



Project: Emigrant Creek Hydrographic Survey Extents
 Job No: Fee Proposal
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ENV SOLUTIONS PTY LTD

Investigation Boundary
 Assumed dredge area (1.45km x 30m x 1m)

Imagery Courtesy of Six Maps 2015
 Not To Scale

Scope of Works

The proposed scope of works is as follows:

- Stakeholder consultation regarding boat access issues.
- Bathymetric survey.
- Collection and analysis of bed sediment samples.
- Development of potential scope of dredging.

Methodology

Our proposed methodology for delivering the above scope of works is outlined below.

Task 1: Project establishment

We will collate and review existing background documentation prior to meeting with Council for a project kick-off meeting. The purpose of the meeting will be to confirm the scope of works and timeframes and discuss any information gaps.

Task 2: Consultation with stakeholders regarding boat access issues

In collaboration with Council, we will identify the stakeholders that will be consulted to discuss and confirm the scope of the boat access issues and obtain feedback on the required extent of dredging. We will initially contact stakeholders by phone/ email and then undertake face-to-face meetings. The information provided will inform the study as to the size, draft and number of vessels using and residing in Emigrant Creek. The consultation shall also provide information on the access issues including current and historic shoaling areas and rates.

Task 3: Bathymetric survey of potential dredge area

An initial estimate of the area to be covered by the bathymetric survey is presented in **Appendix A**. The actual area to be covered will be confirmed following the stakeholder consultation. The key tasks, deliverables and clarifications associated with the bathymetric survey include:

- Undertake bathymetric survey of Emigrant Creek investigation area.
- Prepare a plan of survey and volume calculations of proposed dredging design profile.
- Supply survey plans in PDF and suitable electronic formats.
- Survey to be referenced to AHD and local tide datum (LAT).
- Survey to be completed using a single beam echosounder with survey lines spaced at 10 m intervals perpendicular to the channel.
- Coverage will extend as far as practical using a small vessel at high tide.

Task 4: Collection of bed sediment samples

Bed sediment samples will be collected using a vibrocorer sampler deployed from a suitable work vessel. Samples shall be taken in suitable volumes for laboratory analysis.

Task 5 Laboratory analysis of bed sediment samples

The bed sediment samples will be analysed for the following parameters:

- Particle size.
- Standard contaminants (e.g. heavy metals, pesticides).
- Hydrocarbons.
- Foreign matter (i.e. waste/ litter).
- Cyanide.
- Organotins.
- Acid sulfate soils.
- Total organic carbon.

Task 6: Development of dredging scope

Based on the bathymetric survey, a potential spatial extent, depth and volume of dredging will be determined. The bed sediment analysis will dictate potential options for the disposal of the dredge spoil. In collaboration with Council, we will identify and assess these disposal options, including preliminary consideration of approval requirements and pathways.

Task 7: Reporting

The methodology, results and outcomes of the project will be documented in a report. A draft report will be submitted to Council for review prior to finalisation.