



To: General Purposes Committee

Date: June 10, 2020

From: Peter Russell, MCIP RPP
Director, Sustainability and District Energy

File: 12-8060-20-009921/Vol 01

Re: City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No. 10187

Staff Recommendation

That the City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No. 10187 presented in the “City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No. 10187” report dated June 10, 2020, from the Director, Sustainability and District Energy be introduced and given first, second, and third readings.

Peter Russell, MCIP RPP
Director, Sustainability and District Energy
(604-276-4130)

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Development Applications Law	<input type="checkbox"/> <input type="checkbox"/>	
REVIEWED BY SMT	INITIALS: AN 	APPROVED BY CAO (Acting)

Staff Report

Origin

The purpose of this report is to recommend expansion of the City Centre District Energy Utility (CCDEU) service area to include the mixed use development located at 5500 No. 3 Rd, associated with rezoning application RZ 19-858804.

This report supports Council's Strategic Plan 2018-2022 Strategy #2: A Sustainable and Environmentally Conscious City:

Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City's unique biodiversity and island ecology.

2.1 Continued leadership in addressing climate change and promoting circular economic principles.

2.2 Policies and practices support Richmond's sustainability goals.

In February 2018, as directed by LIEC Board and as endorsed by Council, LIEC executed a Memorandum of Understanding (MOU) with Corix Utilities Inc. (Corix) to conduct feasibility analysis to design, build, finance, and operate a district energy utility in Richmond's City Centre area.

While this CCDEU feasibility analysis has been progressing, staff identified the opportunity to secure a customer base for the immediate implementation of GHG emissions reduction through the rezoning and/or OCP amendment application process. To date, nine development applicants have committed to construct and transfer low carbon energy plants to the City or LIEC, at no cost to the City or LIEC, through either of these processes, so that LIEC can provide immediate service to these customers. Council adopted the CCDEU Bylaw No. 9895 in September 2018 to secure the commitment from developments. See Attachment 1 for a brief summary of the currently committed spaces under the CCDEU Bylaw along with an overview of the other DEU service areas.

Analysis

The development rezoning application (RZ 19-858804) was granted third reading at the Public Hearing held on April 20th, 2020. The applicant is actively working to fulfill the rezoning considerations and the associated Development Permit application for the project for the City's Development Permit Panel's review and Council consideration.

The 15-storey building containing street-fronting commercial space will be comprised of approximately 104,045 ft² of residential space for market rental housing and 5,732 ft² of commercial space.

Expanding the CCDEU service area to include a development of this type results in the following direct benefits:

- Immediate reduction of greenhouse gas (GHG) emissions compared to business as usual;

- Expansion of LIEC's customer base under a positive stand-alone business case while the City Centre strategy develops;
- Providing financial and environmental stability to customers; and
- Increasing community's energy resiliency.

The rezoning considerations for this development include a requirement for a legal agreement that, if the City elects, would require the developer to transfer ownership of the development's centralized low carbon energy plant to the City or LIEC at no cost to the City or LIEC.

LIEC staff conducted business case analysis for owning and operating this development's energy plant which yielded positive results. Staff used the same rate structure applied to the other developments under the CCDEU Bylaw service area, which is competitive with conventional energy costs providing the same level of service. The rate structure and actual rate to customers will be refined once the costs have been confirmed through the design and engineering phase for the first developments within the CCDEU Bylaw service area.

The LIEC Board of Directors recommends expanding the CCDEU Bylaw service area to include the mixed-use development located at 5500 No. 3 Rd.

Financial Impact

The centralized energy system will be designed and constructed by developers at their cost. Costs incurred by LIEC for engineering support and operations and maintenance will be funded from LIEC capital and operating budgets. All LIEC costs will be recovered from customers' fees.

Conclusion

Expanding services in the City Centre area to include the mixed residential and commercial development proposed at 5500 No. 3 Rd (RZ 19-858804) will allow for the immediate expansion of LIEC's customer base and enhanced opportunities for connectivity to future low-carbon district energy systems in Richmond's City Centre. In addition, the inclusion of the subject development in the City Centre district energy system will increase the community's energy resiliency by taking advantage of the system's ability to utilize different fuel sources and the future fuel switching capability of the technology.



Peter Russell, MCIP RPP
Director, Sustainability and District Energy
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PR:cd

Att. 1: District Energy in Richmond
Att. 2: Map of Current and Future District Energy Utility Areas in Richmond

Attachment 1 – District Energy in Richmond

Richmond’s 2041 Official Community Plan (OCP) establishes a target to reduce greenhouse gas (GHG) emissions 33 per cent below 2007 levels by 2020 and 80 per cent by 2050. The OCP also aims to reduce energy use 10 per cent below 2007 levels by 2020. The City identified district energy utilities (DEUs) as a leading strategy to achieve City’s GHG reduction goals.

The City incorporated Lulu Island Energy Company Ltd. (LIEC) in 2013 for the purposes of carrying out the City’s district energy initiatives. LIEC owns and operates the Alexandra District Energy (ADEU) and Oval Village District Energy (OVDEU) Utilities and advances new district energy opportunities. Table 1 below provides a summary of the developments connected under the DEU service areas to-date. Attachment 2 shows current and planned future DEU areas.

Table 1 – District Energy Utility Service Areas

	Buildings To-Date	Residential Units To-Date	Floor Area	
			To-Date	Build-out
Alexandra District Energy Utility	10	1,736	1.9M ft ²	4.4M ft ²
Oval Village District Energy Utility	9	1,990	2.2M ft ²	6.4M ft ²
City Centre District Energy Utility	9 ⁽¹⁾	3,239 ⁽¹⁾	4.6M ft ² ⁽¹⁾	48M ft ²
DEU-Ready Developments ⁽²⁾	17	4,524	5.3M ft ²	N/A
Total Connected Floor Area			4.1M ft² ⁽³⁾	58.8Mft²

(1) Commitments secured from upcoming developments in the City Centre; first connection expected in 2021.

(2) DEU-Ready developments are designed to connect to the City Centre district energy system at a future point.

(3) The “To-Date Connected Floor Area” figure corresponds to constructed developments currently served by a DEU.

Alexandra District Energy Utility (ADEU)

ADEU provides heating and cooling services to seven residential buildings in the ADEU service area, the large commercial development at “Central at Garden City”, the Richmond Jamatkhana temple and Fire Hall No. 3, comprising over 1,735 residential units and over 1.9 million square feet of floor area. While some electricity is consumed for pumping and equipment operations, almost 100% of this energy is currently produced locally from geo-exchange fields in the greenway corridor and West Cambie Park, and highly efficient air source heat pumps.

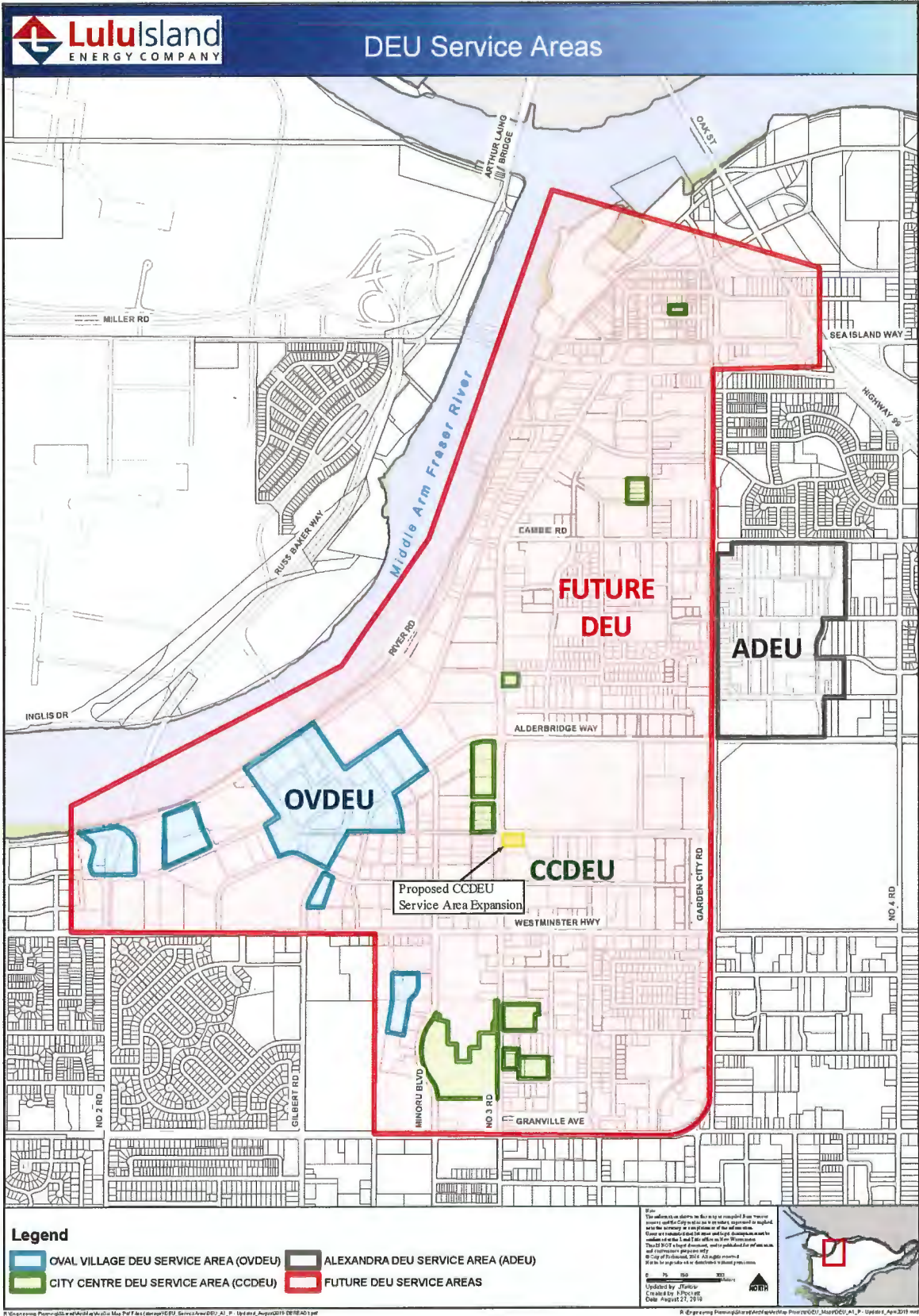
Oval Village District Energy Utility (OVDEU)

OVDEU services nine buildings in the OVDEU service area, containing over 1,900 residential units. Energy is currently supplied from two interim energy centres with natural gas boilers which combined provide 11 MW of heating capacity. When enough buildings are connected to the system, a permanent energy centre will be built which will produce low-carbon energy. OVDEU is planned to harness energy from the Gilbert Trunk sanitary force main sewer through the implementation of the permanent energy centre in 2025.

City Centre District Energy Utility (CCDEU)

Nine developments, comprising approximately 4.6 million square feet of residential, commercial, and hotel uses, have committed to construct and transfer low carbon energy plants to the City or LIEC at no cost to the City or LIEC. LIEC will operate and maintain these energy plants and provide heating and cooling services to these developments.

Attachment 2 – Map of Current and Future District Energy Utility Areas in Richmond





City of Richmond

Bylaw 10187

City Centre District Energy Utility Bylaw No. 9895 Amendment Bylaw No. 10187

The Council of the City of Richmond enacts as follows:

1. The **City Centre District Energy Utility Bylaw No. 9895** is further amended:
 - (a) by deleting Schedule A (Boundaries of Service Area) in its entirety and replacing it with a new Schedule A attached as Schedule A to this Amendment Bylaw; and
 - (b) by deleting Schedule E (Energy Generation Plant Designated Properties) in its entirety and replacing it with a new Schedule E attached as Schedule B to this Amendment Bylaw.

2. This Bylaw is cited as “**City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No. 10187**”.

FIRST READING

SECOND READING

THIRD READING

ADOPTED

CITY OF RICHMOND
APPROVED for content by DS
<i>1021</i>
APPROVED DS
<i>BRB</i>

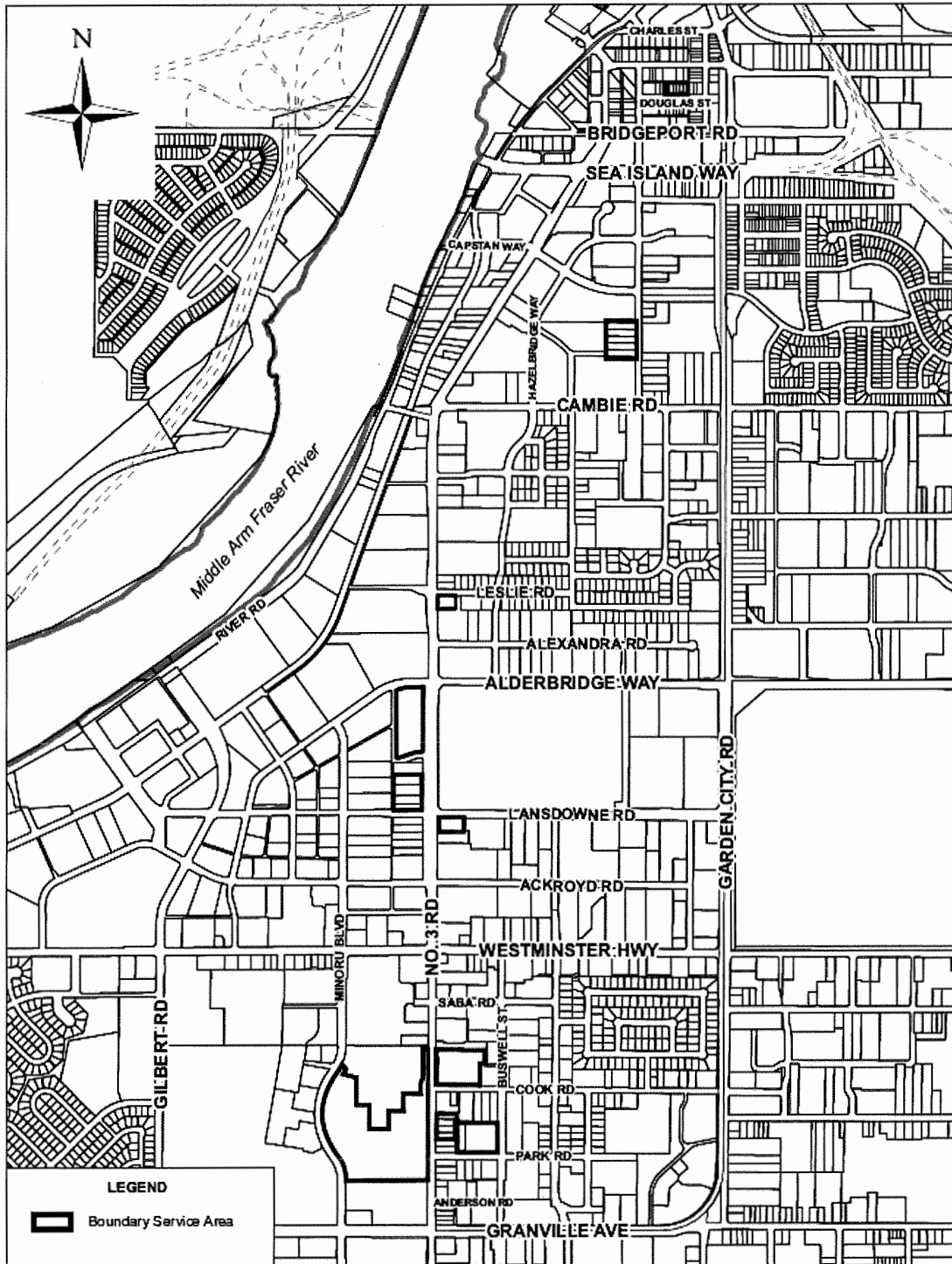
MAYOR

CORPORATE OFFICER

Schedule A to Amendment Bylaw No. 10187

SCHEDULE A to BYLAW NO. 9895

Boundaries of Service Area



Schedule B to Amendment Bylaw No. 10187

SCHEDULE E to BYLAW NO. 9895

Energy Generation Plant Designated Properties

