
FURTHER ADVICE OF THE INDEPENDENT EXPERT GROUP TO THE INQUIRY INTO THE CHANNEL DEEPENING PROJECT, 27 JULY 2007

BACKGROUND

This document supplements the Independent Expert Group (IEG) interim advice dated 18 July 2007 in relation to the adequacy of:

- Port of Melbourne Corporation's (PoMC's) response to the IEG's May 2007 review of the Supplementary EES; and,
- PoMC expert witness statements to the Inquiry that are relevant to the IEG's expertise.

IEG ADVICE

QUESTION 3 - HYDRODYNAMIC MODELLING

While the witness statement by Provis notes that water level changes in the Bay will be often less than the maximum of 19 mm, it is the extreme events that remain the most relevant for assessment of impacts.

The hydrodynamic modelling is based on the proposed dredging depths in the Entrance and through the channels. The witness statements by Provis and Healy have noted that longer-term changes to the Sands region and channels will occur and the IEG supports this conclusion. As the sediment transport modelling in the SEES was unable to accurately predict these morphological changes, there is a risk that the long-term changes to currents may be greater than predicted.

As previously advised, once further information about the potential for additional erosion in the Entrance region is available, the implications of bathymetric changes for hydrodynamics and associated processes will need to be considered.

QUESTION 4 - TURBIDITY MODELLING

The IEG advises the Inquiry that consideration should be given, as part of the EMP, to monitoring the resuspension and eventual fate of sediments disturbed by dredging.

QUESTION 5 - SEDIMENT TRANSPORT

A primary goal of the sediment transport modelling was to consider the effects of channel deepening on the medium to long term dynamics of the Sands region, including changes to sand banks, effects on wave refraction and beach dynamics, and the magnitude of required maintenance dredging. The IEG has noted that while patterns of sand movement have been considered by Provis and Healy, no successful predictions of the sediment transport magnitudes have been made. Consequently, the detailed implications for the potential depletion of surface sands following the capital works and maintenance dredging are not yet known. The IEG advises the Inquiry that the witness statements have not advanced this matter, though it needs to be addressed in a longer term context in conjunction with future maintenance dredging programs.

The IEG's advice of 1 May 2007 supported the approach recommended by Prof. Terry Healy that including bathymetry (LIDAR) and multi-beam surveys of the Great Sands, and further sediment transport modelling are needed to monitor and predict dynamic changes to ensure that the new dynamic equilibrium anticipated to occur in the Sands region is specified. In this context, consideration should be given, as part of the EMP, to monitoring of seabed changes using techniques such as regular bathymetric surveys, bedform observations, grain size measurements, together with refined sediment transport numerical modelling. It may also be desirable for all maintenance dredging to be logged (in position, volume and sediment type/size) and for this information to be combined with data collected during channel deepening to assist future assessments of impacts on the Great Sands.