

2 June 2020

Myfanwy Emeny
 Open Space and Parks Manager
 Parks, Sport & Recreation
 Wellington City Council

Dear Myfanwy

Re: Owhiro Bay Coastal Engineering Options Assessment

The following is a brief proposal to undertake an engineering options assessment at Owhiro Bay, which has recently experience some extreme over-topping during a storm event. The process will be similar to that undertaken at Lyall Bay in 2016, although more focus at a smaller scale and will not specifically consider the effects stormwater pipes across the beach (there are over 20 stormwater pipes/outlets at Lyall Bay, and only a single stream across the western end of the beach at Owhiro Bay). The approach will be similar to that undertaken for Lyall Bay, which is a compressed MfE (2017) methodology that follows the 10-step decision cycle where community engagement is central to the process (Figure 1).

The 10-step decision cycle, grouped around five questions

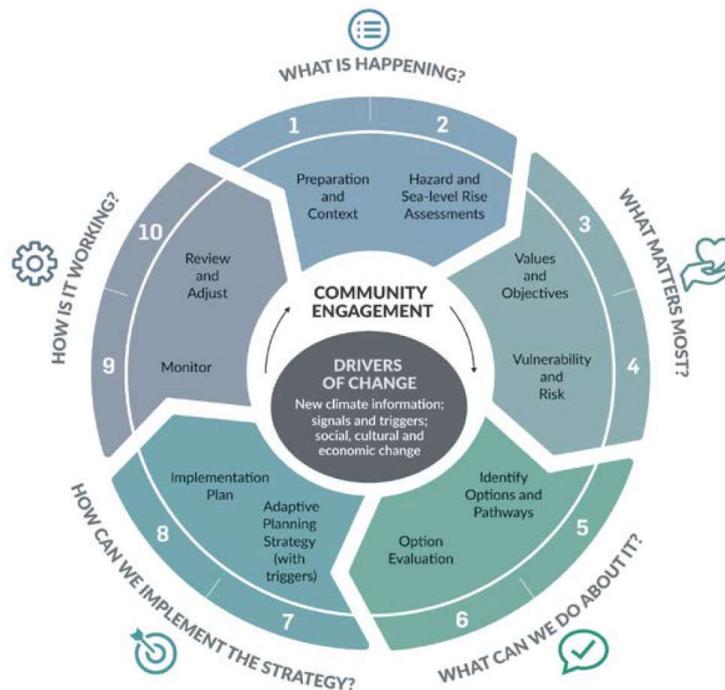


Figure 1. Community engagement is a fundamental component for the development of successful coastal protection and adaptation and corresponds to many of the elements required to secure and implement a long-term strategic planning and decision-making framework for coastal areas potentially, or already, affected by coastal hazards and climate change effects, such as sea-level rise. (Source: MfE, 2017. Coastal Hazards and Climate Change: Guidance for Local Government).

The project will include the following tasks:

1. *Site Visit and Initial Stakeholder Consultation.* The first visit will include a site inspection of Owhiro Bay and the various engineered structures around it, followed by an evening meeting with stakeholders to go through the issues and the aspects of the bay that are valued by the stakeholders (i.e., questions 1 and 2 in Figure 1). This will include utilization of blown-up aerial photographs (a bay-wide image and a close-up of the areas recently over-topped) that can be annotated with information by the stakeholders with respect to values, issues such as over-topping, erosion, etc. (Figure 2). The information gained from the site visit and stakeholder meeting will be incorporated into the options study to develop a set of viable options to address the issues existing at Owhiro Bay.



Figure 2. Stakeholder consultation is critical to the successful development of management strategies – this collage is of community consultation for the Manu Bay surfbreak of national significance during the development of the national guidelines for managing surfing resources. Aerial photos annotated with information about surf break characteristics, usage, threats and coastal processes are useful tools to inspire and focus discussion – a similar approach will be applied for community consultation at Owhiro Bay.

2. *Collation and review of all existing reports, literature and data pertaining to the site.* This would include any existing survey data (in order to determine elevations of areas above the beach), historical aerial photography (good satellite images are available for the site and historical images may also be available for coastal trend analysis), marine assessments, engineering assessments, resource consent applications, etc. eCoast’s MDI (Metocean Data Interface) will also be utilised, which holds a variety of world-wide metocean datasets (e.g. waves, winds, bathymetry, air pressure, etc), dating back to 1979 and earlier, which is updated

each month. The MDI will be accessed to provide long-term offshore wave data, regional bathymetry, nautical charts, wind data and tide data. Along with the information collected during the site visit and stakeholder meeting, these data will be used to build up an understanding of the physical make-up of the site and the surrounding area, and the coastal hazards that it is subject to.

3. *Identify and Evaluate Options.* A range of options will be developed based on the results of 1 and 2 above, that is, options that are viable for the location. Each option will then be evaluated with respect to its applicability and the pros and cons, including a basic costing for the application of each (question 3 of Figure 1).
4. *Stakeholder Presentation.* The options evaluation will be presented back to the stakeholders in a second evening stakeholder presentation, including recommendations on the best options to apply for this location. This will provide further stakeholder input, an opportunity to answer questions on the options and provide community buy-in for the option(s) selected for implementation.
5. *Reporting, graphics and specifications.* The report will include concise descriptions of all of the above tasks, generic drawings and specifications of structures as required, and will include a recommended implementation plan and a monitoring/adaptive management plan (i.e. questions 4 and 5 of Figure 1).

The cost to undertake this work is broken down in the following table:

| Item | Cost (excl. GST) |
|-----------------------------------------------------------------|------------------|
| Site Visit/Initial Stakeholder Meeting | 3900 |
| Lit/data Review, incl. historical photo assessment | 3120 |
| Coastal processes and hazards assessment | 1950 |
| Preliminary options development (including graphics) | 4400 |
| Stakeholder Meeting (incl. presentation preparation) | 2600 |
| Selection/confirmation of final option in consultation with WCC | 650 |
| Design, drawings and specifications | 1300 |
| Reporting | 3900 |
| Expenses (travel, large aerial images, etc.) | 1768 |
| Total | 23588 |

| Hourly Rates | |
|---------------------------|-----------|
| Senior Engineer/Scientist | \$250-325 |
| Modeller | \$250 |
| Technical | \$155-195 |

Please let me know if you require further clarification.

Yours sincerely



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