
A.3 ENGINEERING STUDIES

A.3.1 Meetings

Refer to Appendix A.1 for details regarding project meetings.

A.3.2 Data Collection

A.3.2.1 General

The Consultant shall review all available pertinent documentation and conduct all necessary field inspections, testing, studies, and surveys to suit the study scope.

A.3. 2.2 Existing Data Collection

1. Existing Documents, Record Drawings and Existing Conditions

The city will provide copies of available record drawings, reports studies and other documents pertaining to the study. Visiting the site as required to determine existing conditions, services, features, routes, access, interference, etc., related to the study. The Consultant should note that changes may have been made over time without updating the documents or record drawings. Prior to commencement of the engineering study, the Consultant shall review the existing background information, as well as conduct a site review of the structure to confirm changes or omissions, if any, in the record drawings. The expected level of the site review includes at a minimum, a walk- through of the structure and visual observations. The Consultant shall record its findings and advise the PM of any significant changes or omissions in the existing documents and record drawings.

Any additional work required due to the Consultant's failure to review documents or record drawings will be at the Consultant's own cost.

2. Current Projects

Review scope of current City projects and identify potential impacts on this study. Ensure that any potential impacts/conflicts are identified and discussed with the City's Project Team, for resolution by the city.

3. Existing Structure

Perform a field review of the existing structure relevant to the study. Verify existing structure capacities, conditions and layout.

A.3.2.3 New Data Collection

4. Following the collection of all existing data, the consultant shall prepare a Technical Memorandum summarizing the collected information, identifying where data gaps exist, and outline a recommended Study Plan so that sufficient new data can be collected to adequately complete the study.

5. Study Plan

The consultant shall prepare a Study Plan tailored to the scope and goals of this study outlining the following:

- materials to be sampled and rationale
- inspection equipment and methodology
- parameters to be monitored or tested and rationale
- comparative criteria (i.e. applicable Codes, Standards, Regulations, Guidelines, etc.)
- schedule

A.3.3 Standards

Refer to the RFQ Section 2.3 for the City's standards.

The Consultant shall note that topographic mapping, field edit, compiled area plan, and property surveys are collections of data from various sources. This information requires proper editing and formatting by the Consultant in accordance with the City's drafting standard before being used as a base plan.

A.3.4 Conceptual Design Alternatives

A.3.4.1 The Consultant shall develop several conceptual design alternatives and summarize in a Technical Memo, which will provide the foundation for the study. Where possible, a minimum of three viable alternatives is to be identified for comparison purposes. In general, these should represent a range of alternatives with respect to life cycle, complexity and cost.

A.3.4.2 Submit a Technical Memo outlining the alternative conceptual designs for consideration in the study to the City for approval prior to commencement of the review.

A.3.5 Study Report

A.3.5.1 The final study report shall outline the pertinent pre-existing data collected, summarize the results of the study plan, detail the conceptual design alternatives developed, provide an analysis and comparison of these alternatives, and include a recommendation on the preferred alternative. The analysis shall be based on the technical information, prepared by the Consultant. The analysis and comparison of the alternatives should include, but not be limited to the following:

1. Cost of ownership (i.e. lifecycle costs)
2. Capacity, performance and efficiency
3. Operational issues and concerns
4. Site constraints
5. Design and construction schedule
6. Constructability challenges

A.3.5.2 The review shall document the process with sufficient level of detail to support the City's decision on proceeding with the selected alternative.

A.3.5.3 In general, the report should include technical memoranda, the results of the study plan, and any modelling, notes of meetings, and copies of relevant correspondence with the study stakeholders.