchford District Energy System [DES]	17-02-2107	-	2,698	483	-	-	3,181	3,181
Distribution Piping System	21-83-8384	-	1,220	1,220	1,220	1,220	4,881	4,881
Energy Center #4 - Blatchford Renewable Energy	23-83-8385	-	-	436	5,680	8,560	14,676	14,676
<b>Total 2023-2026 Capital Budget Requests</b>		-	3,918	2,139	6,900	9,780	22,738	22,738
<b>Recommended 2023-2026 Capital Budget Approval</b>		<b>\$8,950</b>	<b>\$6,618</b>	<b>\$4,139</b>	<b>\$6,900</b>	<b>\$9,780</b>	<b>\$27,438</b>	<b>\$36,388</b>
<b>Cash Flow Adjustment</b>								
Blatchford District Energy Sharing System	22-83-8384	(1,450)	500	(500)	450	1,000	1,450	
Blatchford Renewable Energy Utility Planning and Design - Growth	CM-83-8383	(2,790)	839	863	544	544	2,790	
<b>Total Forecast Per Blatchford Renewable Energy Utility 2023 Rate File</b>		<b>\$4,710</b>	<b>\$7,957</b>	<b>\$4,502</b>	<b>\$7,894</b>	<b>\$11,324</b>	<b>\$31,678</b>	

**Note:** For rate filing purposes the Blatchford Renewable Energy Utility 2023 Rate Filing (Attachment 1 of FCS01479) reflects forecasted capital expenditures, including those for previously approved capital projects, cash flowed over the 2023-2026 time period. This ensures rates are being calculated based on correct timing of expenditures. The budget for previously approved capital profiles reflects cash flows as originally approved by Council.

## 2023-2026 Capital Budget Requests

### Scope Change - Blatchford District Energy System [DES]

Current capacity at Energy Centre One is one megawatt (MW) of heating and one megawatt of cooling energy, which is enough to service the first few land development stages in Blatchford. The expansion of Energy Centre One is needed to provide energy for land development stages in Blatchford west and east, which are anticipated to come online between 2023 and 2026. At full capacity, Energy Centre One will be able to generate 4.25 MW of heating and 4 MW of cooling energy. Design for the expansion is underway in 2022, and the anticipated capital budget requirement in 2023 and 2024 to extend the capacity is \$3.18 million.

### Scope Change - Distribution Piping System

The distribution piping network distributes the energy from the energy centres to the buildings and utility customers. As the development grows, so will the piping network. Additional distribution piping is needed to facilitate the anticipated Blatchford development scenario in the west, east and market areas. The anticipated capital requirement for the 2023-2026 budget is \$4.88 million for the planned extension of the distribution piping network.

### New Profile Recommended for Funding - Energy Center #4 - Blatchford Renewable Energy - Design and Construction

According to the current land development scenario, additional energy capacity in the District Energy Sharing System, apart from Energy Centre One, will be needed by 2026. To align with the vision for Blatchford and the original business case for the District Energy Sharing System, the next major renewable energy source would be the heat from the two combined sewer lines that meet under the future Blatchford Market area. The majority of this energy demand would need to be provided by a new sewer heat exchange energy centre. With the project in schematic design development, updated sewer flow forecasts from EPCOR have reduced the expected future flow and hence the energy potential from the combined sewer system (updated business case in Attachment 3). Given this new information the Utility proposes advancing a previously planned peaking energy centre prior to construction of the sewer heat exchange energy centre. At current estimations, the peaking energy centre would be commissioned in 2026 at an approximate cost of \$15.29 million, of which \$0.61 million for design work would be funded out of existing profile CM-83-8383 and \$14.68 million for delivery would be requested in the new capital profile 23-83-8385.

## Capital Profiles

The capital profiles on the following pages provide additional information for the previously approved profile and budget adjustments:

### Previously Approved Profile

- [Blatchford District Energy Sharing System - Energy Transfer Station \(22-83-8384\)](#)

### Profiles with Budget Requests

- [Blatchford District Energy System \[DES\] \(17-02-2107\)](#)
- [Distribution Piping System \(21-83-8384\)](#)
- [Energy Center #4 - Blatchford Renewable Energy \(23-83-8385\)](#)

# CAPITAL PROFILE REPORT GUIDE

**RECOMMENDED:** This is a new capital profile that has a budget request to be approved by City Council.

<b>RECOMMENDED</b>	
<b>PROFILE STAGE:</b>	<b>Council Review</b>
<b>PROFILE TYPE:</b>	<b>Standalone</b>
LEAD MANAGER:	Lead Branch Manager
PARTNER MANAGER:	Partner branch Manager
ESTIMATED START:	January, 2023
ESTIMATED COMPLETION:	December, 2026
<b>Project Initiative:</b>	
PREVIOUSLY APPROVED:	-
BUDGET REQUEST:	69,000
TOTAL PROFILE BUDGET:	69,000

This is the budget amount that is being requested in this budget cycle.

**RECOMMEND FUNDED:** This is a profile that is previously approved by City Council which has a budget request.

<b>RECOMMENDED FUNDED</b>	
<b>PROFILE STAGE:</b>	<b>Approved</b>
<b>PROFILE TYPE:</b>	<b>Composite</b>
LEAD MANAGER:	Lead Branch Manager
PARTNER MANAGER:	Partner Branch Manager
ESTIMATED START:	January, 2023
ESTIMATED COMPLETION:	December, 2026
<b>Project Initiative:</b>	
PREVIOUSLY APPROVED:	26,698
BUDGET REQUEST:	69,414
TOTAL PROFILE BUDGET:	96,112

This is the amount approved by Council in the prior year capital budget cycle.  
*Note: Previously approved composite profiles with no approved budget in 2023/beyond will show as zero/blank.*

This is the budget amount that is being requested in this capital budget cycle

This is the total profile budget if the budget request is approved by Council

**FUNDED:** This is a profile that was previously approved by City Council which does not have a budget request. However, the profile has a budget in the forecast years of the proposed capital budget cycle. This stage is also known as “Approved.”

<b>FUNDED</b>	
<b>PROFILE STAGE:</b>	<b>Approved</b>
<b>PROFILE TYPE:</b>	<b>Standalone</b>
LEAD MANAGER:	Craig Walbaum
PARTNER MANAGER:	Gord Cebryk
ESTIMATED START:	May, 2019
ESTIMATED COMPLETION:	December, 2022
<hr/>	
<b>or Initiative:</b>	<b>Great Neighbourhoods</b>
PREVIOUSLY APPROVED:	53,436
BUDGET REQUEST:	-
TOTAL PROFILE BUDGET:	53,436

This amount is approved by City Council in the prior year/budget cycle.

No budget request in this budget cycle.

**UNFUNDED:** This is a profile that has not been approved by City Council and is not recommended in the proposed budget cycle. This stage is also known as “Unapproved.”

<b>UNFUNDED</b>	
<b>PROFILE STAGE:</b>	<b>Entry - Create Profile</b>
<b>PROFILE TYPE:</b>	<b>Standalone</b>
LEAD MANAGER:	Lead Branch Manager
PARTNER MANAGER:	Partner branch Manager
ESTIMATED START:	January, 2023
ESTIMATED COMPLETION:	December, 2026
<hr/>	
<b>or Initiative:</b>	
PREVIOUSLY APPROVED:	-
BUDGET REQUEST:	69,000
TOTAL PROFILE BUDGET:	69,000

## *Other Definitions*

### **CAPITAL BUDGET AND FUNDING SOURCES (000's):**

This table consists of three pieces of information. The APPROVED BUDGET line identifies the Capital Budget as approved by City Council previously (if applicable), adjusted for any subsequently approved budget adjustments. The BUDGET REQUEST line reflects any requested changes to the existing budget approval. This would include requests for increases or reductions in budget approval of the annual expenditures. The REVISED BUDGET (IF APPROVED) is the sum of the first two lines and will reflect the amount and timing of capital expenditures as proposed by the department/branch for each profile.

### **GROWTH:**

Investment in new infrastructure that increases the size of the infrastructure portfolio.

Note: Any upgrade of an infrastructure asset before the end of its expected useful life is considered growth. For example, moving from a leased building to a new City-owned building would be considered growth.

### **RENEWAL:**

Investment in existing infrastructure to restore to its former condition, thereby extending its service life. This may include replacement or rehabilitation of individual components as they age or become obsolete. Capital investment in renewal extends the period of service potential and does not increase the size of the infrastructure asset portfolio.

### **LEAD BRANCH/LEAD BRANCH MANAGER:**

This is the branch and the branch manager that is responsible for the construction/project management of until the completion of the profile. This field will be populated if the Profile Manager is different from the Project Manager. For example, the Community & Recreation Facilities branch may “own” the budget to build a recreation centre, however, when the capital budget is approved, Integrated Infrastructure Services may “project-manage” the construction of the new recreation centre.

### **OPERATING IMPACT OF CAPITAL:**

This section identifies the operating budget impacts of this capital profile and must be consistent with the information in the operating budget. Where applicable, it includes an estimate of Full-Time Equivalent human resources.

### **PROFILE NAME:**

The unique descriptive name given to each profile.

**PROFILE NUMBER:**

A unique profile number is assigned to each profile and remains with that profile until project completion. The profile number consists of three components as follows; the approximate year in which the project begins, the asset category and an individual four-digit number. For example:

<u>Year</u>	<u>Asset Category</u>	<u>No.</u>
23	30	9999

Note: If the “year” shows a “CM” instead of a number, it signifies that the profile is a composite, as opposed to a standalone.

**PROFILE TYPE - STANDALONE:**

Includes both renewal (> \$5 million) and/or growth (> \$2 million) profiles that are completed over two or more years and have potential access to external funding. Standalone Profile budget approval is for the duration of the project even if the budget goes beyond the current Budget Cycle.

**PROFILE TYPE - COMPOSITE:**

A Composite profile is a collection of individual projects that fit within a common theme, typically within a larger program initiative such as the Neighbourhood Renewal Program, Arterial Overlay Program, etc. Within the composite profile are individual projects representing different locations where the work will take place, and are less than \$5 million in value individually (if a renewal composite), or \$2 million in value (if a growth composite). Each individual project within a composite is expected to be completed over a two year construction window. Composite Profile budget approval is for the Budget Cycle only (i.e. a maximum of four years).

**PROJECT LIST - PERCENTAGE FUNDED**

The project list that accompanies each composite capital profile includes a “percentage funded” column. This figure represents how much of the project is estimated to be funded based on available funding in the budget cycle. In most cases, the projects listed as funded on the project lists represent 80 per cent of the total profile value. At this point in the Project Development and Delivery Model (PDDM) process cost estimates for projects in composite profiles have a high degree of uncertainty. As more clarity is obtained through the PDDM process, project estimates are updated. Leaving 20 per cent of each composite profile's total approved budgets as unallocated provides funding to compensate for adjustments to cost estimates, or to fund additional priorities within the overall composite program.

# CAPITAL PROFILE REPORT

PROFILE NAME: <b>SAMPLE BASIC PROFILE</b>	<b>RECOMMENDED</b>
PROFILE NUMBER: <b>12-34-5678</b>	<b>PROFILE STAGE: Council Review</b>
DEPARTMENT: <b>ZZ - Uncategorized</b>	<b>PROFILE TYPE: Standalone</b>
LEAD BRANCH: <b>Uncategorized</b>	LEAD MANAGER: <b>Lead Branch Manager</b>
PARTNER: <b>Uncategorized</b>	PARTNER MANAGER: <b>Partner branch Manager</b>
BUDGET CYCLE: <b>2023-2026</b>	ESTIMATED START: <b>January, 2023</b>
	ESTIMATED COMPLETION: <b>December, 2026</b>

<b>Service Category: Protection</b>	<b>Major Initiative:</b>
-------------------------------------	--------------------------

<b>GROWTH</b>	<b>RENEWAL</b>	<b>PREVIOUSLY APPROVED:</b>	-
<b>80</b>	<b>20</b>	<b>BUDGET REQUEST:</b>	69,000
		<b>TOTAL PROFILE BUDGET:</b>	69,000

**PROFILE DESCRIPTION**

This section describes the history leading up to the current state of affairs giving rise to or relating to the general business problem or opportunity that is the subject of the business case. It provides a brief description of the business problem or opportunity that the initiative is trying to address. (5,000 characters)

**PROFILE BACKGROUND**

Provides a summarized description and context for the initiative. This section briefly describes the initiative and defines parameters of the initiative. Specifically, it describes the timeframes, department/organization, function and technology (if applicable). Explains items that are specifically excluded from the initiative. (1,200 characters)

**PROFILE JUSTIFICATION**

Provides a summarized rationale for the initiative. This section briefly describes the justification of the initiative. It outlines what the initiative will accomplish, in clear and measurable terms within a specified time frame. These objectives can be used in a post-implementation review to assess the success of the initiative. The objectives should be formulated broadly enough so that meaningful alternatives are not ruled out and narrowly enough so that only relevant alternatives are considered and that costs and benefits can be formulated. (5,000 characters)

**STRATEGIC ALIGNMENT**

This section describes how the initiative aligns with and contributes to the Council Goals and strategic alignment/outcomes, and to corporate and/or departmental business plans. (600 characters)

**ALTERNATIVES CONSIDERED**

The section provides the reader with an outline of the realm of possibilities that are available to address the problem or opportunity. It provides the reader with rationale to why some have been eliminated as viable alternatives. (1,000 characters)

**COST BENEFITS**

This section identifies overall value contribution and costs incurred to realize the proposed initiative. Provides a summary of tangible/intangible benefits; summarized listing of costs to achieve the desired benefits. States assumptions and provides a degree of accuracy for the cost estimates. (500 characters)

**KEY RISKS & MITIGATING STRATEGY**

Some initiatives will have risks that will significantly limit or prevent the business owner from achieving their objectives. Note significant risks, for each viable alternative, with an identified mitigating strategy. (800 characters)

**RESOURCES**

Outlines the resourcing options for each alternative (internal and/or external) and provides justification. This is subject to approved corporate standards outlined in Administrative Directive A1439B Purchasing Goods Services & Construction. (300 characters)

**CONCLUSIONS AND RECOMMENDATIONS**

This section will recap the key elements of the business case and identify the proposed solution from the identified alternatives, and will make a specific recommendation on proceeding with the initiative. (800 characters)

**CHANGES TO APPROVED PROFILE**

(BUDGET OFFICE USE) This section only appears is there is a change request to an approved budget and is used to explain any project changes, other than project scope, which have occurred since the project was last approved. Changes to be covered include description of any budget increase/decrease which occur as a result of a change in project scope (i.e. tender price lower or higher, material cost fluctuation, transfers of funds to or from one project to another, etc.), or any shift in the mix of the funding sources originally identified. Changes may also be due to receipt of unanticipated alternative funding sources, a change in eligibility for grant funding, or the maximization of grants eligibility.



# CAPITAL PROFILE REPORT

Profile Page 2

PROFILE NAME: **Sample Basic Profile**  
 PROFILE NUMBER: **12-34-5678**  
 BRANCH: **Uncategorized**

**RECOMMENDED**  
 PROFILE TYPE: **Standalone**

## CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
	Approved Budget												
Original Budget Approved		-	-	-	-	-	-	-	-	-	-	-	-
Current Approved Budget		-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST	Budget Request	-	-	23,000	24,000	22,000	-	-	-	-	-	-	69,000
	Revised Funding Sources (if approved)												
	Basic Grants	-	-	23,000	24,000	22,000	-	-	-	-	-	-	69,000
	Requested Funding Source	-	-	23,000	24,000	22,000	-	-	-	-	-	-	69,000

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	-	23,000	24,000	22,000	-	-	-	-	-	-	69,000
	Requested Funding Source												
	Basic Grants	-	-	23,000	24,000	22,000	-	-	-	-	-	-	69,000
	Requested Funding Source	-	-	23,000	24,000	22,000	-	-	-	-	-	-	69,000

## CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
		Construction	-	-	23,000	24,000	22,000	-	-	-	-	-	-
	Total	-	-	23,000	24,000	22,000	-	-	-	-	-	-	69,000

## OPERATING IMPACT OF CAPITAL

Type of Impact:

Branch:	2025				2026				2027				2028			
	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE
Fleet and Facility Services	-	-	-	-	-	-	-	1.0	-	-	-	-	-	-	-	-
Parks and Roads Services	-	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Operating Impact</b>	-	-	-	2.0	-	-	-	1.0	-	-	-	-	-	-	-	-

# CAPITAL PROFILE REPORT

<b>PROFILE NAME: Sample Basic Profile</b>			
<b>PROFILE NUMBER: 12-34-5678</b>			
<b>BUDGET CYCLE: 2023-2026</b>			
<b>Project Number</b>	<b>Project Name</b>	<b>Description</b>	<b>Percentage Funded</b>
230001	ABC Energy Centre Expansion	This initiative will fund design and construction for the ABC Energy Centre Expansion	100
230002	Distribution Piping Rehabilitation	Rehabilitation of distribution piping as indicated in condition assessment.	100
230004	Energy Sharing System Upgrades	Upgrades to the Energy Sharing System for efficiency improvements	100

## CAPITAL PROFILE REPORT

PROFILE NAME: **BLATCHFORD DISTRICT ENERGY SYSTEM [DES]**

PROFILE NUMBER: **17-02-2107**

DEPARTMENT: **Integrated Infrastructure Services**

LEAD BRANCH: **Blatchford Redevelopment Project**

PROGRAM NAME:

PARTNER:

BUDGET CYCLE: **2023-2026**

**RECOMMENDED FUNDED**

PROFILE STAGE:	Approved
PROFILE TYPE:	Standalone
LEAD MANAGER:	Tom Lumsden
PARTNER MANAGER:	
ESTIMATED START:	January, 2017
ESTIMATED COMPLETION:	December, 2024

Service Category:	Utilities	Major Initiative:	Blatchford - City Centre Airport Lands
<b>GROWTH</b>	<b>RENEWAL</b>	PREVIOUSLY APPROVED:	19,687
100		BUDGET REQUEST:	3,181
		TOTAL PROFILE BUDGET:	22,868

### PROFILE DESCRIPTION

District Energy system for the Blatchford Redevelopment including preliminary and detailed engineering, construction of infrastructure related to the geo-exchange field, the energy centre and the distribution piping required to be installed with Stage 1 construction.

### PROFILE BACKGROUND

Blatchford will be a world-leading mixed-use community for up to 30,000 people. As set out in Council's vision, this walkable, transit-oriented, family-friendly and sustainable community will be built over 20–25 years, with the first stage starting in 2017.

### PROFILE JUSTIFICATION

On June 10, 2014 City Council approved the Blatchford Concept Plan Implementation report and Business Case report which described the proposed approach to achieve the Council defined vision for the project and the objectives of the Area Redevelopment Plan. The detailed financial analysis for the recommended scenario (5A) was also approved, along with Council's first motion to have administration provide a Capital Profile and funding strategy for Council's consideration. This Capital Profile describes the initial investment required to support the inclusion of a district energy system that uses 100% renewable energy.

### STRATEGIC ALIGNMENT

Blatchford contributes to The Way Ahead by increasing density; to The Way We Grow by being healthy and livable; to The Way We Move by enhancing use of transit, walking and bikes; and to The Way We Green by being a sustainable community.

### ALTERNATIVES CONSIDERED

The Business Case report provided to Executive Committee and City Council also includes an analysis of an option that would provide 70% renewable and 30% non-renewable energy to the Blatchford Redevelopment project. An RFP process is currently underway which will determine the eventual operator and business model for a Blatchford Renewable Energy Utility.

### COST BENEFITS

Project cost estimates include all infrastructure required to construct the first phase of the 100% renewable energy utility, District Energy system on the Blatchford project site to create a self-contained, technically feasible energy system for the entire redevelopment area.

### KEY RISKS & MITIGATING STRATEGY

Key risks include a sustained regional economic slowdown, residential market competition, cost escalation and interest rate risk. Considerable time will be required to develop the contractual arrangements should City Council decide to have the DES constructed and operated by a private entity.

### RESOURCES

The Blatchford Redevelopment team will determine the recommended governance and business model. If an external business model is adopted, the initial investment could be sold to the external party.

### CONCLUSIONS AND RECOMMENDATIONS

It is recommended that funding be allocated for the implementation of the first phase of the 100% renewable District Energy system for the redevelopment project.

### CHANGES TO APPROVED PROFILE

2021 Spring SCBA (#21-25 Admin/BM): As per the 2020 carryforward exercise, \$20,363.27 in self-supporting tax will be transferred from CM-83-8383 (Blatchford Renewable Energy Utility) to 17-02-2107 (Blatchford District Energy System) to fund the 2020 overspend.

# CAPITAL PROFILE REPORT

PROFILE NAME: **Blatchford District Energy System [DES]****RECOMMENDED FUNDED**PROFILE NUMBER: **17-02-2107**PROFILE TYPE: **Standalone**BRANCH: **Blatchford Redevelopment Project**

## CAPITAL BUDGET AND FUNDING SOURCES (000's)

	Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total	
APPROVED BUDGET	Approved Budget												
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	2016 Cap Council	19,442	-	-	-	-	-	-	-	-	-	-	19,442
	2017 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2018 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2019 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2020 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2021 Cap Administrative	245	-	-	-	-	-	-	-	-	-	-	245
	2021 Cap Carry Forward	-130	130	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	19,558	130	-	-	-	-	-	-	-	-	-	19,687
Approved Funding Sources													
Self Supporting-Tax Guaranteed	19,558	130	-	-	-	-	-	-	-	-	-	19,687	
Current Approved Funding Sources	19,558	130	-	-	-	-	-	-	-	-	-	19,687	

BUDGET REQUEST	Budget Request	-	-	2,698	483	-	-	-	-	-	-	-	3,181
	Revised Funding Sources (if approved)												
	Self Supporting-Tax Guaranteed	-	-	2,698	483	-	-	-	-	-	-	-	3,181
	Requested Funding Source	-	-	2,698	483	-	-	-	-	-	-	-	3,181

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	19,558	130	2,698	483	-	-	-	-	-	-	-	22,868
	Requested Funding Source												
	Self Supporting-Tax Guaranteed	19,558	130	2,698	483	-	-	-	-	-	-	-	22,868
	Requested Funding Source	19,558	130	2,698	483	-	-	-	-	-	-	-	22,868

## CAPITAL BUDGET BY ACTIVITY TYPE (000's)

	Activity Type	Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
REVISED BUDGET (IF APPROVED)	Construction	18,159	130	2,698	483	-	-	-	-	-	-	-	21,469
	Design	1,399	-	-	-	-	-	-	-	-	-	-	1,399
	Total	19,558	130	2,698	483	-	-	-	-	-	-	-	22,868

## 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 DISTRICT ENERGY SYSTEM [DES]**  
 PROFILE NUMBER: **17-02-2107**  
 DEPARTMENT: **Integrated Infrastructure Services**  
 LEAD BRANCH: **Blatchford Redevelopment Project**  
 PROGRAM NAME:  
 PARTNER:  
 BUDGET CYCLE: **2023-2026**

**RECOMMENDED FUNDED**

PROFILE STAGE:	Approved
PROFILE TYPE:	Standalone
LEAD MANAGER:	Tom Lumsden
PARTNER MANAGER:	
ESTIMATED START:	January, 2017
ESTIMATED COMPLETION:	December, 2024

Service Category:	Utilities	Major Initiative:	Blatchford - City Centre Airport Lands
<b>GROWTH</b>	<b>RENEWAL</b>	PREVIOUSLY APPROVED:	19,687
100		BUDGET REQUEST:	3,181
		TOTAL PROFILE BUDGET:	22,868

### PROFILE DESCRIPTION

District Energy system for the Blatchford Redevelopment including preliminary and detailed engineering, construction of infrastructure related to the geo-exchange field, the energy centre and the distribution piping required to be installed with Stage 1 construction.

### PROFILE BACKGROUND

Blatchford will be a world-leading mixed-use community for up to 30,000 people. As set out in Council's vision, this walkable, transit-oriented, family-friendly and sustainable community will be built over 20–25 years, with the first stage starting in 2017.

### PROFILE JUSTIFICATION

On June 10, 2014 City Council approved the Blatchford Concept Plan Implementation report and Business Case report which described the proposed approach to achieve the Council defined vision for the project and the objectives of the Area Redevelopment Plan. The detailed financial analysis for the recommended scenario (5A) was also approved, along with Council's first motion to have administration provide a Capital Profile and funding strategy for Council's consideration. This Capital Profile describes the initial investment required to support the inclusion of a district energy system that uses 100% renewable energy.

### STRATEGIC ALIGNMENT

Blatchford contributes to The Way Ahead by increasing density; to The Way We Grow by being healthy and livable; to The Way We Move by enhancing use of transit, walking and bikes; and to The Way We Green by being a sustainable community.

### ALTERNATIVES CONSIDERED

The Business Case report provided to Executive Committee and City Council also includes an analysis of an option that would provide 70% renewable and 30% non-renewable energy to the Blatchford Redevelopment project. An RFP process is currently underway which will determine the eventual operator and business model for a Blatchford Renewable Energy Utility.

### COST BENEFITS

Project cost estimates include all infrastructure required to construct the first phase of the 100% renewable energy utility, District Energy system on the Blatchford project site to create a self-contained, technically feasible energy system for the entire redevelopment area.

### KEY RISKS & MITIGATING STRATEGY

Key risks include a sustained regional economic slowdown, residential market competition, cost escalation and interest rate risk. Considerable time will be required to develop the contractual arrangements should City Council decide to have the DES constructed and operated by a private entity.

### RESOURCES

The Blatchford Redevelopment team will determine the recommended governance and business model. If an external business model is adopted, the initial investment could be sold to the external party.

### CONCLUSIONS AND RECOMMENDATIONS

It is recommended that funding be allocated for the implementation of the first phase of the 100% renewable District Energy system for the redevelopment project.

### CHANGES TO APPROVED PROFILE

2021 Spring SCBA (#21-25 Admin/BM): As per the 2020 carryforward exercise, \$20,363.27 in self-supporting tax will be transferred from CM-83-8383 (Blatchford Renewable Energy Utility) to 17-02-2107 (Blatchford District Energy System) to fund the 2020 overspend.

# CAPITAL PROFILE REPORT

PROFILE NAME: **Blatchford District Energy System [DES]****RECOMMENDED FUNDED**PROFILE NUMBER: **17-02-2107**PROFILE TYPE: **Standalone**BRANCH: **Blatchford Redevelopment Project**

## CAPITAL BUDGET AND FUNDING SOURCES (000's)

	Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total	
APPROVED BUDGET	Approved Budget												
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	2016 Cap Council	19,442	-	-	-	-	-	-	-	-	-	-	19,442
	2017 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2018 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2019 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2020 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2021 Cap Administrative	245	-	-	-	-	-	-	-	-	-	-	245
	2021 Cap Carry Forward	-130	130	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	19,558	130	-	-	-	-	-	-	-	-	-	19,687
Approved Funding Sources													
Self Supporting-Tax Guaranteed	19,558	130	-	-	-	-	-	-	-	-	-	19,687	
Current Approved Funding Sources	19,558	130	-	-	-	-	-	-	-	-	-	19,687	

BUDGET REQUEST	Budget Request	-	-	2,698	483	-	-	-	-	-	-	-	3,181
	Revised Funding Sources (if approved)												
	Self Supporting-Tax Guaranteed	-	-	2,698	483	-	-	-	-	-	-	-	3,181
	Requested Funding Source	-	-	2,698	483	-	-	-	-	-	-	-	3,181

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	19,558	130	2,698	483	-	-	-	-	-	-	-	22,868
	Requested Funding Source												
	Self Supporting-Tax Guaranteed	19,558	130	2,698	483	-	-	-	-	-	-	-	22,868
	Requested Funding Source	19,558	130	2,698	483	-	-	-	-	-	-	-	22,868

## CAPITAL BUDGET BY ACTIVITY TYPE (000's)

	Activity Type	Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
REVISED BUDGET (IF APPROVED)	Construction	18,159	130	2,698	483	-	-	-	-	-	-	-	21,469
	Design	1,399	-	-	-	-	-	-	-	-	-	-	1,399
	Total	19,558	130	2,698	483	-	-	-	-	-	-	-	22,868

## 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 Page 1

PROFILE NAME: <b>DISTRIBUTION PIPING SYSTEM</b>	<b>RECOMMENDED FUNDED</b>
PROFILE NUMBER: <b>21-83-8384</b>	<b>PROFILE STAGE: Approved</b>
DEPARTMENT: <b>Utilities</b>	<b>PROFILE TYPE: Standalone</b>
LEAD BRANCH: <b>Blatchford Renewable Energy Utility</b>	LEAD MANAGER: <b>Tom Lumsden</b>
PROGRAM NAME:	PARTNER MANAGER: <b>Brian Latte</b>
PARTNER: <b>Infrastructure Delivery</b>	ESTIMATED START: <b>January, 2021</b>
BUDGET CYCLE: <b>2023-2026</b>	ESTIMATED COMPLETION: <b>December, 2026</b>

<b>Service Category:</b>		<b>Major Initiative:</b>	
<b>GROWTH</b>	<b>RENEWAL</b>	<b>PREVIOUSLY APPROVED:</b>	<b>8,650</b>
<b>100</b>		<b>BUDGET REQUEST:</b>	<b>4,881</b>
		<b>TOTAL PROFILE BUDGET:</b>	<b>13,531</b>

## PROFILE DESCRIPTION

To maintain consistency with similar utility infrastructure (i.e. Natural Gas), funding needs to be secured to allow for the extension of the Distribution Piping Network concurrently with the other development servicing. The estimated cost for the entire distribution piping network in Blatchford is \$80 Million over the full development horizon. This cost has been included in the financial model for Blatchford Renewable Energy, however there has been no funding approved to date of the installation of this piping.

The Utility's first Energy Center, connected to the first geoechange field under the future storm water pond, has been in operation since late 2019 and is now serving the first 20 customers in the first stage of the Blatchford land development. With full development of stage 1 in Blatchford the Utility is expected to connect 27,000 square meter of space and provide 2,000 kW of thermal energy services. The first Energy Center will also be able to provide energy to the second stage of land development in Blatchford, which is currently prepared for construction. In stage 2 of the land development the Utility is expected to further connect 36,000 square meter of space and provide 2,200 kW of thermal energy services at full stage 2 development.

In 2018 The Northern Alberta Institute of Technology (NAIT) and the City agreed on a land sale for 13.27 hectares of land within the Blatchford Community. This will allow NAIT to advance their Campus Development Plan and become part of the Blatchford community. As a requirement in the land sale agreement the City will have to provide development to the NAIT parcels in Blatchford by 2023.

This Capital Budget adjustment is necessary for the design and delivery of the Distribution Piping System for the current development stage, including the NAIT development. It will further allow for the expansion of the utility pipe network and to follow the growth in the development, representing a prudent and flexible approach to ensure that essential utility services will be provided to future residents, institutions, and businesses in the Blatchford Community.

The following table provides an overview of the timing and costs of the next stages in Distribution Piping System development in Blatchford:

### Stage 1 Residential Development

2021	\$1,600,000
2022	\$0
2023	\$0
Total	\$1,600,000

### Stage 2 Residential Development

2021	\$1,000,000
2022	\$ 250,000
2023	\$0
Total	\$1,250,000

### NAIT Development

2021	\$0
2022	\$4,600,000
2023	\$1,200,000
Total	\$5,800,000

### Summary

2021	\$2,600,000
2022	\$4,850,000
2023	\$1,200,000
Grand Total	\$8,650,000

# CAPITAL PROFILE REPORT

## PROFILE BACKGROUND

The Distribution Piping System transfers energy by connecting the District Energy Centers to the individual properties in Blatchford. It consists of a two water pipe system, supply and return, which runs under the road network in Blatchford and connects to each property line. Blatchford Renewable Energy will own and operate the Distribution Piping System. This Capital Budget adjustment is necessary for the design and delivery of the Distribution Piping System for the current development stages, including the NAIT development. At full build out of Blatchford all the Distribution Piping System will be connected under the Blatchford lands and will supply sustainable heating and cooling energy to the residents and businesses in the community.

## PROFILE JUSTIFICATION

The design and construction of the Distribution Piping System as part of the Blatchford District Energy Sharing System is needed to transfer energy from the generation point to the utility customers. The network of pipes are connecting the Energy Center in the community to the individual parcels and customers. The implementation of the District Energy Sharing System was manifested in the business case approved by Council in December of 2016.

## STRATEGIC ALIGNMENT

Blatchford Renewable Energy was established to help achieve the City's long-term goal of 100 percent renewable energy and carbon neutrality for the Blatchford development. This new City-owned utility owns and operates an innovative District Energy Sharing System in the community.

The establishment and growth of Blatchford Renewable Energy supports City Council's objective of Edmonton becoming a climate resilient City, and aligns with the objectives and actions outlined in the City Plan and the currently updated Community Energy Transition Strategy.

## ALTERNATIVES CONSIDERED

With the establishment of the District Energy Sharing System and Blatchford Renewable Energy (through Utility Bylaw 17943) by City Council and the construction of the first Energy Center in the community, Blatchford Renewable Energy is now connecting the first customers. To allow the growth of the Utility to connect future residents and businesses the design and construction of the Distribution Piping is necessary. The alternative would be to not connect these customers to the District Energy Sharing System, which would be contradictory to the Utility Bylaw.

## COST BENEFITS

The construction of the Distribution Piping System will allow the potential connection of approximately 250,000 square meter of development space to the District Energy Sharing System and provide about 32,000 kw of thermal energy, reducing significantly greenhouse gas emissions. These connections will in turn generate revenue for the Utility in terms of fees and ongoing rate revenue, which forms a key part of the Utility's financial model.

## KEY RISKS & MITIGATING STRATEGY

The key risk for this capital profile is the proper design and construction of the Distribution Piping System as part of the District Energy Sharing System in Blatchford. This risk is mitigated by professional project management oversight by qualified City of Edmonton project managers.

## RESOURCES

The work to design and construct the Distribution Piping System will be conducted by qualified consultants and contractors and will be managed by Blatchford Renewable Energy staff. No additional resource impact is anticipated.

## CONCLUSIONS AND RECOMMENDATIONS

This Capital Profile is needed for the design & construction of the Distribution Piping System as part of the District Energy Sharing System for the current development stages in Blatchford, including NAIT. It allows the potential connection of 250,000 m<sup>2</sup> of development space & provides about 32,000 kw of thermal energy, significantly reducing greenhouse gas emissions. These connections will generate revenue for Blatchford Renewable Energy, which forms a key part of the Utility's financial model.

The recommendation is to approve the profile a total of \$ 8.65M over 2021, 2022 & 2023, for \$2.6M, \$4.85M, and \$1.2M respectively.

The work to design & construct the Distribution Piping System will be conducted by qualified consultants & contractors & will be managed by the Blatchford Branch.



# CAPITAL PROFILE REPORT

PROFILE NAME: **Distribution Piping System****RECOMMENDED FUNDED**PROFILE NUMBER: **21-83-8384**PROFILE TYPE: **Standalone**BRANCH: **Blatchford Renewable Energy Utility**

## CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
	Approved Budget												
Original Budget Approved		-	-	-	-	-	-	-	-	-	-	-	-
2021 Cap Capital Budget Adj (one-off)		2,600	4,850	1,200	-	-	-	-	-	-	-	-	8,650
2021 Cap Carry Forward		-2,600	2,600	-	-	-	-	-	-	-	-	-	-
Current Approved Budget		-	7,450	1,200	-	-	-	-	-	-	-	-	8,650
Approved Funding Sources													
Self Supporting-Tax Guaranteed		-	7,450	1,200	-	-	-	-	-	-	-	-	8,650
Current Approved Funding Sources		-	7,450	1,200	-	-	-	-	-	-	-	-	8,650

BUDGET REQUEST	Budget Request	-	-	1,220	1,220	1,220	1,220	-	-	-	-	-	4,881
	Revised Funding Sources (if approved)												
	Self Supporting-Tax Guaranteed	-	-	1,220	1,220	1,220	1,220	-	-	-	-	-	4,881
Requested Funding Source	-	-	1,220	1,220	1,220	1,220	-	-	-	-	-	-	4,881

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	7,450	2,420	1,220	1,220	1,220	-	-	-	-	-	13,531
	Requested Funding Source												
	Self Supporting-Tax Guaranteed	-	7,450	2,420	1,220	1,220	1,220	-	-	-	-	-	13,531
Requested Funding Source	-	7,450	2,420	1,220	1,220	1,220	-	-	-	-	-	-	13,531

## CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
	Construction		-	7,450	2,420	1,220	1,220	1,220	-	-	-	-	-
Total		-	7,450	2,420	1,220	1,220	1,220	-	-	-	-	-	13,531

## 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 Page 1

PROFILE NAME:	<b>ENERGY CENTER #4 - BLATCHFORD RENEWABLE ENERGY</b>	<b>UNFUNDED</b>
PROFILE NUMBER:	<b>23-83-8385</b>	<b>PROFILE STAGE: Entry - Create Profile</b>
DEPARTMENT:	<b>Integrated Infrastructure Services</b>	<b>PROFILE TYPE: Standalone</b>
LEAD BRANCH:	<b>Infrastructure Delivery</b>	LEAD MANAGER: <b>Tom Lumsden</b>
PROGRAM NAME:		PARTNER MANAGER: <b>Christian Felske</b>
PARTNER:	<b>Blatchford Renewable Energy Utility</b>	ESTIMATED START: <b>January, 2023</b>
BUDGET CYCLE:	<b>2023-2026</b>	ESTIMATED COMPLETION: <b>December, 2026</b>

<b>Service Category:</b>	<b>Utilities</b>	<b>Major Initiative:</b>	<b>Blatchford - City Centre Airport Lands</b>
<b>GROWTH</b>	<b>RENEWAL</b>	<b>PREVIOUSLY APPROVED:</b>	<b>-</b>
<b>100</b>		<b>BUDGET REQUEST:</b>	<b>14,676</b>
		<b>TOTAL PROFILE BUDGET:</b>	<b>14,676</b>

## PROFILE DESCRIPTION

Blatchford Renewable Energy (BRE) is a city-owned utility providing sustainable heating, cooling and hot water energy services to the residents and businesses in the Blatchford community. Since the utility was established in 2016, BRE has developed an ambient temperature District Energy Sharing System (DESS) to support City Council's overall vision for Blatchford:

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.

The utility's first Energy Center is connected to a large geo-exchange field under the first stormwater pond in the community. The utility constructed this infrastructure in 2018 and 2019 and it was commissioned for operation during the third quarter of 2019. The utility has been operating successfully since 2020 when the first customer building was connected to the utility. Currently, 45 customer buildings are receiving sustainable heating and cooling energy services.

In order to be able to continue to provide sustainable energy in alignment with the vision for Blatchford, BRE is currently working on a two pronged approach to plan and build its infrastructure for the next decade, based on an updated development and construction scenarios for the community:

1. Upgrade of the existing Energy Center One to provide energy for land development stages in Blatchford West which are anticipated to require services for development growth until 2026. At full capacity, Energy Center One will be able to generate 5 MW of heating and 3.2 MW of cooling energy.
2. Plan and design the Sewer Heat Exchange Energy Center to provide energy for land development stages in the Blatchford Market Area which are slated to require services between 2026 and 2030. At full capacity, the Sewer Heat Exchange Energy Center will be able to generate 12.1 MW of heating and 10.3 MW of cooling energy.

This business case focuses on the development of the Sewer Heat Exchange Energy Center as it is a new facility and assumptions used for the design of the facility used in the first business case in 2014 will need to be updated. Secondly, changes to external project conditions have occurred in the last few years, mainly around EPCOR's expected reduced sewer flow to the facility in the future. This business case also needs to recognize the increased financial pressure for the utility to close the initial funding gap that exists in its long term financial forecast, while utility growth continues.

As a result of this recommendation, the planning and design portion of the project will be funded through the existing capital profile CM-83-8383 (Blatchford Renewal Energy Utility P&D Growth) in the amount of \$0.6 million, resulting in a budget request of \$14.7 million for the delivery of this project.

## PROFILE BACKGROUND

In order to be able to continue to provide sustainable energy in alignment with the vision for Blatchford, BRE is currently working on a two pronged approach to plan and build its infrastructure for the next decade, based on an updated development and construction scenarios for the community. This business case focuses on the development of the Sewer Heat Exchange Energy Center as it is a new facility and assumptions used for the design of the facility used in the first business case in 2015 will need to be updated. Secondly, changes to external project conditions have occurred in the last few years, mainly around EPCOR's expected reduced sewer flow to the facility in the future. This business case also needs to recognize the increased financial pressure for the utility to close the initial funding gap that exists in its long term financial forecast, while utility growth continues.

## STRATEGIC ALIGNMENT

The vision for the Blatchford community development including Utility is aligned with the major key planning documents of the City of Edmonton. It is connected and supports all four of City Council's strategic goals: Healthy City, Urban Places, Regional Prosperity and Climate Resilience. District Energy, represents a key strategy of Edmonton's Community Energy Transition Strategy. 36% of Greenhouse Gas Emissions Reductions are to come from Energy System Transformation. This includes both an emissions neutral electricity grid and a "City-wide decarbonized district energy network by 2050.

# CAPITAL PROFILE REPORT

## ALTERNATIVES CONSIDERED

### Option 1: Status Quo - Sewer Heat Exchange Energy Center

This option includes the continuation of the design and construction activities of the Sewer Heat Exchange Energy Center, to be ready by 2026, in alignment with the utility master plan and the Blatchford vision.

### Option 2: Alternative - Geo-Exchange Energy Center

This option would include an equivalently sized geo-exchange based Energy Center instead of the Sewer Heat Exchange Energy Center, utilizing existing space in the development, for commissioning in 2026.

### Option 3: Initial construction of peaking Energy Center, in advance of the Sewer Heat Exchange Energy Center

This option would see a temporary delay of the construction of the Sewer Heat Exchange Energy Center, while providing the required thermal energy required for the community through a previously planned peaking Energy Center (#4), which would be advanced sooner than in the planned order of development.

## COST BENEFITS

For this business case the following tangible and intangible benefits were analyzed: Provision of reliable thermal energy, alignment with sustainability targets for Blatchford, operability, and reputational risks. The cost analysis were done based on capital costs, spend capital for full utility development, operating costs, present value of project costs for different land development scenarios. In addition the impact of greenhouse gas reductions and renewable energy generation were analyzed.

## KEY RISKS & MITIGATING STRATEGY

A detailed risk matrix was developed taking into account environmental, economical/ financial, technology, operational, and development impact risks. No major risks were identified except a high financial risk for option 2. In the end this option was not further proposed, so no mitigation strategy was necessary.

## RESOURCES

If approved by Council the development will follow the Project Development and Delivery Model . This ensures enhanced capital infrastructure project oversight. This process involved structured reviews of projects at Checkpoints #1-5) throughout the project life cycle.

## CONCLUSIONS AND RECOMMENDATIONS

Based on the available information and data provided in this business case the recommendation is to advance option 3: Initial construction of peaking Energy Center, in advance of the Sewer Heat Exchange Energy Center. In comparison with the alternatives, option 3 results in the lowest initial capital costs and hence provides some financial relief in the utility long term funding gap, while fully providing the necessary generation capacity to grow the utility customer base. It also provides the best ability to adjust utility capacity to development and building construction. The impact on GHG reduction and renewables production is small and short lived. A capital profile of 14.7 million to construct the peaking Energy Center is requested for approval in the 2023 to 2026 budget documents.

# CAPITAL PROFILE REPORT

PROFILE NAME: **Energy Center #4 - Blatchford Renewable Energy****UNFUNDED**PROFILE NUMBER: **23-83-8385**PROFILE TYPE: **Standalone**BRANCH: **Infrastructure Delivery**

## CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
	Approved Budget	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST	Budget Request	-	-	-	436	5,680	8,560	-	-	-	-	-	14,676
	Revised Funding Sources (if approved)												
	Self Supporting-Tax Guaranteed	-	-	-	436	5,680	8,560	-	-	-	-	-	14,676
	Requested Funding Source	-	-	-	436	5,680	8,560	-	-	-	-	-	14,676

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	-	-	436	5,680	8,560	-	-	-	-	-	14,676
	Requested Funding Source												
	Self Supporting-Tax Guaranteed	-	-	-	436	5,680	8,560	-	-	-	-	-	14,676
	Requested Funding Source	-	-	-	436	5,680	8,560	-	-	-	-	-	14,676

## CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
		Construction	-	-	-	436	5,680	8,560	-	-	-	-	-
	Total	-	-	-	436	5,680	8,560	-	-	-	-	-	14,676

## 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-