



City of Richmond

Report to Committee

To: General Purposes Committee

Date: September 28, 2011

From: John Irving, P.Eng. MPA
Director, Engineering

File: 10-6340-20-
P.11206/Vol 01

Re: Alexandra District Energy Utility – Phase II Construction

Staff Recommendation

That the Chief Administrative Officer and the General Manager of Engineering and Public Works be authorized to execute a Change Order to include Phase II works for the Alexandra District Energy Utility and increase the maximum upset price of the Design-Build Agreement with Oris Geo Energy Ltd. to \$4.8 million.

John Irving, P.Eng. MPA
Director, Engineering
(604-276-4140)

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ROUTED TO:		CONCURRENCE		CONCURRENCE OF GENERAL MANAGER	
Budgets		Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>
Development Applications		Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>
Parks		Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>
Sustainability		Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>
REVIEWED BY TAG		YES		NO	
		<i>CAC</i> <input checked="" type="checkbox"/>		<input type="checkbox"/>	
REVIEWED BY CAO		YES		NO	
		<i>[Signature]</i> <input checked="" type="checkbox"/>		<input type="checkbox"/>	

Staff Report

Origin

At the Regular Council Meeting of January 24, 2011, Council adopted the Alexandra District Energy Utility Bylaw 8641. Subsequently, on February 28, 2011, the Design-Build Agreement was awarded to Oris Geo Energy Ltd. with a maximum upset price of \$3.5 million. The total project budget approved by Council in the 2011 Capital Budget was \$6.0 million

The purpose of this report is to seek Council Authority to increase the scope of the Design-Build Agreement to allow servicing of new development in the Alexandra District Energy Utility (ADEU) Service Area.

Analysis

The primary strategy for phasing construction of the ADEU is to match service capacity closely with demand at any given stage. In this way, capital expenditures that don't immediately generate revenue are minimised, and payback periods are reduced.

The current Design-Build Agreement with Oris Geo Energy Ltd. was awarded on February 2011 with an upset price of \$3.5M and includes the design and installation of geothermal wells in the West Cambie Greenway, an Energy Centre building, mechanical equipment, and distribution piping to Oris's Remy and Alexandra Gate developments. This scope of work is defined as Phase I and is required to service the Oris developments with some excess capacity in the well-field.

The original agreement called for Phase I to be in service by July 29, 2011 to meet the initial occupancy dates for the Remy. On May 3, 2011, a fire occurred at the partially completed Remy site and hence the occupancy and service dates have been revised to the second quarter of 2012. Phase I works are approximately 30% complete and are on schedule and on budget.

Based on the current construction schedules provided by developers inside the ADEU service area, an additional four developments (per table below, and mapped in **Attachment 1**) could now require ADEU service in the same timeframe as the Remy and Alexandra Gate projects.

	sq ft	Residential Units	Estimated First Occupancy Date*
Remy	174k	251	2012 Q2
Alexandra Gate	177k	193	2013 Q3
Mayfair Place	349k	358	2012 Q2
Villa Esperanza	219k	245	2013 Q1
9500 Cambie	109k	135	2013 Q4
Smart Centres		Commercial	2013 Q3

*Almost all development projects are phased and full occupancy occurs over the course of several quarters after the first occupancy date.

Given these schedules, ADEU capacity beyond that currently defined for Phase I will need to be in place in 2012. Works required to create this additional capacity are defined as Phase II and include an upsized gas boiler, fluid cooler, service connection piping, and other mechanical equipment. The combined Phase I and II works would provide service capacity for approximately 50% of the residential floor space defined in the above table and would meet demand into early 2013, at which point Phase III would be required. Smart Centres would be serviced by Phase III works in this scenario.

Phase II works are estimated to cost \$1.3M as detailed in **Attachment 2**.

There are two options for delivering Phase II works as follows:

Option 1 – Complete Phase II under the current Design-Build Agreement (Recommended)

Oris has received contractor quotes for the completion of Phase II works. City staff and consultants have reviewed the quotes and they are competitive and provide good value. Oris would integrate the Phase II works with Phase I.

Compared to Option 2, completion of these works under an expanded Design-Build Agreement provides a higher level of price certainty, accelerated delivery and reduced coordination and administration costs.

Staff recommend that authority be given to expand scope under the current Design-Build Agreement to include Phase II works at an additional upset price of \$1.3M, to bring the total Design-Build Agreement upset price to \$4.8M.

Depending on the progression of development schedules over the next 4 months, it may be beneficial to delay the fluid chiller expansion (estimated cost of \$550k including contingency). As such, with the recommended authority, staff would hold the fluid chiller expansion as an option, temporarily excluding it from the Design Build Agreement. The first revision to the Design-Build Agreement would then raise the upset price to \$4.25M, with possible future inclusion of the fluid chiller bringing the Agreement to the full \$4.8M.

Option 2 –Complete Phase II under a New Contract (Not Recommended)

In this option, Oris would complete the Phase I works under the current Design-Build Agreement, and Phase II work would be designed and procured through public tender. Given current schedules, this work would likely overlap with completion of Phase I and would need to be coordinated with Oris at additional cost.

The primary option for expansion beyond Phase II is the development of a geothermal well-field in the park south of Odlin Road, with gas boilers for peak loads; however all options for Phase III expansion will continue to be explored by staff. Staff will bring forward in 2012 options for Phase III expansion works.

Staff will also bring forward in 2012 options and recommendations for future governance of the ADEU including updated models for expanding the utility through the service area.

Financial Impact

As part of the 2011 Capital Budget, Capital Account 40598 – Alexandra District Energy Utility was approved with a total budget of \$6M.

Inclusion of the Phase II works at a value of \$1.3M in the Design-Build Agreement will increase the value of the agreement to \$4.8M, which is within the total capital budget of \$6M, as detailed in **Attachment 2**.

As noted in previous ADEU reports, all capital costs will be fully recovered through ADEU revenue.

Conclusion

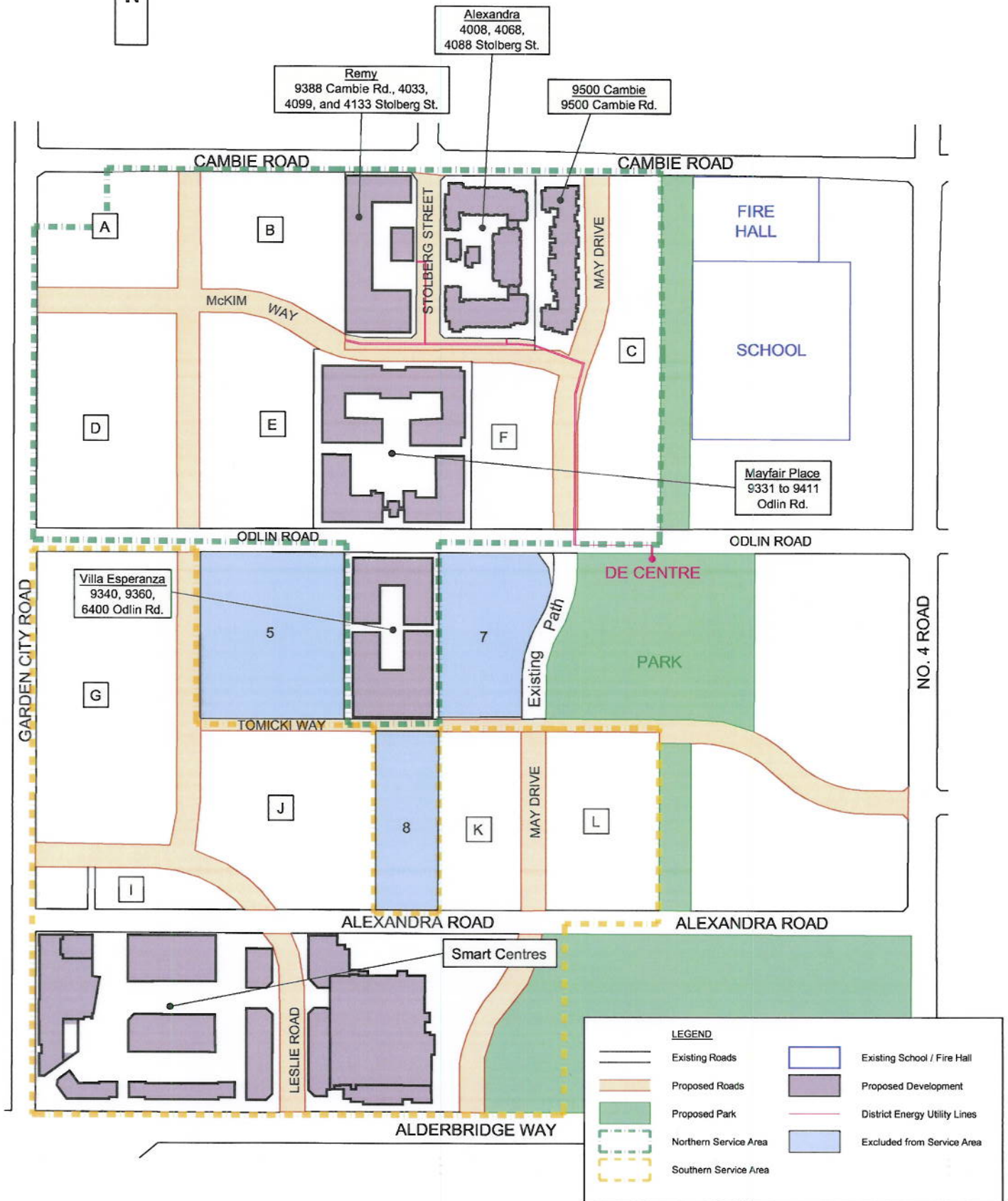
Development in the Alexandra District Energy Utility service area is continuing at a fast pace. Based on the current information provided by the developers, the ADEU will require expansion beyond Phase I in 2012.

To take advantage of cost and scheduling benefits, staff recommend that the Phase II expansion be added to the Design-Build Agreement with Oris Geo Energy Ltd.



Milton Chan, P.Eng.
Senior Project Engineer
(604-276-4377)

MC:mc



Current Alexandra District Energy Utility Budget

Budget Allocated to this Project	
Capital Project 40598 - 2011 Alexandra District Energy Utility	\$ 6,000,000.00
Total Capital Budget	\$ 6,000,000.00
Estimated Costs	
Phase One	
Hemmera Design Reviews / Field Services	\$ 60,000.00
Hemmera Preliminary Design Services	\$ 41,000.00
Corix Design Reviews	\$ 20,000.00
Property Acquisition	\$ 90,000.00
Legal Fees	\$ 100,000.00
Non-recoverable PST	\$ 5,442.50
Engineering Staff Capital Costs	\$ 75,000.00
10% Contingency	\$ 39,144.25
Phase One Design / Build Agreement	\$ 3,500,000.00
Phase One Total	\$ 3,930,586.75
Phase Two	
Phase Two Design / Build	
Energy Centre Expansion / Mechanical Equipment	\$ 550,000.00
Service Connection to Orchard Development	\$ 90,000.00
Fluid Chiller Expansion	\$ 500,000.00
10% Contingency	\$ 114,000.00
Non-recoverable PST	\$ 21,945.00
Phase Two Design / Build Subtotal	\$ 1,275,945.00
Phase Two Design Reviews / Field Services	\$ 50,000.00
Phase Two Total	\$ 1,325,945.00
Total Estimated Costs	\$ 5,256,531.75
Capital Budget Remaining	\$ 743,468.25