



Corporation of the City of
NEW WESTMINSTER

**REQUEST FOR PROPOSAL
NWRFP-09-20**

**Consulting Services
Geotechnical Investigation
Phase I Environmental Assessment and Reports**

Closing Time:

Thursday, October 8, 2009
3:00 PM, Local Time, Vancouver BC

Closing Location:

Main Reception Desk
City of New Westminster
511 Royal Avenue,
New Westminster, BC, V3L 1H9

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Further requests for information :

Purchasing: Heather Rossi

Intermediate Buyer

Telephone: 604-515-3781

Facsimile: 604-521-3895

Email: hrossi@newwestcity.ca

COMPANY NAME		
Address:		
(including Postal Code)		
Contact Name:		
Telephone number:		
Facsimile number:		Email:
<u>Signature:</u> by officer with express authority to enter into contract		Dated

INTRODUCTION

PURPOSE AND BACKGROUND OF THE REQUEST FOR PROPOSAL

The City of New Westminster (the “City”), the oldest city in western Canada, is seeking Proposals from consultants (the “Proponents”) to provide a Phase I Environmental Assessment and Reports for Alexander Street North of Columbia Avenue, New Westminster, BC. This Assessment is required as part of the planning work on the New Westminster Multi-Use Civic Facility Community Centre.

RESPONSE TIME AND PHYSICAL FORMAT OF PROPOSAL

Three (3) copies of the Proposal, including one signed and initialled copy of this Request for Proposal, copy are to be submitted and clearly marked on the outside envelope or box as follows:

GEOTECHNICAL INVESTIGATION NWRFP-09-20

The City of New Westminster will receive Proposals at the location and time indicated on the title page of this Request for Proposal. The clock at the MAIN RECEPTION DESK is the official clock.

It is the Proponent's sole responsibility to ensure that the City receives its Proposal **prior** to the stated Closing Time. The City does not accept facsimile, electronic mail, or other unsealed submissions. The City **will not consider** late proposals.

Proposals shall be irrevocable for a period of sixty (60) days from date of closing. Successful Proposals submitted may become part of contracts for services. The Proponent has not nor will not copyright the Proposal and offers it for any purposes of the City.

MANDATORY REQUIREMENTS

The following are **Mandatory Requirements** for submitted Proposals. The City will not consider any Proposal that does not include all Mandatory Requirements.

1. a brief outline of the Proponent’s understanding of the project;
2. a detailed work plan and methodology to successfully accomplish this assignment;
3. the cost to complete the project with an explanation of basis of the fee proposal;
4. an estimate of project related disbursements and the charge-out schedule for personnel and disbursements in general; no overhead costs shall be added to disbursements.
5. the names of the project team complete with brief resumes.
6. a list of any sub-Consultants or Value Added Partners with a brief resume of experience;
7. names of three references of clients who have undertaken similar work the City may contact the references to assess the performance of the Proponent and the team;
8. a statement of commitment to undertake the project, provide the staff, and support necessary to complete the project on time and on budget.

The City of New Westminster reserves the right to invite Proposals from other parties and reject any or all Proposals received. The City is looking for a Proposal offering the best overall value. The City will evaluate the Proposals based on selection criteria such as, but not limited to, understanding of the project requirements, work methodology, team experience, qualifications, schedule, and costs. The lowest fee proposal submission or any Proposal may not necessarily be accepted.

GENERAL CONDITIONS

OWNERSHIP OF PROPOSALS AND FREEDOM OF INFORMATION

All documents submitted to the City of New Westminster become the property of the City, and as such, the City advises Proponents that parts, or all, of their proposals may be subject to the provisions of British Columbia's *Freedom of Information and Protection of Privacy Act (FIPP)* and *Community Charter*. Proponent's who wish to ensure particular parts of their Proposals are protected from disclosure under the FIPP Act should specifically identify any information or records provided with their proposals that constitute a) trade secrets, and b) that are supplied in confidence, and c) the release of which could significantly harm their competitive position. Information that does not meet all three of the foregoing categories may be subject to disclosure to third parties. Please refer to the *Freedom of Information and Protection of Privacy Act* for further information.

CONFIDENTIALITY OF CITY INFORMATION

Any information acquired about the City by a Proponent during this RFP process must not be disclosed unless authorized in writing by the City, and this obligation will survive the termination of this RFP process. The awarding of any contract or the reaching of any agreement for the provision of services to the City will not permit any Proponent to advertise a relationship with the City without the City's prior written authorization.

PROPONENT'S EXPENSES

Proponents shall be solely responsible for their own expenses in preparing a proposal and subsequent negotiations with the City, if any. If the City elects to reject all proposals, the City will not be liable to any Proponent for any claims, whether for costs or damages incurred by the Proponent in preparing the proposal, loss of anticipated profit in connection with any final Contract, or any other matter whatsoever.

LIMITATION OF DAMAGES

Further to the preceding paragraph, the Proponent, by submitting a proposal, agrees that it will not claim damages, for whatever reason, relating to the Contract or in respect of the competitive process, in excess of an amount equivalent to the reasonable costs incurred by the Proponent in preparing its proposal and the Proponent, by submitting a proposal, waives any claim for loss of profits if no Contract is made with the Proponent.

THE PROPONENT ACKNOWLEDGES AND AGREES THAT:

1. Other City officers (except those stated on the Title page), City employees and elected officials will not be contacted directly or indirectly regarding this Request for Proposal;
2. This RFP is not a call for Tenders but is intended to invite Proponents to submit detailed Proposals by which the City's objectives, as stated herein, can be met, following which the City will enter into further negotiations with the successful Proponent for the provision of the required services;
3. The City has the absolute right to accept or reject any Proposal for any reason, to negotiate with any Proponent or Proponents and to evaluate the Proposals in accordance with all information submitted by the Proponents and to abandon the RFP at any stage, for any reason;
4. There shall be no obligation on the part of the City of New Westminster neither to receive further information, whether written or oral, from any Proponent nor to disclose the nature of any Proposal received. If the City accepts a Proposal, following negotiations with the City, the Proponent will be required to execute a formal Contract to provide the services, in a form acceptable to the City;
5. The City of New Westminster shall not be obligated in any manner whatsoever until a written agreement has been duly executed relating to an approved proposal.

COMPLIANCE WITH LAWS AND REGULATIONS

Any successful Proponent must be prepared, at no extra cost, to give all the notices, and obtain all the licenses and permits required to provide the services in the City of New Westminster and to comply with all Federal Provincial and Municipal laws applicable to the services or the performance of the contract, including those of WorkSafe BC.

CLIENT / SERVICE AGREEMENT

The successful Proponent will be required to enter into a contract with the City of New Westminster, based on the Draft Consulting Services Agreement attached to this RFP as Appendix A.

SUBCONTRACT AND ASSIGNMENT

In the event of any proposed sub-contracting arrangement (which includes a joint Proposal submitted by two bodies having no formal corporate links), the responsibility for the submission of a Proposal, any subsequent negotiation, and the administration of any resulting contract for service will be that of the first Proponent named on the title page.

Under no circumstances may any part of an executed contract resulting from this Request for Proposal be sub-contracted or assigned to another firm, person, or company without the prior written authorization of the City of New Westminster.

INSURANCE

Any contract for service, which results from this RFP process, will include a term requiring the service provider(s) to carry general liability insurance for two million dollars (\$2,000,000.00) for staff or others involved in performing the contract responsibilities on behalf of the service provider.

Any contract for service, which results from this RFP process, will also include a term requiring the service provider(s) to, insofar as is legally permissible, and if not covered by the insurance noted above, indemnify and hold harmless the City, its officers and employees, from any and all liability arising out of the service provider's or a contractor's performance or non-performance of the terms of the contract or out of the provision of the service generally.

ACTING IN CONFLICT

Any contract for service, which results from this RFP process, will include a term prohibiting the service provider(s) from acting for any party whose interests are in conflict with those of the City, unless specific prior waiver of that term has been given in writing by the City in each instance.

CONFLICT OF INTEREST

By submitting a proposal, the Proponent warrants that neither it nor any of its officers, directors, employees or subcontractors, has any financial or personal relationship or affiliation with any elected official or employee of the City of New Westminster or their immediate families which might in any way be seen or perceived (in the City's sole and unfettered discretion) to create a conflict of interest.

SUMMARY OF REQUIREMENTS

1.0 BACKGROUND

- 1.1** The City of New Westminster is planning the construction of a Multi-Use Civic Facility. The current plan is to construct a building of six to eight stories with a concrete or steel roof. The facility may include auditoriums, museum, and possibly the City Hall.
- 1.2** As part of this planning process, a soils report is required for establishing foundation design.
- 1.3** The Scope of Work for this Proposal is attached as Appendix B.

2.0 WORK PLAN:

- 2.1** At a minimum, the Consultant will be expected to:
- a) Perform the work only to the level that schematic design can be performed by the design consultants;
 - b) Locate underground services and obtain the City Engineering Department's approval prior to the investigation commencing;
 - c) Provide traffic control as stipulated by the City's Engineering Department.

3.0 RESOURCES

- 3.1** The City will provide the following:
- a) Street access permits as required

4.0 PROPOSAL EVALUATION AND SELECTION

- 4.1** The City of New Westminster will evaluate all submitted valid Proposals. Any or all proposals will not necessarily be accepted. The City will disqualify Proponent(s) that fail to meet a minimum requirement for qualifications, experience, and methodology from the process prior to cost considerations. The object of the evaluation and selection process is to identify the Proposal that, in the City's opinion offers the best value for the products and/or services requested
- 4.2** The City, in assessing best value:
- a) May not necessarily accept the lowest or any Proposal and may, in its sole discretion, accept any Proposal and may waive any minor informality or irregularity in Proposals received;
 - b) Has no obligation to receive further information, whether written or oral, from any Proponent, nor to disclose the nature of any Proposals received;
 - c) May negotiate changes to the scope of work with any one or more Proponents without having any duty or obligation to advise any other Proponent(s) or to allow them to vary their Proposal(s) due to changes to the scope of work.
- 4.3** Proposals will be evaluated based on the following criteria:
- a) Cost;
 - b) Experience of Company/Team;
 - c) Proposed Methodology and Implementation Approach;
 - d) Completeness of Proposal;
 - e) Schedule;
 - f) References.

APPENDIX A DRAFT CONSULTING SERVICES AGREEMENT

This Agreement made the ____ day of _____ 2009

BETWEEN: THE CORPORATION OF THE CITY OF NEW WESTMINSTER
511 Royal Avenue, New Westminister, BC, V3L 1H9
(herein called the “City”)

AND: CONSULTANT
Address
(herein called the “Consultant”)

The City and the Consultant agree as follows:

1.0 Services

- a) The Consultant agrees to perform Consulting Services (herein called the “Services”) as detailed in the Scope of Work and Proposal for (*insert name of work here*) submitted to the City (*insert date here*) (as the same may be amended from time to time by mutual agreement in writing) which form part of this Agreement.
- b) The Consultant’s relationship to the City will be that of a prime consultant.
- c) The Consultant represents that he/she is professionally qualified and capable of performing the Services and shall at all times exercise the standards of care, skill and diligence normally provided by a professional specializing in the performance of the Services similar to those contemplated by this Agreement.
- d) The Consultant will not act for any party whose interests are in conflict with those of the City, unless the City provides specific prior waiver of that term in writing, in each instance.
- e) The Consultant warrants that neither it nor any of its officers or directors, or any employee, has any financial or personal relationship or affiliation with any elected official or employee of the Corporation or their immediate families which might in any way be seen or perceived (in the Corporation’s sole and unfettered discretion) to create a conflict. If such any conflict of interest arises during this Agreement, the Consultant will immediately inform the City in writing.

2.0 Duration And Termination

2.1 Duration

- a) Services under this Agreement shall commence on (*insert start date*) and be completed in accordance with the schedule in the Scope of Work, subject to further extension as agreed upon by the parties.
- b) When the Consultant fulfils all requirements under this agreement to the satisfaction of the City, the City shall certify completion in writing.

- c) In the event additional services are required that do not fall within those described in the Scope of Work then the completion date set forth above may be extended by mutual agreement, by a period determined to be sufficient for such additional services. The City may request additional services and the Consultant will provide a written fee quote. The Consultant will not commence additional services until the City has accepted the fee quote.
- d) Should the Consultant breach this agreement, either by abandonment, or by act or omission on his part contravening the terms of this Agreement then this Agreement shall terminate at the time of such abandonment or act or omission and the Consultant shall be paid only for Services performed up to the date of contravention.
- e) Acts or omissions by the Consultant which shall justify termination of this Agreement shall include but not be limited to the following:
 - i) neglect of duties;
 - ii) non-compliance of this Agreement;
 - iii) inability to perform the Services he represented himself as competent to perform;
 - iv) any misrepresentation made or concealment of material fact for the purpose of securing this Agreement.

2.2 Termination

- a) The agreement may be terminated by the City as follows:
 - i) For Deficiency or Default – following seven (7) days written notice by the City, the City may at any time terminate this Agreement if the performance of the Consultant is unsatisfactory in the opinion of the City, or if the Consultant breaches any provisions of the Agreement and fails to remedy the same promptly;
 - ii) Without Cause - by providing the Notice in writing to the Consultant's representative (as agreed upon).
- b) Upon termination of the agreement, the City will pay the Consultant for all work performed up to the effective date of termination. All other obligations of the City to the Consultant will terminate upon the termination or expiry of the agreement.

3.0 Non-Disclosure Of Information

- 3.1 The Consultant accepts that any information relating to the business affairs of the City is confidential and that any disclosure by him of any such information to unauthorized persons shall be reason for termination of this Agreement.

4.0 Ownership Of Contract Documents And Freedom Of Information

- 4.1 All documents submitted to the City of New Westminster become the property of the City, and as such, the City advises Consultants that parts, or all, of this contract and documents legally connected to this contract may be subject to the provisions of British Columbia's *Freedom of Information and Protection of Privacy (FOIPP) and Community Charter*. Consultants who wish to ensure particular parts of this contract are protected from disclosure under the FOIPP Act should specifically identify any information or records forming part of the contract that constitute (1) trade secrets, (2) that are supplied in confidence, and (3) the release of which could significantly harm their competitive position. Information that does not meet all three of the foregoing categories may be subject to disclosure to third parties. Please refer to the Freedom of Information and Protection of Privacy Act for further information.

5.0 Compliance With Applicable Laws

- 5.1 The Consultant shall be responsible for giving all notices and complying with all laws, ordinances, rules, regulations, codes, and standards relating to the conduct of the Services and the locations to which the Services are to be performed. The Consultant shall indemnify the City and hold it harmless from and against any claim, penalty, losses, damages, or expenses that might be made, imposed, suffered, or incurred due to an asserted or established violation of any such laws, ordinances, rules, regulations, codes or standards.
- 5.2 The Consultant will register for, obtain, and maintain their own separate WorkSafe BC Insurance Coverage, when required by WorkSafe BC and the *Workers Compensation Act*. When WorkSafe BC Insurance coverage is required, the Consultant will provide proof of Good Standing to the City before the Consultant starts work for the City and again before the City makes final payment to the Consultant.
- 5.3 The Consultant will comply with the WorkSafe BC Occupational Health and Safety Regulation and the *Workers' Compensation (WC) Act*. Any WorkSafe BC violation by the Consultant may be considered a breach of contract resulting in possible termination or suspension of the contract and/or any other actions deemed appropriate at the discretion of the City. Any penalties, sanctions or additional costs levied against the City, because of the actions of the Consultant are the responsibility of the Consultant.

6.0 Patent Rights And Royalties

- 6.1 The Consultant shall save harmless and indemnify the City from and against all claims and proceedings for or in account of infringement or any patent, design right, trademark or name or other protected rights in respect of any practice or process in respect of the Services to be performed.

7.0 Advertising And Publicity

- 7.1 The Consultant shall submit all proposed advertising or publicity by the Consultant referring to the City or performance of the Services to the City for written approval prior to issue.

8.0 Relationship

- 8.1 It is expressly agreed, represented and understood that the parties have entered into an arm's length independent contract for the rendering of the above-mentioned Services and that the Consultant is not an employee, agent or servant, of the City. Further, this Agreement shall not be deemed to constitute or create any partnership, joint venture, master-servant, employer-employee, principal-agent, or any other relationship apart from an independent contractor status providing an independent service for which the City will be invoiced according to the terms and conditions of this Agreement.
- 8.2 The manner and means by which the Consultant conducts its work in order to provide the Services contemplated by this Agreement are under its control.

9.0 Compensation

- 9.1 In consideration of the performance of the Services, the City shall pay the Consultant the rates provided in the Proposal dated (*enter date here*), not to exceed (*enter amount*) excluding GST, the Maximum Authorized Expenditure, except when the Maximum Authorized Expenditure is increased by a written Change Order issued and signed by the City. The Consultant will invoice for disbursements separately.

9.2 The City retains the right to access and audit the Consultant's files and records related to the City's business with twenty-four (24) hours notice during normal business hours.

10.0 Application For Payment

10.1 The Consultant shall submit invoices to the City, attention (*as directed*), on, or before the tenth (10th) day of each month. The City, if it approves the amount of such invoices, shall pay such invoices on before the twentieth (20th) day of the following month.

10.2 The Consultant shall attach to each invoice a brief report detailing the work completed to date, work completed during the month covered by the invoice, and work outstanding to complete the Services.

10.3 Notwithstanding any to the contrary in this Agreement, the City shall never be obligated to pay the Consultant a greater percentage of total fees and disbursements than the degree of percentage complete of the total Services.

10.4 If the city does not approve of or wishes to further review, audit or otherwise seek clarification concerning the Consultant's invoices, for whatever reason, the City shall not be liable for interest charges in respect of that invoice for the period from the date the invoice is submitted, until that date that invoice is paid. The City, if it approves the amount of such invoices, shall pay such invoices on or before the twentieth (20th) day of the following month.

10.5 The Consultant shall keep proper accounts and records of all costs and expenditures forming the basis of any billing to the city, including but not limited to, hours worked, details of all disbursements (including copies of services invoices), and percentage amounts of work completed. The City shall be entitled to verify the accuracy and validity of all billings and payments made by auditing and taking extracts from the books and records of the Consultant and by such other means as shall be reasonably necessary or advisable.

10.6 The Consultant agrees to remit and shall be responsible for all withholding taxes, income taxes, Canada Pension Plan contributions, Employment Insurance deductions, and any other deductions required by the applicable provincial or federal statutes for the Consultant and any of its employees.

11.0 Indemnification

11.1 The Consultant, on its own behalf and on behalf of all persons and corporations working by, through or under the Consultant, hereby agrees to indemnify and save harmless the City and its employees, officers, and agents from and against all losses, damages, claims, expenses suits and judgements arising out of, or related to, the provision of the Services by the Consultant that are found to be negligent.

11.2 This indemnification shall not apply:

- a) where the losses, damages, claims, expenses, suits or judgements result from the City acting on the advice of, or receiving direct service from, the sub consultants or employees of the sub consultants of the Consultant and without the knowledge or consent of the Consultant; **or**
- b) to the extent that the City, its employees, officers, or agents were negligent.

11.3 This indemnification shall terminate two (2) years from the date of Substantial Performance as certified by the Consultant for the project herein.

11.4 Nothing in this article shall derogate from the tort and other duties and liabilities of the Consultant and its sub consultants to the City.

12.0 Change To Scope Of Service

12.1 The City may vary at any time the Scope of Work to be provided by the Consultant as part of the Services. In that case and where this Agreement contains a limit as to the maximum fees and disbursements to be paid to the Consultant for all or any part of the Services, such limit or limits shall be adjusted as agreed to by both parties in writing.

12.2 Should the Consultant consider that any request or instruction from the City constitutes a change in the scope of the work; the Consultant shall so advise the City within ten (10) days in writing. Without said written advice within the period specified, the City shall not be obligated to make any payments of additional fees to the Consultant.

13.0 Insurance

13.1 The Consultant shall provide, maintain and pay for the following insurance which shall be in place with such insurance company or companies and in such form as may be acceptable to the City:

- a) Professional Errors and Omissions Liability Insurance protecting the Consultant, any sub consultant and their respective servant(s), agent(s) or employee(s) against any loss or damage arising directly or indirectly out of the professional services rendered by the Consultant, any sub consultant, servant(s), agent(s), or employee(s) under the contract. Such insurance shall be for an adequate amount acceptable to the City and shall in any event be not less than one million dollars (\$1,000,000.00) inclusive any one occurrence. The Consultant shall not be entitled to payment for services resulting in errors or omissions for which the Consultant is held responsible.
- b) General Liability Insurance of not less than two million dollars (\$2,000,000.00) inclusive any one occurrence.

13.2 Before undertaking any part of the work, the Consultant shall furnish to the City certificates showing that such insurance is in force. Such certificates shall provide that the insurance is non-cancellable except upon thirty (30) days prior written notice to the City.

14.0 Drawings And Designs

14.1 The Consultant shall deliver to the City, upon request and at no additional cost to the City, at least one complete set of all drawings, estimates, programs, or other documents produced in connection with the Agreement, on a compact disk (CD) in Adobe (PDF) format, unless otherwise stated.

15.0 Authorization To Proceed

15.1 The City will issue a Purchase Order to the Consultant. Issuance of the Purchase Order authorizes the Consultant to proceed with the work.

16.0 Assignments

16.1 This Agreement may not be assigned by the Consultant, or to its successor (s) without the express written consent of the City.

17.0 Engagement Of Other Consultants

17.1 The City, in any event, reserves the right at its own discretion to engage any consultant, other than that with which it reaches agreement(s), during the term of such agreement(s), if is deemed advantageous or appropriate.

18.0 Ownership And Copyright

18.1 All drawings, plans, specifications, reports, and other documents or products produced by the Consultant from the Service shall remain the property of the Consultant.

18.2 The Consultant shall give the City reproducible copies of any such documents and/or products, and these may be used by the City in any manner as part of its operations at its own risk, if the City chooses to use them in any manner other than for the particular purpose for which they were provided.

No term of this Agreement shall be deemed to have been waived by a party unless written waiver from the other party has been first obtained, and no condoning, excusing or overlooking of any default on previous occasions, or any earlier written waiver shall operate as a waiver in respect of a subsequent default.

This Agreement is the whole of the Agreement between the parties and sets forth all the warranties, representations, covenants, promises, terms, and conditions between the parties and there is no other written or oral express or implied terms, conditions, warranties, representations or promises not reduced to writing and set out in this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused their respective seals to be affixed as of the day and year first above written

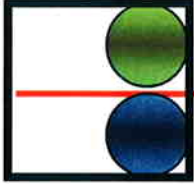
**THE AUTHORIZED SIGNATURE FOR
THE CORPORATION OF THE CITY OF)
NEW WESTMINSTER:)**

_____))
Roy Moulder, CPP, Purchasing Manager:)
Accepted and Agreed on)

_____, 20__ By)
CORPORATE NAME)

_____))
Consultant)
_____))
Authorized Signature)

Name and Office



FAX MESSAGE FORM

DATE: August 28, 2009 **Total # Pages:** 2

TO: **City of New Westminster - Building Management Dept**

Attention: Wayne Werbovetski, BArch, MAIBC

FROM: Andrew Metten, P.Eng, Struct.Eng.. (ametten@bushbohlman.com)

PROJECT: Multi-Use Civic Facility – Conceptual design **Project No:**

SUBJECT: Geotechnical Scope of Work

As part of the planning work on the New Westminster Multi-Use Civic Facility community center a soils report is required for the purpose of establishing foundation design so that pricing can be undertaken.

The desire is to construct a building of up to 6 or 8 stories with concrete floors and concrete or steel roof. The form and concept of the civic complex is being developed and may include auditoriums, a museum and possibly the city hall. The desire is to evaluate this building as either a normal importance or post disaster facility (structural schemes and pricing for both options will be determined during this conceptual design stage). While the configuration has not been developed underground basements for storage or parking are probable. At this stage we are doing conceptual design – it would be desirable to have a conceptual geotechnical report that would be augmented during the working drawing phase of the project. The site is on a sloping location

The geotechnical work is to perform drill holes, soil sampling, blow counts and other geotechnical work necessary to evaluate the site from a geotechnical standpoint to provide the following:

Geotechnical Background:

- Geotechnical description of the site and the soils below.
- Bore hole logs and a plan showing locations taken.
- Blow counts
- Evaluation of the liquefaction potential keeping in mind the normal importance or post disaster designation of the building.
- Water table level and expected mean high water table.

Design Parameters Desired:

- Foundation recommendations to be used in conceptual design including
 - Spread footing allowable pressure – we are hoping spread footings are possible. The pressure provided should reflect the level of the basement keeping in mind that underground parking or basement is likely.
 - Recommended pile and pile capacity including factored tension capacity under seismic loading. Required pile length for pricing will need to be provided. Pile information can be deleted if spread footing is sufficient information.
- Slope stability issues and if there is a potential for slope failure at the site or above the site.
- Recommended mitigation for liquefaction potential if site is potentially liquefiable and if foundations can be reasonably lowered below the liquefiable level if liquefaction is an issue.
- Site class for seismic analysis.
- Anticipated differential settlement under dead and live load assuming an expected bay size of 9m in functional areas and larger in auditorium areas gym areas.
- Expected pressures against underground walls – the site is sloping so there will be unbalanced soil load on the building that must be resisted by the building foundation and it is desired to obtain the desired pressures against this wall under both static loading and seismic effects. The seismic effects should take account of the desire to evaluate the building under both the normal importance and post disaster classification.
- Preparation requirements for slab on grade assuming slab on grade is possible at base of basement.
- Requirements for drainage under slabs on grade.
- Requirements for drainage under retaining wall at up-hill side of the site.

Environmental:

- Survey of past uses for the site that might result in a contaminated site.
- Perform tests for toxic materials.

The geotechnical engineer will need to know the proposed location of the building.



Andrew Metten, P.Eng., Struct.Eng.
Partner: Bush, Bohlman and Partners