



City of Richmond

Report to Committee

To: General Purposes Committee **Date:** February 5, 2021
From: Peter Russell, MCIP RPP **File:** 01-0060-20-LIEC1/2021-
 Director, Sustainability and District Energy Vol 01
Re: **City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No.10245**

Staff Recommendation

That the City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No. 10245 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	<input checked="" type="checkbox"/>	
Law	<input checked="" type="checkbox"/>	
REVIEWED BY SMT	INITIALS:	APPROVED BY CAO

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 8320, 8340, 8360 and 8440 Bridgeport Road and 8311 and 8351 Sea Island Way, associated with rezoning application RZ 13-628557 and corresponding Zoning Text Amendment application ZT 19-875774.

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 the 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, ten 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 spaces currently committed under the CCDEU Bylaw along with an overview of the other DEU service areas.

Analysis

The development's revised rezoning application (RZ13-628557) was granted third reading at the Public Hearing held on December 14th, 2020. The applicant is actively working to fulfill the rezoning considerations and associated Development Permit application for the project for the City's Development Panel's review and Council consideration.

The mixed-use development will be located at 8320, 8340, 8360 and 8440 Bridgeport Road and 8311 and 8351 Sea Island Way (Attachment 1). The mixed-use development will consist of three towers comprised of approximately 10,500 ft² of retail and restaurant space, 191,500 ft² of hotel space, and 101,000 ft² of commercial office and university education space, amounting to a total amounting space of approximately 303,000 ft² floor area.

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 rate structure adopted by Council on November 7, 2020 under the CCDEU Bylaw service area, which is competitive with conventional energy costs providing the same level of service.

The LIEC Board of Directors recommends expanding the CCDEU Bylaw service area to include the mixed-use development located at 8320, 8340, 8360 and 8440 Bridgeport Road and 8311 and 8351 Sea Island Way.

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 8320, 8340, 8360 and 8440 Bridgeport Road and 8311 and 8351 Sea Island Way (RZ 13-628557) 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.



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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	12	2,200	2.4M ft ²	4.4M ft ²
Oval Village District Energy Utility	10	2,277	2.6M ft ²	6.4M ft ²
City Centre District Energy Utility	10 ⁽¹⁾	3,388 ⁽¹⁾	4.7M 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 ft^{2 (3)}	58.8M ft²

(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.

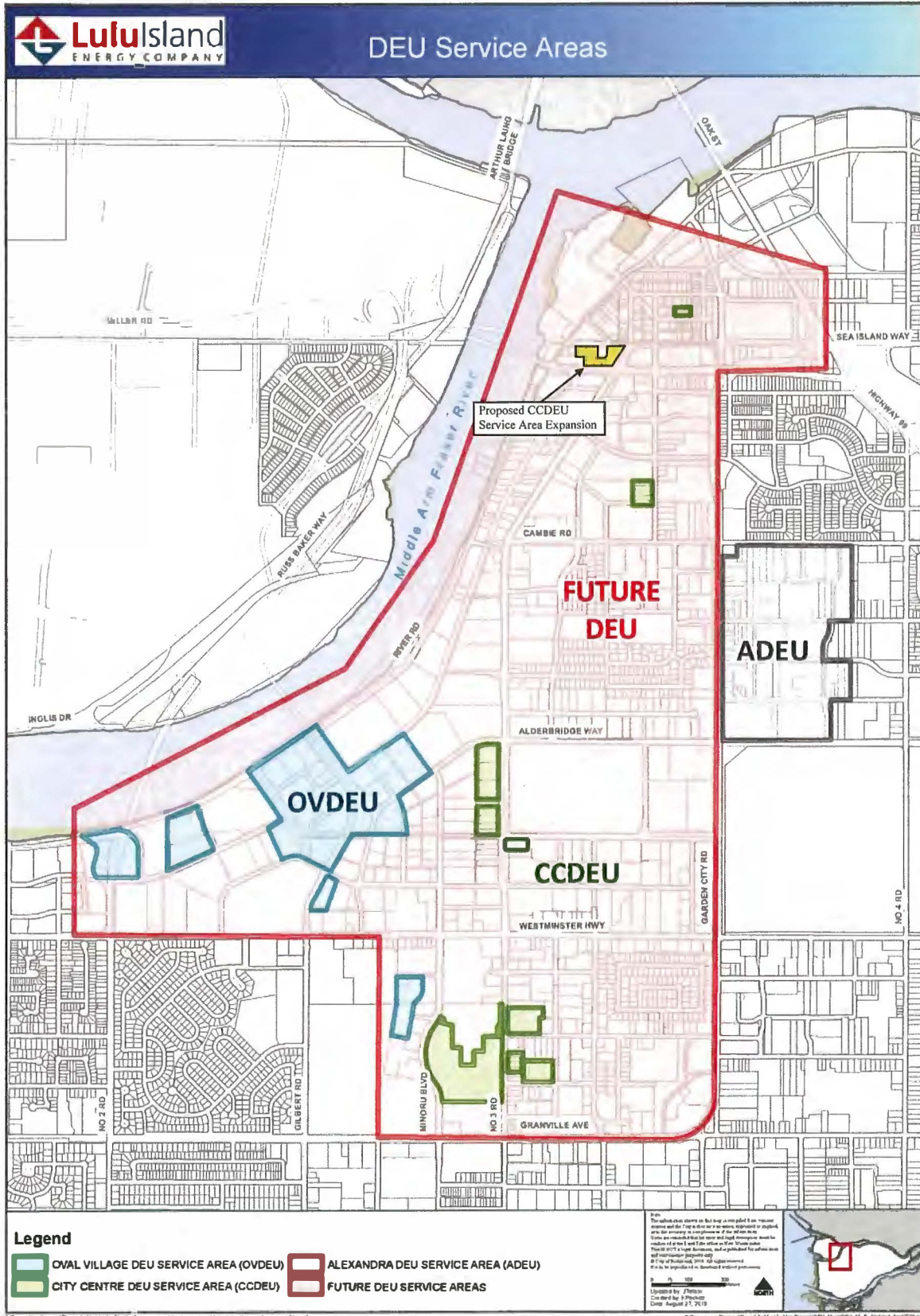
Oval Village District Energy Utility (OVDEU)

OVDEU services nine buildings in the OVDEU service area, containing over 2,270 residential units. Energy is currently supplied from two interim energy centres with natural gas boilers which combined provide 15 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)

Ten developments, comprising approximately 4.7 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 Centre District Energy Utility Bylaw No. 9895
Amendment Bylaw No. 10245

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. 10245**”.

FIRST READING

SECOND READING

THIRD READING

ADOPTED

CITY OF RICHMOND
APPROVED for content by originating dept.
<i>[Signature]</i>
APPROVED for legality by Solicitor
<i>BRB</i>

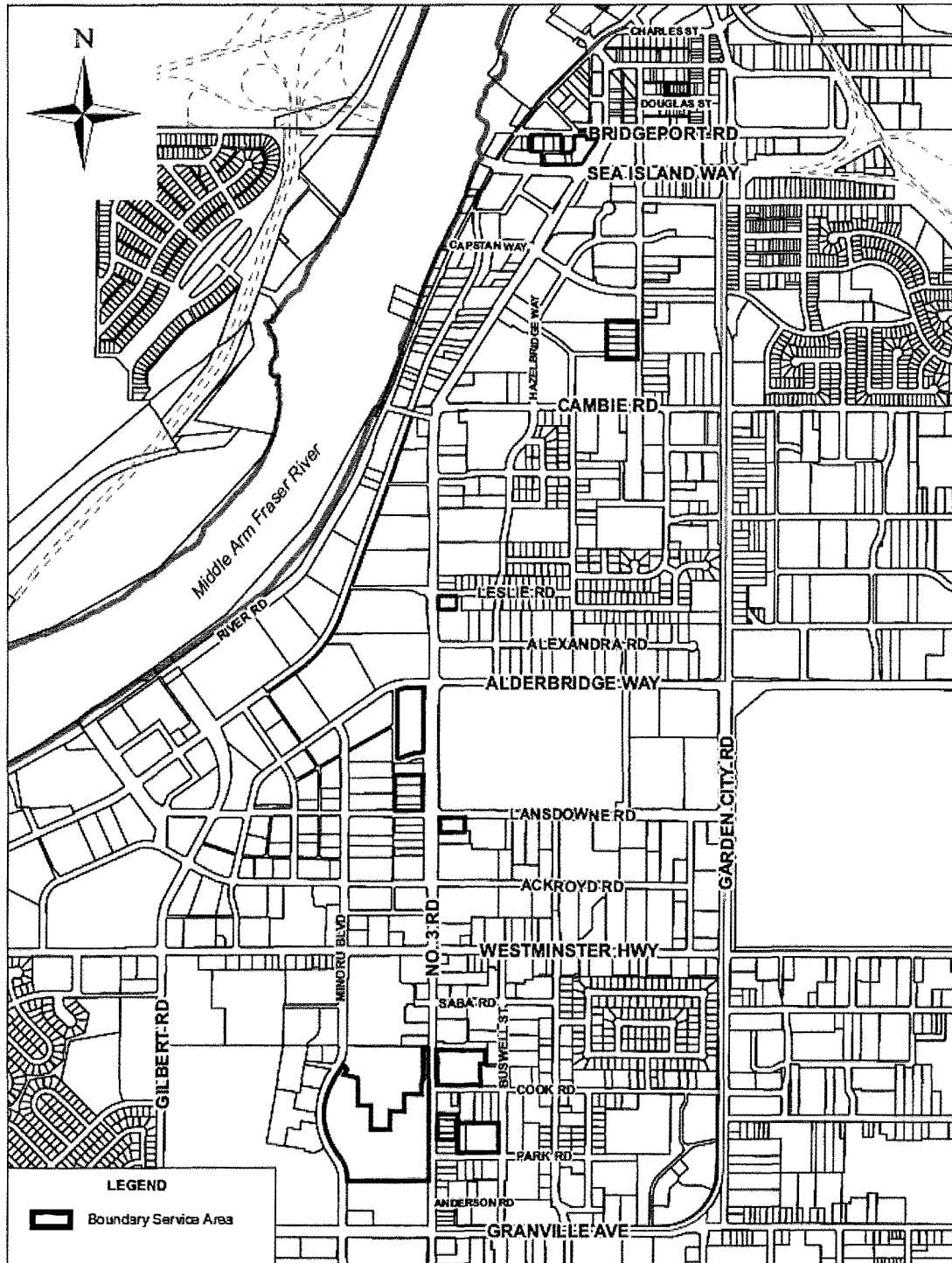
MAYOR

CORPORATE OFFICER

Schedule A to Amendment Bylaw No. 10245

SCHEDULE A to BYLAW NO. 9895

Boundaries of Service Area



Schedule B to Amendment Bylaw No. 10245

SCHEDULE E to BYLAW NO. 9895

Energy Generation Plant Designated Properties

