## CIVL 445 PROJECT #: Click here to enter text.

*Issued: July 31, 2023*

**1. PROJECT IDENTIFICATION**

*Project Title*: Click here to enter text.

*Client*: Click here to enter text.

*Client Representative*: Click here to enter text.

**2. PROJECT BACKGROUND**

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Fig. 1. Aerial view of site (Google Earth).



Fig 2. Click here to enter text.

**3. PROJECT OBJECTIVES**

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Fig 3. Click here to enter text.

**4. SCOPE OF WORK**

**4. 1 CONCEPTUAL AND PRELIMINARY DESIGNS (CIVL 445)**

This is the first of two capstone design courses for students in the 4th year of the Civil Engineering program, intended to support preparation for professional practice. CIVL 445 entails a conceptual and preliminary design of a specific project relating to civil engineering infrastructure, and relies on the knowledge and skills developed in the Civil Engineering program to date. It is expected that the project design will integrate technical, economic, community and environmental considerations.

The conceptual and preliminary designs are expected to give attention to the following elements:

* Gather and review information provided by the client and research additional information relating to the project objectives, including property lines, existing infrastructure and usage, and existing facility.
* Undertake an analysis of projected changes in land use.
* Designs must be mindful of the local environment and stakeholder interests in maintaining the local environment and the wilderness aesthetic that currently exists
* Prepare a stakeholder engagement, consultation and communication plan
* Prepare a Class C cost estimate of the preferred option to enable the design, permitting, project-management and construction of the infrastructure proposed in the Preliminary Design.
* Prepare a preliminary schedule of milestones with respect to undertaking the construction and completion of the project, assuming a start-date of May 1, 20XX.
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**4. 2 DETAILED DESIGN (CIVL 446)**

This is the second of two capstone design courses (CIVL 445 & CIVL 446) for students in the 4th year of the Civil Engineering program, intended to support preparation for professional practice. CIVL 446 continues with the detailed design of a civil engineering project. Detailed (final) design includes any design activities following preliminary design and expressly includes the preparation of final construction plans and detailed specifications for the performance of construction work. During the final design stage, the detailed engineering calculations and drawings of all physical components of the project are produced, as well as a written final design report that summarizes the facility as designed.

The detailed design are expected to give attention to the following elements:

* Technical considerations associated with the design.
* Detailed design outputs shown in drawings to be issued “For Construction”.
* Construction specifications
* A draft plan of construction work (construction requirements, sequence, etc.) and a brief discussion on anticipated issues related to specific site conditions.
* Prepare a Class A cost estimate of the preferred option to enable the design, permitting, project-management and construction of the infrastructure proposed in the design.
* Prepare a final schedule of milestones with respect to undertaking the construction and completion of the project, assuming a start-date of May 1, 20XX.
* Specifications and estimates of service-life maintenance plan
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**Special considerations:**

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**5. DELIVERABLES FOR THE CLIENT**

In parallel with the deliverables required for the course, the following deliverables are to be provided to the client:

**5. 1 CIVL 445 - Conceptual and Preliminary designs**

* A project proposal (identical to that required for the course)
* A conceptual design presentation and summary report (identical to that required for the course)
* A preliminary design report detailing the size and works required in order

**5. 2 CIVL 446 - Detailed Design**

* A design progress report (identical to that required for the course)
* A detailed design presentation and summary report (identical to that required for the course)
* A detailed design report detailing the size and works required in order

**6. PROJECT TOOLS AND RESOURCES**

**6.1 Information Provided by the Client**

Specific information will be discussed and presented by the client at the **September xxx** plenary session. This is expected to include:

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 **6.2 Other Information and Resources Relevant to Project**

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**6.3 Additional Information and Resources**

Students should also review the Addendum on Project Tools and Resources. This refers to the following: general software requirements, site visit arrangements, and other information

**7. ADDITIONAL NOTES**

* Please ensure that there is no personal information (student ID, e-mail addresses, phone numbers, etc.) in the body of the final project report.
* Student reports may be published by the client and made available to the public. If you do not wish your report to be published or made available to the public, please inform Dr. Nazhat.
* If you are contacted by the media or if you initiate contact with the media, please inform them that you are not speaking on behalf of the client. If you expect that your project will receive media coverage please inform Dr. Nazhat.

**ADDENDUM – GENERAL TOOLS AND RESOURCES**

In addition to the project-specific tools and resources that have been mentioned, more general tools and resources for the three projects are as follows.

**General Computer Applications**

 [The following has been announced in the pre-term preparation request that has been issued.]

The coursework will be undertaken almost entirely electronically, including written submissions, calculations, drawings and presentations. Students are required to own and use a laptop computer that has the following software applications (or equivalents) installed:

* *Microsoft Office* including:
	+ Word - for report writing
	+ Excel – for spreadsheet calculation and programming
	+ PowerPoint – for presentations
	+ Outlook – for e-mail communications
* A web-browser
* 2D CAD software for design & construction documentation (e.g. *AutoCAD)*
* 3D CAD software for design explorations & presentations (e.g. *Sketchup*)
* A pdf reader
* Google Earth – for site images and measurements

**Site VisitS**

The site visit forms an important component of information gathering on any project. Since the sites of the three proposed projects are readily accessible, there will be no formally organized site visit. Instead, all the members of each team are required to visit the location of the project early in the term in order to understand the issues involved and take photos for documentation and for use in later presentations. Specifically, the plenary session time on **September XX, 20XX** has been set aside to enable students to undertake site visits, although they may do so at other times of their choosing.

Please note that arrangements for insurance coverage (paid for by the Department) should be completed prior to students undertaking site visits relating to Project outside UBC.

**OTHER INFORMATION**

Teams will be expected to research and obtain other information as may be relevant, including codes, bylaws and guidelines, and permitting requirements. Some approaches to doing so may be conveyed during some of the plenary sessions.