

# **Peer Review Group Review of the Environmental Monitoring and Management Plan – LPC Channel Deepening Project: Stage 1**

**prepared for Lyttleton Port Company and Environment Canterbury**

**by**

Derek Todd, Jacobs

Mark James, Aquatic Environmental Sciences Ltd

Willem De Lange, University of Waikato

Review date 1<sup>st</sup> June 2018

## **1. Introduction**

As part of the final conditions of consent for the dredging and disposal of material from dredging of Lyttleton Harbour the Lyttleton Port Company (LPC) was required to establish a Peer Review Group (PRG) for the purposes of reviewing and providing recommendations to the Council and consent holder in respect of the adequacy of various documents in meeting the consent conditions. The first report that requires certification is the **Environmental Monitoring and Management Plan (EMMP)**.

In assessing whether the EMMP should be certified we have reviewed the EMMP and compared it with the requirements of consent condition 7 to determine its' appropriateness and whether it is fit-for-purpose.

## **2. Review of EMMP LPC Channel Deepening Project: Stage 1**

### **General comments**

- The EMMP is very comprehensive, uses what can be considered best practice and meets the standards expected of such a plan.
- There are pros and cons for when an EMMP should be produced. In this case the Baseline Monitoring has already been undertaken, which means there is potential for the requirements for the Baseline Monitoring to predetermine the constituents and focus of the EMMP. An advantage is that a full Baseline Survey provides data that can be used to better define the management requirement to achieve consent conditions. Provided the Baseline Monitoring has been carried out to a high standard and meets the EMMP, this is not seen a significant issue in this case.
- **The conclusion is that the EMMP is fit-for-purpose and meets the requirements set out in resource consent condition 7, therefore, our recommendation is that it should be certified by Environment Canterbury (ECAN).**
- The PRG raise the following minor points relate to the EMMP more as general clarification than as criticism of the EMMP.

### **Specific comments**

- There are a number of sections that could have been clarified in a little more detail, or contain minor grammatical errors (including several referring to Appendix figures). However, this does not detract from the robustness of the document and overall the EMMP is very comprehensive and meets the requirements of Condition 7 of the Consent Order.
- OS4 is stated as a site for assessing effects on mussel farms but the PRG notes there is a major farm to the north-west in Pegasus Bay and there are no sites in this direction. Further assessment may require turbidity measurements to the northwest, and it is evident that observations in this area would provide additional information about contributions to turbidity by fluvial discharges, particularly the Waimakariri River. However, it is acknowledged that considerable discussion would have gone into selecting sites and this is beyond the PRG mandate at this point.

- There is no mention of sensitivity of biota and how the sites have been chosen, rather that it refers to agreed tiers of intensity (NTU/duration). It is assumed that the sites represent any areas identified with more sensitive biota and that the levels will protect that biota, keeping mind natural variability. In other dredging projects the triggers are set depending on what the ecological value is at a site (e.g. seagrass, invertebrates, shellfish beds). This may have been used as the basis for the agreed sites and triggers but it is not clear. Again this may be beyond the mandate of the PRG but we would benefit from clarification.
- The adaptive dredge management (Section 4) and assurance monitoring (Section 5) as well as the appendices with more detail have used acceptable and standard methods for the surveys and assessments against triggers and to assess effects beyond those anticipated. However, the PRG have a few questions for clarification:
  - Section 4.3.6; confirmation that with an extraordinary natural event, dredging can continue for the two working days the Regional Council have to respond that the event did not meet the criteria for such an event. This is stated in section 7.1, but unclear in section 4.3.6.
  - Section 5.1.2 says the locations are tba but it is noted that the locations are provided in the maps. We assume these are to be the ongoing locations?
  - Section 5.2.1 requires 10% of sites per sampling day but it not clear what the 10% refers to in relation to the 14-19 locations for water quality?
  - Section 5.3 doesn't specify how many samples will be obtained from the dredge hopper in order to be confident that that they are representative. Experience with hopper sampling for Port of Tauranga dredging indicates that a minimum of 3 samples (fore, mid and aft of hopper) are needed. However, it does say that the method should ensure that samples are representative, which may be sufficient.
  - Section 5.4 doesn't specify if bathymetric surveys are to be conducted by Single Beam (SBES) or Multi-Beam Eco-Sounders (MBES). MBES would provide a better coverage of the area surveyed by the transects specified in Table 5.1. The EMMP also doesn't specify the standard of the hydrographic surveys undertaken, unlike section 5.5 that does specify a required accuracy. The PRG assumes that they will meet Level 3 Guidelines of Good Practice for Hydrographic Surveys in NZ Ports & Harbours. The PRG also notes that the uncertainty in comparisons of survey data is dependent of the accuracy of each survey, and assumes that the monitoring surveys will at least be to the standard of the baseline monitoring. However, consent condition 8.9 only specifies that at least 10 transects be surveyed and doesn't require a minimum level of accuracy.
  - Sections 5.3 and 5.4, and the corresponding consent conditions do not indicate what changes would constitute a concern and therefore may require mitigation. The PRG note that the specified frequency of surveys in Appendix 1 of the Consent Order and outlined in the EMMP would not provide a reasonable indication of natural variability and will make it difficult to identify

dredging impacts if any eventuate. This is also indicated by Appendix C of the CDP Baseline monitoring report.

- Section 5.5. Fixed photo point monitoring should be taken at the same tide levels for valid comparison of images. For the analysis of historical shoreline positions, the EMMP should define over what period this analysis should cover (e.g. last 50-70 years?)
- Section 7.4 – minor but we note that the PRG also has the requirement after dredging stage completion to provide advice on whether any particular condition(s) should be subject to review (Condition 13.1.2).


Signed Peer Review Group

Derek Todd: ... 

Date: 1/06/2018

Mark James: 

Date: 1/6/2018

Willem De Lange: 

Date: 5/6/2018