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Regional Manager/Real Property
Contracting/PWGSC
Ontario Region, Tendering Office
12th Floor, 4900 Yonge Street
Toronto, Ontario
M2N 6A6
Ontario

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Regional Manager/Real Property Contracting/PWGSC
Ontario Region, Tendering Office
12th Floor, 4900 Yonge Street
Toronto, Ontario
M2N 6A6
Ontario

Title - Sujet 450 SSS Re-survey	
Solicitation No. - N° de l'invitation EQ447-130640/A	Amendment No. - N° modif. 002
Client Reference No. - N° de référence du client R.023276.307	Date 2012-09-11
GETS Reference No. - N° de référence de SEAG PW-\$PWL-035-1727	
File No. - N° de dossier PWL-2-35057 (035)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2012-09-25	
Time Zone Fuseau horaire Eastern Daylight Saving Time EDT	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Woodhall, Lauren	Buyer Id - Id de l'acheteur pwl035
Telephone No. - N° de téléphone (416) 512-5873 ()	FAX No. - N° de FAX (416) 512-5862
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: PWGSC-TPSGC Port Hope Port Hope, ON L1A 3S4	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation Amendment 002

This amendment is being raised to provide questions and answers posed regarding this project.

1. Section 3.2.4 Trial Survey references a number of reports including the 35 individual property reports, a Procedures Manual, a Cost Assessment Summary Report and a Lesson Learned Report. Can we obtain a copy of all reports immediately?

Canada is unable to provide the 35 Individual Property Reports as they have not yet been discussed with the property owners.

Canada is unable to provide a copy of the Procedures Manual to avoid confusions as some of the requirements stated in that document have changed.

Canada is unable to provide a copy of the Cost Assessment Summary Report since this report was submitted to Canada in confidence and is not intended for public consumption at this time.

The Lessons Learned Report is below:

Lessons Learned from SRCA Project as Applicable to SOW

1. INTRODUCTION

The purpose of the Small-Scale Sites Resurvey and Remediation Trials Cost Assessment (SRCA) project was to develop cost estimates for the resurvey and remediation of small-scale sites during Phase 2 of the Port Hope Area Initiative Port Hope Project (the Project) and to develop and validate operating guidelines, procedures and plans for the various types of small scale sites in the Municipality of Port Hope. The SRCA project also assessed the effectiveness of the communications applied during the trials program and its applicability for Phase 2 of the Project.

The trial resurvey involved 35 properties within Ward 1 of Port Hope that were investigated for the presence of historic low-level radioactive waste (LLRW). The SRCA project plan included the proposed remediation of six properties with identified historic LLRW contamination; however, only one was completed. A consulting team from SNC-Lavalin Inc. was contracted by AECL to conduct the resurvey and remediation trial. The Low-Level Radioactive Waste Management Office (LLRWMO) supervised the work on behalf of the Port Hope Area Initiative Management Office (PHAI MO), both of which are divisions within AECL. Properties to be resurveyed were chosen based on property data that has been compiled since the initial cleanup work done in the 1970s and continually updated by the Government of Canada through the work of the LLRWMO under its Interim Waste Management Program.

The SRCA differs from the final Port Hope Area Initiative (PHAI) resurvey in that the scope of the SRCA included only a limited number of trials that were performed to develop a substantive cost estimate to perform the remainder of resurvey and remediation activities in the Port Hope area. The final PHAI resurvey program will follow at some time in the future as an individual component of the Port Hope

Project. The scope of work for this program will be defined by the survey methodology, the remediation and verification protocol processes and the lessons learned during the SRCA project.

As part of the SRCA project, SNC-Lavalin Inc. performed 35 trial property surveys for comparison against the PHAI Cleanup Criteria (PHAI CC) parameters to determine if remediation was required. The resurvey portion of the project took place during the months of June through September of 2010 and involved measurements of:

- a. Indoor radon in air;
- b. Interior and exterior surface contamination (objects and materials);
- c. Interior and exterior gamma radiation; and
- d. Contaminant concentrations in soil (radiological and non-radiological).

SNC-Lavalin Inc. also performed one site remediation where they removed approximately 750 cubic metres of contaminated soil from the property at 132 King Street. The remediation effectively removed the property's entire backyard necessitating the removal and replacement of several trees, dozens of flowers and shrubs, a small shed, a deck, a pond and a retaining wall. The remediation phase of the project started in late September and extended into late December of 2010. Weather, ground water issues and municipal permitting delays extended this phase of the project longer than had been anticipated and as a result, the final restoration had to be completed in the spring/summer of 2011.

The majority of communication activities for the project were handled by the PHAI MO during the planning and implementation of the SRCA project and included:

- a. Development of the SRCA Communications Plan;
- b. Development of and signing of formal access agreements between the PHAI and property owners;
- c. Providing communications training for field staff; and
- d. Day to day interaction with the public, the media, the municipalities, and provincial and federal regulators.

2. LESSONS LEARNED

2.1 Overview

The following pages detail the lessons learned from the work completed during the SRCA project. Through several meetings with many of the people involved in the project, including the PHAI MO Engineering, Communications and Procurement group, the staff from the LLRWMO, SNC-Lavalin Inc., as well as the Observer group, this summary of lessons learned was prepared. The lessons have been broken down into ten categories to better organize the improvements/changes that will be considered in the undertaking of future resurvey and remediation projects. A few of the major categories have been further divided into sub categories. Some lessons learned span multiple categories, and have therefore been placed in the "root" category where they can be best addressed. The list of major and sub-categories is as follows:

1. Resurvey/Delineation
2. Remediation
 - a. Remediation Process
 - b. Environmental
 - c. Planning
 - d. Transportation
3. Restoration
4. Data Collection and Reporting
5. Legal
6. Contracting and Procurement
7. Health and Safety
8. Communications

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- a. Communications Process
 - b. Perception
 - c. Timelines
 - d. Signage
9. Municipal Interface
10. Observer Group

Many items may seem like common sense when being read, but they have been included to ensure that they are not missed when the planning for Phase 2 gets underway. Lessons learned are not necessarily presented in order of importance, but have been assigned a number for ease of reference. It should also be noted that many of the lessons learned were not as a result of a problem or a failure during the project, but were realized as things that worked well or better than expected.

It should also be stated that the SRCA project was a success. The planned deliverables of completing Phase 2 cost estimates and a procedural manual were completed, 35 properties were resurveyed, and one property was fully remediated to meet the PHAI CC and restored to an equal or better condition than it was in prior to being remediated.

For the purpose of the SOW, only the lessons learned that are relevant to this SOW are included below.

2.2 Resurvey/Delineation

1. Most importantly, better delineation of contaminated properties needs to be completed before remediation begins. Sufficient boreholes and soil samples are required, including analytical results, to confirm the depth and lateral extent of contamination. Details of the contamination and delineation need to be complete and clearly transposed to remediation design drawings. This will improve the likelihood of passing the verification procedure after initial excavation and ensure that the remediation can be completed quickly, efficiently and within the schedule with few or no surprises.

2. Appropriate equipment needs to be used during the resurvey activities to ensure that adequate and correct data are collected. In particular, soil sampling equipment needs to be capable of collecting samples at the required depths. If deep enough sampling cannot be conducted, the delineation cannot be accurately completed which can greatly affect the remediation portion of the project or even the determination as to whether remediation is required.

3. Experienced environmental engineers/technicians/personnel need to be involved in the field operations and they need to have an understanding of the Contaminants of Potential Concern (COPCs) and their travelling/migrating patterns. They need to be able to identify issues (such as unusual or potentially incorrect readings) in the field and resolve the issue at that time, rather than coming back later when the unusual reading is found in a report. This will help ensure that the resurvey/delineation and remediation activities are completed in a logical and efficient manner based on proven practice. Failure to employ appropriate expertise in the field will lead to higher costs, longer schedules and a greater possibility that historic LLRW may be missed.

4. As the metal components of the COPCs tend to migrate deeper than the radioactive components, the metals will be a more important factor in driving the design and field components of the individual site remediations. Future resurveys and contaminant delineations will need to put a greater emphasis on the metal components and the resurvey and sampling methodologies will need to reflect this. More intrusive investigations on sites with known LLRW contamination should be done on a grid pattern, with increased stratigraphic soil analysis to address COPCs at depth.

5. Sampling the footprint of areas remediated in previous years, with special emphasis on PHAI CC (specifically arsenic and uranium) in mind, must be completed. Radium-226 was the focus of previous

remediation work (e.g. 1977 Federal Provincial Task Force Criteria). As a result, other COPCs may not have been addressed adequately in those previous remediations. This will ensure that the clean up is complete and historic LLRW material is not missed.

6. Down-hole gamma logging can be an effective tool for guiding sample collection and characterizing soils. The contractor had difficulty correlating the down-hole gamma surveys with measurements taken on the surface of the soil cores and the concentrations of Ra-226, Th-230, Th-232 and uranium as determined by laboratory analysis of soil samples. Ensuring that the contractor is able to understand and utilize this tool will make them more effective in their sampling and delineation and will lead to better results.

7. A more intensive sub-surface sampling regime should be considered on Type A and B sites to provide increased confidence in confirming uncontaminated status. A single sample did not allow the statistical aspects of the Remediation Verification Standard Operating Procedure (RVSOP) to be used and it was felt that having only one sample point may not be sufficient to confirm that a property is not contaminated with LLRW. (Note that Type A and B sites are sites that are expected to have no LLRW contamination on them.) Consideration should be given to inter-site statistical data analysis for large residential developments comprised of Type A and Type B sites.

8. The methods and procedures for refilling boreholes should be reviewed. In a few instances, bentonite clay bubbled up and oozed out of the borehole several days after it had been refilled. In some cases, this was reported after a rainfall. This caused some concern for the property owner and created a requirement to send a technician out to investigate and to repair the site. Given that a very large number of boreholes will be drilled in Phase 2 of the project, it is important that proper procedures are followed to minimize the potential of this from occurring.

9. The steps of the Resurvey should be completed as close to the original planned schedule as possible. Going back to residents/properties multiple times to complete a job can create mistrust and a lack of confidence in the undertaking. In some cases it may cause residents to become frustrated and upset. It should be noted however, that since each property is different, there may be times when multiple visits are required and better preparation of the property owner/resident to understand the requirements of the resurvey will also smooth out this process.

2.2.1 Planning

1. A dry run meeting should take place before work is scheduled to begin, to ensure work plans meet the expectations of the stakeholder that health and safety plans and equipment are in place, that environmental monitoring is set up and ready to go and that everyone understands the schedule and events that will be taking place. This will ensure a smooth execution of the plan and reduce the chance of surprises.

2. In order to avoid delays and inconvenience to the property owner, the Contactor should be self sufficient in terms of power supply, water supply etc., with the availability for backups if necessary. Reliance on power or water supply from the property owner can be undependable and problematic.

2.2.2 Transportation

1. Additional emphasis should be put on the contractor to ensure the transportation of both waste material and clean fill is completed under all applicable road rules, such as speed limits, and following appropriate transportation routes. This will help ensure safe transportation of waste material and also present a positive image of the Project.

2.3 Data Collection and Reporting

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1. Consideration should be given as to how data will be collected in the field with respect to how the data will be reviewed and the outcome reported. All measurements should adhere to standard formats that can easily be transferred to the tables in the summary reports and subsequently to compliance letters. Working out these requirements in advance of future work will streamline the process of reporting and compliance letter generation. Templates should be developed for both data collection and reporting.
 2. Collecting, reviewing and presenting of data were timed too far apart in the SRCA Project. This process needs to happen in a timelier manner, such that potential errors, omissions or anomalies can be caught and addressed, perhaps while crews are still in the field.
 3. The qualifications of the personnel completing the work and writing the reports need to be tightly controlled. Qualified experienced environmental engineers/technicians/personnel should be used. The authors of the property reports need to have the appropriate technical expertise to interpret the data, question things that don't make sense, understand the principals of radiation monitoring and radiological/chemical remediation and be able to draw reasonable and knowledgeable conclusions. The resumes of the technical staff proposed for the project need to be reviewed in advance to ensure that they possess the appropriate technical expertise. This applies to all technical/management staff working on the project.
 4. A more definitive timeline should be adhered to. Property owners would like to have firm dates for receipt of information, remediation plans, compliance letters etc. Better planning and more realistic estimates will help produce this result. Education of the property owner is also required to ensure that their expectations are realistic and that they understand that all aspects of the planning and remediation process are sometimes subject to change and unavoidable delay.
 5. Reporting requirements should be better defined to meet both AECL needs and those of the public who may review the reports. It may be possible to simplify the property reports and make them more user friendly.

2.4 Contracting/Procurement

1. Confirmation of laboratory certification and individual staff qualification needs to be completed by the contractor/AECL prior to the start of work. Verification of qualifications should be completed before the contract is awarded.
2. It is important that in reviewing proposals, the personnel being proposed for the project are evaluated. Skill sets identified in the contractor's proposal need to be reviewed, perhaps with a weighting system, as not all are of equivalent value. It is also important that the personnel proposed for the project, actually play a role in the project and that they are not absent from the project or substituted by someone less qualified.
3. In order to be consistent with past and current radiological characterization/delineation work being done by AECL, the project specifications should define what units of measurement should be used for all readings taken. Consideration should also be given to specifying what type of analysis can be used as well as what type of equipment is acceptable. The use of different units of measurement, different types of equipment and different types of analysis created several issues with the SRCA project, which took time and effort to resolve.
4. Need to ensure that the lower detection limits and error margins on sample analysis meet the PHAI cleanup criteria.

5. As a project specification, detailed calibration requirements should be prepared and followed for all measurement devices.

6. Quality and accuracy of drawings associated with the resurvey and remediation efforts need to be better defined to ensure expectations are met.

2.5 Health and Safety

1. The health and safety representative and the site supervisor should be better identified. A different coloured or labelled hard hat or vest would be an easy solution to improving their identification on site.

2. Safety procedures for AECL/PHAI MO must be adhered to and enforced. Although no serious issues arose, there were instances where operational practices could have been better. Health and safety practices should be monitored closely for future work. Attendance by a PHAI MO Health and Safety representative at the start up meeting, the weekly on site Health and Safety meeting as well as periodic attendance at daily on site tail gate meetings could be instituted as a way of monitoring adherence to this requirement.

2.6 Communications

2.6.1 Communications Process

1. The PHAI MO needs to educate the community at large and specifically residents/homeowners about the processes involved and work to be completed in the resurvey and remediation project. However, PHAI staff cannot spend an hour plus with each home owner. As such, blanket media coverage, which will include information about consents and access agreements, location of streets and neighbourhoods where work will be taking place etc., will need to be completed. Mass mailings for specific neighbourhoods, specifying a local drop in spot for questions and concerns, will need to be set up prior to an area being resurveyed and information and access agreements will need to be mailed out or hand delivered.

2. Information pamphlets and letters to property owners need to be concise and distinctive from each other. Many pamphlets and letters which were sent out all started with a similar introductory paragraph explaining what the PHAI is about. Believing that this was just a repeat of information they have seen before, readers often disregarded the document before getting to the point of the document. Information needs to be clear (e.g. "Construction starting tomorrow") so that the document is read and the information is understood.

3. Home owner and surrounding residents require details, schedules, monitoring information, contact information etc. about work going on in their neighbourhood. This was successfully accomplished during the project and there were very few complaints.

2.6.2 Perception

1. Need to manage the perceptions and expectations of property owners and the municipality to ensure that they are realistic. This applies to many things including restoration plans, timelines, and perhaps most importantly the purpose and scope of the project.

2. A single point of contact needs to be determined and well communicated, to ensure that property owners, contractors, the Municipality and members of the PHAI MO are directed to the appropriate person for answers in regards to a specific project. This will avoid confusion and misinformation that can occur when multiple people are involved in giving out information.

2.6.3 Timeframes

1. The timeframe to complete the SRCA project was considerably longer than anticipated and initially communicated to the property owners. Given that both summer and winter radon readings are required, a realistic time frame to complete a property is probably six to nine months.

2.6.4 Signage

1. As neighbourhood properties are being resurveyed and/or remediated, signage should be developed that includes who is doing the work and how they can be contacted for more information. Signage should also include what is being done, as well as when and why it is being completed. This would be part of the communications plan to keep the general public, and especially the neighbourhoods involved, informed about the work that is about to be started.

2. Signs at the job site need to be clearly visible, professionally designed and installed, and must meet all AECL and appropriate Federal and Provincial regulatory agency requirements. This is important not only to comply with regulations but to provide information to the public.

3. SUMMARY

A large number of lessons have been learned via the work done on the SRCA project and these will guide the PHAI MO as they move into Phase 2 of the Port Hope Project. There were many things that were surmised at the start of the project that were verified during the project. There were several things that were anticipated but not expected to be an issue, that turned out to be an issue, and there were also a few things that were surprises that had not been expected. Through dozens of meetings and discussions, all of the various issues were worked through and resolved, leading to the successful completion of the SRCA project. The support from the many people involved in this project including the PHAI MO Engineering, Communications and Procurement group, the staff from the LLRWMO, SNC-Lavalin Inc., as well as the Observer group, has been invaluable in completing this project and in capturing the lessons learned from the SRCA project in this document.