Office of the Environmental Monitor

Fact Sheet: Water Quality Monitoring Program

What is water quality?

Water quality in Port Phillip Bay (the Bay) is vital for maintaining a healthy ecosystem that supports a diverse community of marine plants and animals. Good water quality is essential to support beneficial uses such as aquaculture, fishing, recreation and tourism.

Water quality is commonly described by its physical, chemical and biological characteristics and is judged to be good when these characteristics are within limits that support its beneficial use. Water quality characteristics can vary depending on the environmental conditions and inputs from the surrounding catchment, as well as historical and current land use.

Water quality in the Bay is good by world standards, despite nearly four million people living around its fringes. It is surrounded by a water catchment of 9,790 square kilometres, consisting of 21 natural basins that flow into the Bay.

Photo: Above and below the water in Port Phillip Bay

Water quality is affected by the freshwater runoff from this catchment, which can carry sediments, nutrients, metals and organic contaminants into the Bay from rivers and drains.

Much of the sediment from the catchment area settles on the bottom of the Yarra and Maribyrnong rivers and will be subject to dredging during the Channel Deepening Project.

Several natural factors influence water quality in the Bay, including flushing of water from Bass Strait, freshwater inflows from rivers and discharges from industry.

Water Quality Monitoring Program

The Channel Deepening Project has a rule book, the Environmental Management Plan, which sets standards and controls to minimise risks to water quality, such as stirring up sediments that contain contaminants and making them available for uptake in the food chain.

The rule book includes the Water Quality Monitoring Program, which is one of nine Baywide Monitoring Programs. The program's objective is to detect changes in water quality outside expected variability.

The program monitors eight physical and chemical properties such as salinity and oxygen levels, two biological characteristics, as well as the concentrations of nine nutrients and nine metals including copper, nickel and lead at 11 fixed sites in the Bay (Figure 1).

How the Port of Melbourne Corporation will use the data

The Port of Melbourne Corporation (PoMC) will use results from the Water Quality Monitoring Program to detect changes outside of expected variability to water quality during the Channel Deepening Project and until 2012. Where changes outside of expected variability are detected, a risk review will be undertaken. It will determine if the changes are significant to the ecosystem of the Bay and any action that may be required.

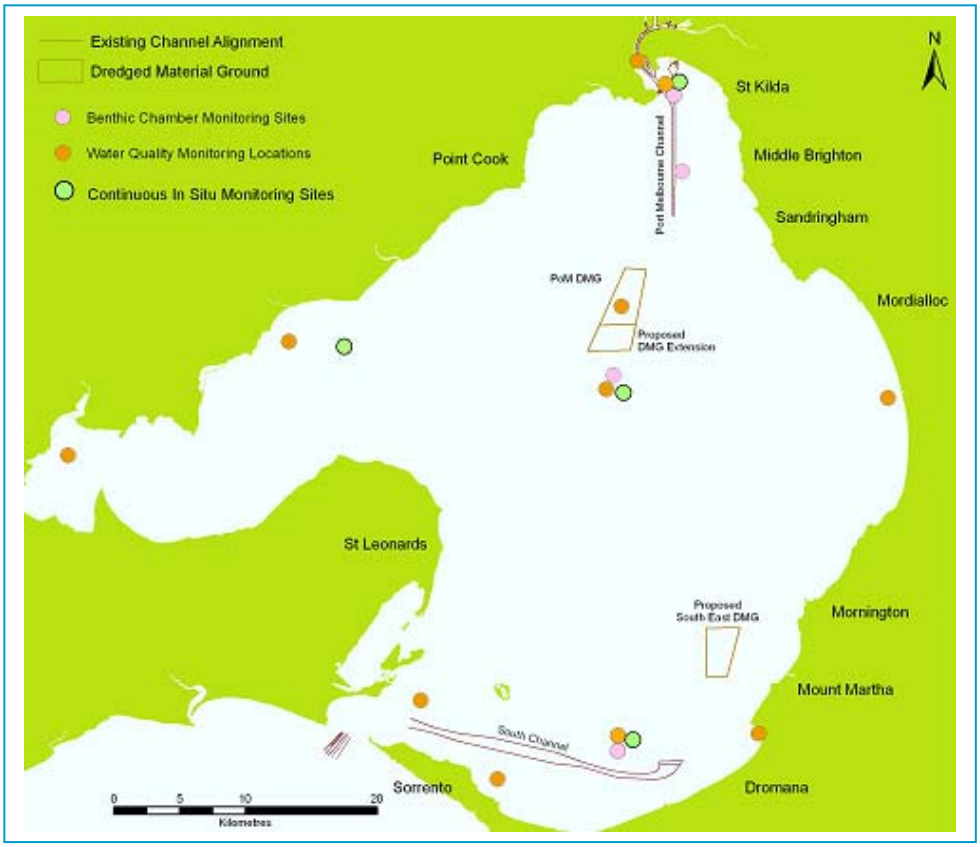

Figure 1: Locations of water quality monitoring program data collection sites.

The role of the Office of the Environmental Monitor

The Office of the Environmental Monitor (the Office) will scrutinise the Channel Deepening Project's effects on water quality to judge the environmental performance of the Project. The water quality monitoring data will be used to judge if the dredging effects on the water quality are consistent with expectations.

The Office will also monitor all data relating to PoMC's compliance with the management actions specified in the Environmental Management Plan, which have been designed to minimise effects on water quality.

These include Environmental Controls relating to when, where and how dredging can take place and have been designed to minimise the area and intensity of the effect on water quality.

The combination of these monitoring results will provide the Environmental Monitor with an understanding of potential changes to the Bay's water quality. The Environmental Monitor will use the results to judge the environmental performance of the Channel Deepening Project. For further information on the nine Baywide Monitoring Programs visit www.oem.vic.gov.au/Monitoringprogramsandresults.

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