

REGULAR COUNCIL

TO: Mayor & Council **DATE: February 16, 2016**

FROM: General Manager, Engineering **FILE: 5515-102**

**SUBJECT: Award of Contract M.S. 5515-102 D1
West Village Park and District Energy Plant Project**

RECOMMENDATION

The Engineering Department recommends that Council:

1. Exercise the option in Consultant Agreement M.S. 5515-102 D1 to authorize Francl Architecture to proceed with the detailed design, tendering and construction services for the West Village Park and District Energy Plant Project; and
2. Set the expenditure authorization limit for Contract M.S. 5515-102 D1 at \$1,880,000.00, including GST and contingency.

SCOPE OF WORK

This project involves design of the West Village Park site, which will include a park and a permanent district energy plant integrated within the same site. The permanent district energy plant will be a gas-fueled thermal energy plant, which will house boilers that use natural gas and/or renewable natural gas to produce hot water.

The scope of work includes three distinct phases:

1. Phase 1, initiated in June 2015, involves the layout and design of the park site including integration of the district energy plant.
2. Phase 2 involves all work necessary to complete the detailed design of the park and district energy plant and obtaining a Building Permit. The scope of this shall include the completion of the detailed design and specifications for the project.
3. Phase 3 work includes consulting services related to tendering (procurement), contract administration and commissioning of the park and district energy plant. This phase is scheduled to commence in late 2016 for construction completion in 2018.

BACKGROUND

The City of Surrey has established a district energy (DE) utility, Surrey City Energy, to build a DE system in the rapidly growing City Centre. In 2012, Council established the City Centre as a district energy service area. The implementation of district energy provides an opportunity for the City to realize a community scale reduction in greenhouse gas emissions from buildings through system efficiencies and the application of low carbon energy sources.

At its Regular meeting on May 25, 2015, Council adopted the recommendations of Corporate Report No. Ro83;2015, attached as Appendix “I”, to award Contract M.S. 5515-102 D1 to Francl Architecture for the preliminary design (Phase 1) of the West Village Park and District Energy Plant, with an option in favour of the City to increase the expenditure authorization limit to \$1,110,000.00 for completion of the design, tendering and construction services (Phase 1, 2 and 3) of the project.

	Expenditure Authority
Original Scope - Phase 1	\$220,000
Original Scope - Phase 2 and 3	\$890,000
Total	\$1,110,000

Francl Architecture is nearing completion of the Phase 1 of the West Village Park and district energy plant. The cost to complete Phase 1 is estimated at \$214,000.

DISCUSSION

Originally, it was intended that the district energy plant would be a 20 MW facility and there would be supplementary plant facilities elsewhere in City Centre to support future development. Through their preliminary design, Francl evaluated various district energy servicing scenarios and it was concluded that the proposed West Village Plant could be upsized to a 60 MW facility on the site while still maximizing the usable outdoor park space. The increase in thermal energy output capacity to 60 MW would allow Surrey City Energy to substantially defer, or potentially eliminate, the need to construct additional energy plants in the future at other locations in City Centre. This 300% increase in plant capacity would increase the West Village Plant construction budget from \$8 Million to \$17 Million, a 113% increase.

In conjunction with the park and energy plant construction, Engineering staff have also determined that it would be cost effective for the City to concurrently complete construction of the 103 Avenue roadworks fronting the location. These works would include road widening, curbs, sidewalk and boulevard along the northern half of the road.

Staff recommend that Francl Architecture be authorized to proceed with the additional design, tendering and construction services for the upsized power plant and 103 Avenue road works, and their consulting fees for Phase 2 and 3 be increased accordingly based on competitive rates negotiated by staff. The following table summarizes the original expenditure authority and the proposed fee increases for the larger energy plant and road works:

	Expenditure Authority
Original Scope - Phase 1	\$220,000
Original Scope - Phase 2 and 3 (20 MW)	\$890,000
Additional Fee for Plant Upsizing (to 60 MW)	\$650,000.00
Additional Fee for 103 Ave Road works	\$120,000.00
Total	\$1,880,000.00

Given the increased capacity of the energy plant and additional road works, the proposed consultant fee to complete Phases 2 and 3 has increased. However, due to economies of scale, the total proposed fee as a percentage of total construction value has decreased from 12.5% to below 10%. Staff have reviewed the proposed fees and compared them to the fees of another similar project in the region. This review showed that the proposed fees as a percentage of construction cost are similar or better than those of the other project, further highlighting the value to the City.

SUSTAINABILITY CONSIDERATIONS

The implementation of a district energy system in the City Centre supports the Economic and Environmental Pillars of the City's Sustainability Charter under the following specific elements of the Charter:

- EC8: Energy Security;
- EN1: Energy Efficiency;
- EN10: Integrated Community Energy Master Plans; and
- EN13: Enhance the Public Realm.

FUNDING

Funding for this contract is available in the City's Capital Budget.

Fraser Smith, P.Eng., MBA
General Manager, Engineering

JA/SBN/WG/clr

Appendix "I" – Corporate Report R083;2015

NO: **R083** COUNCIL DATE: **May 25, 2015**

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **May 20, 2015**
FROM: **General Manager, Engineering** FILE: **5515-102**
SUBJECT: **Award of Contract M.S. 5515-102 D1
West Village Park and District Energy Plant**

RECOMMENDATIONS

The Engineering Department recommends that Council:

1. Award Consultant Design Agreement M.S. 5515-102 D1 to Francl Architecture for the preliminary design (Phase 1) of the West Village Park and District Energy Plant in the amount of \$199,652.25, including GST;
2. That the General Manager, Engineering or his designate be authorized to approve and release payments under this Contract up to the expenditure authorization limit, which is hereby set at \$220,000.00, including GST and contingency;
3. Authorize the inclusion in the Consultant Design Agreement M.S. 5515-102 D1 an option in favour of the City to negotiate with, and retain, Francl Architecture to provide professional services for the detailed design, tendering and construction components (Phase 2 and 3) of the West Village Park and District Energy Plant at the hourly rates and estimated fee of \$810,777.45, including GST as quoted in the consultant's original proposal; and
4. In the circumstance that the option is exercised, set the expenditure authorization limit for the preliminary design, detailed design, tendering and construction components (Phase 1, 2 and 3) of Consultant Design Agreement M.S. 5515-102 D1 at \$1,110,000.00, including GST and contingency.

SCOPE OF WORK

This project involves design of the West Village Park site, which will include a park and a permanent district energy plant integrated within the same site. The permanent district energy plant will be a gas-fuelled thermal energy plant, which will house boilers that use natural gas and/or renewable natural gas to produce hot water.

The scope of work includes three distinct phases: Phase 1 (Preliminary Design), Phase 2 (Detailed Design) and Phase 3 (Construction Support Services). At this time, a contract will be awarded for Phase 1 (Preliminary Design) only with the option to award subsequent phases upon successful completion of the preceding phase, and upon approval by the signing authority designate.

Phase 1 involves the layout and design of the park site. This includes determining an appropriate program for the park and integrating the district energy plant within the site. Within this scope, the Consultant is tasked with identifying the constraints and needs (programming and infrastructure) of both the park site and the district energy plant. This will require the Consultant to explore the potential location and scale of district energy infrastructure within the site, while maximizing the usable outdoor park space. It is expected that the park design will be completed to the preferred concept plan level and the energy plant design will be sufficient to obtain a Development Permit. The Development Permit will be presented to Council for approval at the end of Phase 1.

Phase 2 involves all work necessary to complete the detailed design of the park and district energy plant and obtain a Building Permit. The scope of this shall include the completion of the detailed design package (including specifications and construction drawings) for the project.

Phase 3 work includes consulting services related to tendering (procurement), contract administration and commissioning of the park and district energy plant. Resident field services are currently excluded from the Phase 3 scope; however, it may be added to the scope in the future.

The construction budget for the permanent energy plant is approximately \$8,000,000. The construction budget for the park is \$600,000. The energy plant budget assumes a thermal energy output capacity of 20 MW. The intent is for City staff to work with the design team to determine the maximum thermal energy output capacity that is achievable on the site. This may result in a thermal energy output capacity larger than 20 MW, which could increase the overall construction budget. The cost effectiveness and implications of this decision will be assessed by City staff through the course of completing Phase 1.

BACKGROUND

The City of Surrey has established a district energy (DE) utility, Surrey City Energy, to build a DE system in the rapidly growing City Centre. In 2012, Council established the City Centre as a district energy service area. The implementation of district energy provides an opportunity for the City to realize a community scale reduction in greenhouse gas emissions from buildings through system efficiencies and the application of low carbon energy sources.

In 2013, the Parks, Recreation and Culture Department acquired 10347 and 10357 133 Street (the “subject site”) to construct “West Village Park” in accordance with the Stage 1 City Centre Plan. The subject site is located west of the new civic core in the heart of a developing high density residential neighbourhood, as illustrated in the map attached as Appendix I. The park will provide a contemporary urban space with an opportunity for amenities that may include a play space (playground or sports court), passive open space, pathways and a contemporary site furnishing package. Staff from the Engineering and Parks, Recreation and Culture Departments have been collaborating to integrate a district energy plant into the park site. It is envisioned that the district energy plant will enhance the park and public realm.

In 2014, the City constructed a 4.5 MW temporary energy plant on the northeast corner of the subject site. This temporary energy plant will be replaced by the subject permanent energy plant on the same park site. The temporary energy plant is sized to provide thermal energy to approximately 3 high-rise towers. The second and third high-rise towers (Bosa and 3 Civic Plaza) that will connect to this temporary energy plant are currently under construction. An additional high-rise tower in the area will drive the need for the permanent energy plant. It is anticipated that an additional high-rise tower may be completed by 2018. In order to service this high-rise tower, construction of the permanent energy plant would need to commence in 2016. To prepare for this scenario, the City is proceeding with preliminary design of the park and permanent energy plant.

Proposal Submissions

The City advertised the project on the City's website and on the BC Bid website. A total of eight (8) responses were received as listed below:

- AECOM Canada Ltd.;
- McFarlane Biggar Architects & Designers Inc.;
- Taylor Kurtz Architecture Plus;
- RATIO Architecture Interior Design + Planning Inc.;
- Francl Architecture;
- Stantec Consulting Ltd.;
- HCMA Architecture & Design; and
- Dialog.

Evaluation

The proposals were evaluated using the following criteria:

- understanding of the assignment;
- experience relative to the assignment;
- strength of the project manager and team;
- work plan and schedule; and
- financial considerations.

By carefully reviewing all of the proposals and following a structured evaluation process, staff selected two preferred candidates who had the highest technical scores, Francl Architecture and Stantec, for follow-up interviews.

The Francl Architecture proposal demonstrated a very thorough understanding of the project requirements, offered a team that had considerable experience with projects of a similar nature and proposed an appropriate level of effort. The design fee proposed by Francl Architecture is considered to be reasonable for this type of engineering assignment, representing approximately 8% of the construction value. Overall the proposal from Francl Architecture was determined to represent the best value to the City in comparison to the other seven proposals.

SUSTAINABILITY CONSIDERATIONS

The implementation of a district energy system in the City Centre supports the Economic and Environmental Pillars of the City's Sustainability Charter under the following specific elements of the Charter:

- EC8: Energy Security;
- EN1: Energy Efficiency;
- EN10: Integrated Community Energy Master Plans; and
- EN13: Enhance the Public Realm.

FUNDING

Funding for this contract is available in the City's Capital Budget.



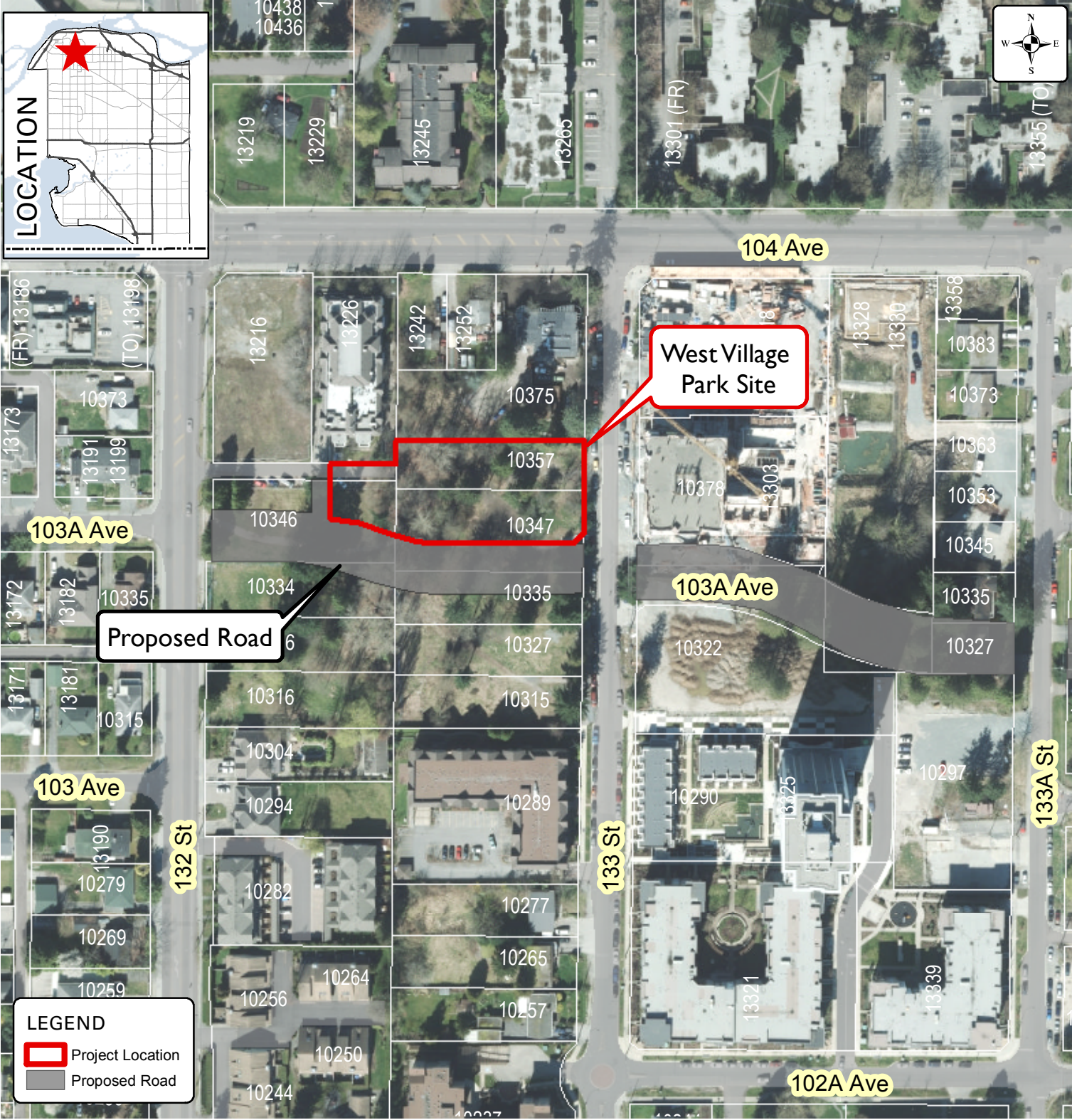
Fraser Smith, P.Eng., MBA
General Manager, Engineering

SBN/OC/WG/clr

Appendix I - Map of Project Location - Consultant Design Agreement M.S. 5515-102 D1

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APPENDIX I AERIAL PHOTOGRAPH OF SITE



Produced by GIS Section: 13-May-2015, C9W

Date of Aerial Photography: March 30, 2014



Agreement M.S. 5515-102 D1
Location of West Village Park

ENGINEERING
DEPARTMENT