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Pages

6. NEW BUSINESS STAFF REPORTS

6.8. Contract Award over \$100,000 for Belfountain Phase I Construction

A report on the above-mentioned subject as submitted by Jesse de Jager, Manager, Capital Projects and Assets; Terri LeRoux, Sr. Manager, PARCS; and Jeff Payne, Deputy CAO and Director, Corporate Services is included in the agenda package as Schedule 'H'

Recommended Resolution:

THEREFORE BE IT RESOLVED THAT the report entitled “Contract Award Over \$100,000 – Construction Belfountain Conservation Area Phase I – Dam, Channel and Heritage Gardens” be received and appended to the minutes of this meeting as Schedule ‘H’; and

THAT the CVC Board of Directors award a contract valued at \$5,454,106 plus HST to R&M Construction (560789 Ontario Limited) to undertake construction of Belfountain Phase I; and

THAT a 15% contingency be allotted to the purchase order to manage provisional items, site risks, and related contract matters; and further

THAT staff be directed to enter into all necessary agreements and to undertake related contract administration for the delivery of the project, and to report back to the Board of Directors upon project completion.

TO: The Chair and Members
of the Board of Directors,
Credit Valley Conservation

SUBJECT: **CONTRACT AWARD OVER \$100,000 – CONSTRUCTION
BELFOUNTAIN CONSERVATION AREA PHASE I – DAM,
CHANNEL AND HERITAGE GARDENS IN BOLD ALL
CAPS**

PURPOSE: **To request approval from the CVC Board of Directors to award
a contract for construction of Belfountain Phase I**

BACKGROUND:

Belfountain Conservation Area is located in the Town of Caledon (Region of Peel) along the West Credit River in the historic village of Belfountain. In August 2018 the Board of Directors approved a new management plan for the conservation area (Resolution #71/18) which outlined a two-phase redevelopment strategy to address aging infrastructure, dam safety, and restoration of the natural and cultural heritage of park. Phase I includes the lowering and anchoring of the historic Belfountain Dam, creation of a new natural channel for the West Credit River through the former head pond, replacement of a pedestrian bridge and boardwalk system, restoration of designated 'Mack Park' cultural heritage features, and creation of a new heritage gardens public realm on the reclaimed landform. Phase I was also planned and designed through a Conservation Ontario-Class Environmental Assessment (EA), which was approved by the Minister of the Environment, Conservation and Parks (MECP) in October of 2017. The Class EA regulation limits implementation of the preferred alternative to within five (5) years of approval (i.e. must be undertaken by October 2022).

In 2019, the Board approved CVC's new strategic plan ("Our Future Taking Shape – Strategic Plan 2020-2022") in which Goal Three, Direction Three directs that CVC "*Complete the dam and Headpond restoration at Belfountain Conservation Area*" (Resolution 67/19).

Detailed design

Beginning in early 2019, CVC staff undertook detailed design of Phase I with project consultants and engineers. WOOD Environment and Infrastructure Solutions (formerly AMEC Foster Wheeler) were retained as dam and channel engineers and lead project designers and Brook McIlroy Inc were retained as landscape and public realm designers. GMBLuePlan were brought on to design the new water and electrical supply system for the areas within Phase I (fountain and lilypond supply) and which are connected to necessary modifications for future servicing of Phase II areas (potable water for visitor centre,

washrooms, etc.). The water supply scope of work was majority funded through the Canadian Water and Wastewater Fund (CWWF) via Region of Peel's application.

Throughout 2019 and 2020, CVC staff and project consultants undertook extensive technical design and consultation with permitting agencies and with CVC's own Technical Review Committee and Planning and Development Services staff. Detailed design activities included: further cultural, archaeological and geotechnical studies; channel profile and flood modelling; ecological restoration planning; structural engineering for dam wingwall and anchor system; stone masonry investigations and heritage restoration planning; bridge and boardwalk support system engineering; water supply system layouts; and iterative aesthetic designs for the public realm features, based on staff and stakeholder review and input.

Work with the Ministry of Natural Resources and Forestry (MNRF) on channel and dam design was a particular project delay factor, as multiple iterative solutions for channel creation and management of sediment were required to obtain agreement on acceptable measures to adequately protected the aquatic environment and ensure dam safety. Final detailed design was completed in February 2021 and final drawings, specifications and design briefs were used for final permit submissions.

Permitting

Permit requirements for Phase I were identified in the EA and Management Plan, and include: NEC Development Permit exemptions; MNRF permits or authorizations under the *Lakes and Rivers Improvement Act* (for Dam works), *Public Lands Act* (for Channel works), and *Endangered Species Act* (for habitat protection of regulated species); authorization from Department of Fisheries and Oceans (DFO) for work within fisheries habitat; and a Heritage Permit from the Town of Caledon for alteration and restoration of designated heritage features under Part IV of the *Ontario Heritage Act*. All permits listed above are to be obtained or issued by June 15th. Minor project modifications that may result from final permit conditions will be reflected in contract scope changes during construction.

The management plan for Belfountain Conservation Area was prepared under Part 3 of the Niagara Escarpment Plan (NEP), which deals with public lands, parks and open spaces. The Niagara Escarpment Commission (NEC) endorsed the management plan in January 2019 and forwarded the plan for approval by the Minister of Natural Resources and Forestry, who formally approved it in March 2021. All projects and works included in the approved management plan under the infrastructure exemption schedule, including the entire scope of Phase I, are exempted from Development Permit Control by the NEC via Section 41 of Regulation 828 under the *Niagara Escarpment Planning and Development Act, R.S.O. 1990, c. N.2* and also must be undertaken within five (5) years of MNRF approval (i.e. by March 2026).

Budget and Cost Estimates

In September 2020, CVC staff and project consultants developed a Class B cost estimate for Phase I works based on known designed elements, unit costs and volumes, and benchmark values in industry. The total Phase I cost estimate at that time was \$4,025,000 including non-recoverable portions of HST and contingency. This figure was used for CVC budget purposes and for project fundraising.

In October 2020, the Board endorsed the preliminary 2021 Budget (Resolution #94/20) with capital budget pressures that included the implementation of Phase I of the Belfountain Conservation Area Management Plan, and further directed staff to seek alternative funding sources to help meet critical infrastructure needs.

In November 2020, the provincial government announced the \$250 Million Local Government Intake under the COVID-19 Resilience Infrastructure Stream of the Investing in Canada Infrastructure Program (ICIP). Following the announcement, CVC staff worked closely with Region of Peel staff on positioning Belfountain Phase I as joint project eligible under the disaster mitigation and adaptation program criteria and which could be undertaken in the timeframes (i.e. 'shovel-ready'). On December 10, 2020, Region of Peel Council approved a report entitled "COVID-19 Infrastructure Resiliency Fund" which put forward Belfountain Phase I as the fifth project for Peel's allotment, with a total funding request of \$4 Million. A formal application was prepared by CVC staff and submitted by Region of Peel on January 7th, 2021.

Between fall of 2020 and the project tender phase in February of 2021, market conditions affecting construction costs continued to change, as the impact of COVID-19 on the construction industry and the related supply chain, material costs, labour and other inputs was realized. An Issued for Tender (IFT) cost estimate was updated by project consultants in February 2021 with a total adjusted estimate of \$4,975,000 inclusive of non-recoverable HST and contingency.

In February 2021, CVC staff applied for funding for Phase I from MNRF's Water and Erosion Control Infrastructure (WECI) program, which provides 50% funding of eligible costs for risk mitigation projects on conservation authority-owned dams and control structures. Applications are reviewed and scored by the provincial WECI review committee based on dam safety rating, risk and impacts, and project readiness factors. Belfountain Dam scored below the full funding cut-off line and the WECI committee deemed eligible costs for CVC's application to be capped at \$650,000 for core safety works to the dam. Presently, WECI is indicating that CVC will receive \$303,800 in funding for the project, which is WECI's half of the current 93.5% rate of project eligible budget (i.e. 50% of \$607,597). CVC staff are to update WECI on final tender costs and request re-evaluation of project funding cap based on current known budget increases.

Park Closure

Construction of Phase I requires that Belfountain Conservation Area be closed for the 2021 season. This park closure was outlined in the management plan construction phasing plan and was executed by CVC staff in spring of 2021 through the communications plan developed for the project. The projected loss of revenue and accompanying operational shifts for PARCS was anticipated in the 2021 CVC budget and impacts will be offset using the PARCS operational reserve.

Request for Pre-Qualification (RFPQ)

Belfountain Phase I is a very complex undertaking, involving significant structural modifications to the historic Belfountain Dam (c. 1910), the removal of the sedimented headpond and creation of a new river channel for the West Credit, and the construction and replacement of new public realm features including a new bridge, boardwalk and trail system. It also includes specialized masonry restoration of the 'Mack's Park' fountain, stone walls and stair structures, which are designated cultural heritage features. These interconnected project elements are to be constructed within a tight timeline driven by regulated in-water fishery protection timing windows for channel and dam construction (June 15th to September 15th) and also within a project site that has limited operational and staging space, as well as very sensitive environmental features.

Due to the complexity of the work program and overall project delivery risk, the need for qualified construction expertise in channel and dam works, high-quality public realm installation, and proven safe operation within a sensitive aquatic environment, were all identified as a key factors upon which to assess the technical merits of a general contractor.

In February, CVC staff and project consultants undertook an open Request of Pre-Qualification (RFPQ) for general contractors (GC) based on a wide and public call for submissions using the bidsandtenders.ca online bidding platform (largest public bid platform in Ontario, in use by all member municipalities). The RFPQ was issued February 9th for a three-week posting during the preferred window for annual project bidding for contractors, with the project opportunity notice automatically generated for all contractors within the relevant sector. CVC obtained very good interest from twenty-one (21) firms who registered as plan takers, and formally received nine (9) RFPQ submissions by the February 26th deadline.

The RFPQ required a submission of statement of contractor qualifications, which included similar and recent example projects in both dam & channel works and landscape public realm construction, as well as list of proposed subcontractors, project references, the resumes and qualification of key staff, and proof of bonding capability from a recognized surety. The evaluation of submissions was based on the stated criteria and weighting which was closely connected to experience in the primary aspects of the Belfountain Phase I project scope.

Three contractors were selected to proceed to tender.

ANALYSIS:

Request for Tender (RFT)

On April 9th, the formal Request for Tender was issued to the three (3) pre-qualified general contractors via the cvc.bidsandtenders.ca electronic bidding platform. The RFT package included all drawing sets, specifications, special contract provisions, design briefs, construction contract form of agreement (CCDC No. 2 (2020) Stipulated Price, with CVC amendments), and the extensive bid item schedule with quantities and volumes.

Mandatory site meetings were held at Belfountain Conservation Area with each general contractor on April 19th to ensure that the project scope, site access and constraints, and environmental conditions were fully understood by bidders. Between April 19th and May 4th, five (5) RFT addenda were issued by CVC to address questions and provide clarifications to the project scope and bid requirements. Upon request of the bidders, the tender submission deadline was extended from Friday, April 30th to Tuesday, May 7th at 4:00pm EST.

On April 21st, CVC was informed by EBC Inc. that they did not intend to submit a bid due to project complexity and recent other contract commitments which precluded availability of the firm's resources to undertake the Phase I project. The EBC no-bid decision was subsequently made available to the remaining bidders in an RFT Addenda and was indicated in the public bid status on the bidsandtenders.ca platform.

At the time of tender close on April 30th, only one (1) bid was submitted to CVC from R&M Construction. In discussion with the other qualified remaining bidder, Dynex Construction, it was indicated to CVC staff that they did not submit a bid for business reasons, recent project commitments, and the complexity and timing of the Phase I scope of work.

Despite a result in receiving only one (1) bid from a qualified contractor, CVC staff are confident that the tender process was highly public and very rigorous, and conducted in a fair and transparent manner which generated competition and best value for CVC. To further ensure the process was properly undertaken, CVC staff obtained outside legal counsel from Wier Foulds LLP, experts in on construction and procurement law, to aid in the review of the pre-qualification process and on the drafting of the request for tender, evaluation criteria, and contract terms.

Bid Analysis

R&M Construction was the highest technically rated general contractor during the procurement process. The schedule of prices in the bid sheet is based on one hundred and fifty-one (151) individual line items, organized in ten (10) divisions for cost aggregation. The summary bid total from the R&M Construction submission is shown below in Table 1; line item bid values have been left out of the public report to protect sensitive business intelligence.

Table 1 – Bid Summary

Contract Item Category	Bid Price
A. General Items	<i>Unpublished</i>
B. Channel Construction Items	<i>Unpublished</i>
C. Structural: Dam Rehabilitation, Extension, Cascade Feature	<i>Unpublished</i>
D. Structural Retaining Wall Rehabilitation	<i>Unpublished</i>
E. Structural - Pedestrian Bridge	<i>Unpublished</i>
F. Structural - Boardwalk, Lower Outlook, Fox Folly Structure	<i>Unpublished</i>
G. Landscape - Heritage Area	<i>Unpublished</i>
H. Landscape - Boardwalk Area	<i>Unpublished</i>
I. Water Supply	<i>Unpublished</i>
J. Fountain Restoration	<i>Unpublished</i>
Bid Sub Total	\$5,949,866

The R&M Construction bid, while thorough, compliant and complete, is significantly more than the cost estimate produced by the design consultants for the Request for Tender, which was \$4,975,000 inclusive of non-recoverable HST and contingency. CVC staff undertook a line by line cost comparison of each discrete item in the tender by comparing the tender amount as a percentage of the estimated cost. High value cost items that were significantly over the estimated amounts were investigated in detail to determine the cause of the cost inflation.

In general, cost inflation was driven by project complexity and material price escalation. Based on staff review, it is evident that there was a disconnect between the designed plan and the constructability of the project, resulting in fewer than expected bids and significant increases in in-water construction works.

CVC staff and consultants undertook a thorough review of the bid schedule of prices and identified several main areas of cost drivers for the project, including:

1. Project complexity and risk of unknown conditions
 - a) Complexity of mobilization and staging, including in-water construction schedule (220% cost difference)
Risk of unknown conditions in proposed cofferdam system and river flow management (10%)
2. Increased commodity prices and supply chain impacts associated with Covid-19
 - a) Commodity price increases and supply chain issues impacting cost of concrete and reinforcing steel elements (150%)
 - b) Continued escalating lumber costs for boardwalks (25%)

Based on this thorough review, CVC staff are confident the bid price reflects the complexity of the work, the difficulty of achieving the mandated construction schedule, and the material increases in the marketplace. However, the subcontracted costs for structural concrete and reinforcing steel remained high. CVC staff requested that R&M Construction enter into direct negotiation to address these costs through minor scope amendments and

other changes to benefit overall project budget management. CVC also took steps to seek market comparable pricing where feasible to confirm fair value of the bid submission.

Direct Negotiations

Following the analysis of the bid submission, CVC staff entered into direct negotiations with R&M Construction to further refine and scope bid pricing and to find efficiencies through improved construction management approaches.

CVC requested that R&M Construction engage another concrete subcontractor in absence of any competing bids to confirm that the pricing for the concrete work was of fair value. A pre-qualified alternate concrete subcontractor reference was provided by CVC's consultant to R&M Construction. Pricing obtained from the alternate subcontractor was significantly lower than the original bid, and R&M Construction has agreed to use the alternate subcontractor, resulting in an overall credit of \$214,000 to the original bid.

To advance this project and manage potential scheduling impacts, CVC and the proponent have entered into an early mobilization contract for \$40,000 to test cofferdam placement and proactively manage water levels. In field modifications to the cofferdam management process may result in a further credit to the overall contract amount if feasible but cannot be quantified at this time. The early mobilization contract amount will be credited to CVC at the time of contract award.

On the remaining contract items, CVC and R&M Construction worked together to identify areas to refine and reduce scope to ensure that essential work can continue. A provisional 'cascade' water feature on the face on the reconstructed dam has been removed due to its high cost and technical complexity. Further reductions in contract price has been achieved by removing minor landscape elements from the scope of work, as well as substituting lower cost site furniture.

In collaboration with Town of Caledon staff, CVC is pursuing an alternate sediment fill disposal site on CVC lands near Belfountain Conservation Area. The alternate site will result in a further credit of \$74,000 to the project budget and allow the removed sediment to used for future CVC restoration projects.

Final Contract Price

Following the conclusion of contract negotiations, R&M Construction submitted a final revised bid price that includes the credit amounts for the advanced contract, concrete and structural steel work, reduced signage and site furniture, and alternate sediment fill disposal site. The summary bid values from the revised bid submission are shown below in Table 2). A 15% contingency is requested to allow staff to manage project complexity and unknown conditions during construction.

Table 2 – Final Bid Price

Contract Item Category	Credit Amount
A. General Items	-\$40,000
B. Channel Construction Items	-\$153,660
C. Structural: Dam Rehabilitation, Extension, Cascade Feature	-\$123,515
D. Structural Retaining Wall Rehabilitation	-\$42,295
E. Structural - Pedestrian Bridge	
F. Structural - Boardwalk, Lower Outlook, Fox Folly Structure	-\$48,561
G. Landscape - Heritage Area	-\$70,709
H. Landscape - Boardwalk Area	-\$17,020
I. Water Supply	
J. Fountain Restoration	
Total Credit	-\$495,761
Adjusted Bid Sub Total	\$5,454,106
Non-Recoverable HST	\$95,992
15% Contingency	\$825,000
TOTAL	\$6,375,098

COMMUNICATIONS PLAN:

A communications plan for Phase I has been developed by CVC staff. Tactics include: notice to local residents, stakeholders, businesses, and Town of Caledon council and staff of the park closure and of construction activities (undertaken in April); development of a Phase I project web page on CVC's website; regular updates and photos on construction progress; and internal staff communication on progress.

FINANCIAL IMPLICATIONS:

CVC has a capital reserve of \$2.3 million that is earmarked for Belfountain Conservation Area Phase I, which has been accumulated from PARCS (Property, Assets, Recreation and Conservation Area Services) and ARWM (Aquatic and Wetland Restoration and Management) budgets and carryovers.

CVC and the Region of Peel have been successful in an application to a Federal/Provincial infrastructure fund for project funding of \$4,000,000. These funds will be allocated to administration, construction and contingency costs of the project, with CVC responsible for ineligible costs, such as CVC staff time and the payment of the non-recoverable portion of HST. Expenditure of this funding is based on the final funding agreement and stipulations on dates for substantial performance (e.g. by end of December 2021).

The WECl fund is contributing \$303,800 to the core cost of the dam works related to safety and risk mitigation. This represents a 50% share of the eligible project scope under the

program guidelines for funding. The total available amount of funding is \$6.6 million as shown in Table 3, which will cover the cost of the project.

Table 3 – Funding Sources

Funding Source	Amount
CVC Capital Reserve	\$2,300,000
Federal/Provincial fund	\$4,000,000
WECI Fund	\$303,800
<i>Total Available Funds</i>	\$6,603,800

CONCLUSION:

The implementation of Belfountain Phase I is a CVC strategic goal and represents a generational investment in Belfountain Conservation Area to address the health and safety of the natural and cultural environment of the park. Phase I is a very complex and time-sensitive project that involves the lowering and anchoring of the historic Belfountain Dam, creation of a new natural channel for the West Credit River through the former head pond, replacement of a pedestrian bridge and boardwalk system, restoration of designated 'Mack Park' cultural heritage features, and creation of a new heritage gardens public realm on the reclaimed landform.

The planning, design and permitting for the project is complete and CVC staff have conducted a thorough and public Request for Pre-Qualification and Request for Tender process to obtain a general contractor for construction. R&M Construction was the highest technically rated general contractor during the procurement process as well as the final sole bidder for the project.

CVC staff and consultants thoroughly analyzed the bid and are confident that the costing is reflective to the complexity of the work, the difficulty in achieving the mandated construction schedule, and material and supply increases in the marketplace. Further direct negotiations with R&M Construction have led to a reduction in contract costs, with other efficiencies to be potentially realized during the project.

CVC has sufficient funds are available to undertake the work.

Contract award to R&M Construction for Belfountain Phase I in the amount of **\$5,454,106 plus HST** represents good value to CVC for construction of the project and will allow CVC to leverage one-time and significant infrastructure funding to undertake the project within the required timeframes.

RECOMMENDED RESOLUTION:

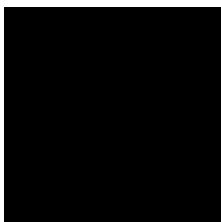
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Senior Manager, PARCS



Jeff Payne
Director, Corporate Services

Recommended by:



Deborah Martin-Downs
Chief Administrative Officer