

FREMANTLE HARBOUR — DREDGING IMPACTS

1283. Hon Giz Watson to the Minister for Transport

With regards to the likely impacts of the dredging of Fremantle Harbour and channel deepening, I ask —

- (1) Is existing stockpiled material at Rous Head to be mixed with the material from the Fremantle Harbour in the reclamation operation at Rous Head?
- (2) If yes to (1), —
 - (a) what is the nature of this material;
 - (b) does it contain toxins; and
 - (c) if yes to (2) (b), what are these toxins?
- (3) Will the Minister table the Preliminary Site Investigation (PSI) report for lot 1 on Plan 23900, produced in January 2008?
- (4) If no to (1), what will be done with this stockpiled material?
- (5) What is the estimated length of time that the geotextile material lining the containment wall for the reclamation area at Rous Head will remain impervious?
- (6) The surface sediment samples from the Entrance Chanel shows toxin levels well above National Ocean Disposal Guidelines for Dredged Material (NODGDM), how can the Minister be sure that none of that material will enter the environment in the future?
- (7) In the assessment of the suitability of Rous Head as a dumping ground, has any consideration been given to rising sea levels and or increased storm damage as a result of climate change?
- (8) What volume and concentration of toxic material is likely to reach Leighton, Cottesloe or Swanbourne beaches from the reclamation operations?
- (9) What volume and concentration of toxic material is likely to reach Leighton, Cottesloe or Swanbourne beaches from the off-shore dumping of dredging spoil?
- (10) What are the potential health risks on local beach/water users, for both adults and children, for each of the following contaminants, —
 - (a) TBTs (Tributyl tin);
 - (b) Arsenic;
 - (c) Mercury;
 - (d) Copper;
 - (e) Zinc;
 - (f) nickel;
 - (g) lead;
 - (h) chromium;
 - (i) cadmium;
 - (j) PAH (Polycyclic aromatic hydrocarbons);
 - (k) pesticides;
 - (l) organochlorides; and
 - (m) asbestos?
- (11) What are the World Health Organisation's (WHO) safe limits for each of the above?
- (12) What are the modeled worst case pollution scenario's for Leighton Beach and Cottesloe Beach from the Inner Harbour channel deepening dredging operations?
- (13) What beach/beaches are at risk of closure this summer along the west coast if pollutant levels exceed World Health Organisation standards and/or if sediment concentration reaches unacceptable levels?
- (14) How will the Minister ensure that the beaches are monitored and implement any beach closures?
- (15) What risk assessment has been made of the likely elevated risk to swimmers and other beach users of shark attacks in the circumstance of a visible plume?
- (16) Who made this assessment?
- (17) Who was consulted in the assessment process?
- (18) What strategies will the Minister implement to address any increased risk of shark attacks?

- (19) What contingency plan is in place if aerial shark patrols are ineffective in spotting sharks due to poor water visibility?
- (20) A report was produced by URS in 2007 entitled, 'Detailed Site Investigation Rous Head Reclamation Area'. This report was not made available by the Fremantle Port Authority during the EPA's PER assessment process, —
- (a) will the Minister table the report; and
- (b) if no to (20) (a) why not?
- (21) The statutory public consultation process carried out by the Fremantle Port Authority as part of the PER only involved a small number of stakeholders, what agencies were consulted during the preparation of the PER?
- (22) Were the following agencies or organisations consulted, —
- (a) Town of Mosman Park;
- (b) City of Nedlands;
- (c) Shire of Peppermint Grove;
- (d) Multiplex Living 'The Leighton' beachside apartment developer;
- (e) Save Freo Beaches;
- (f) Leighton Coastal Coalition; and
- (g) Cottesloe Coastcare Swanbourne Coastal Alliance?
- (23) If yes to (22), please summarise their response?
- (24) If no to any agency mentioned in (22), why not?
- (25) In the PER, the proponent does not specify key aspects of the project such a detailed operational plan for the reclamation of the Rous Head site, —
- (a) what is the material to be used in the construction of the seawall;
- (b) will the stockpiled waste materials be dumped into the water after the completion of the seawall;
- (c) what measures will be taken to stop toxic pollutants leaching out from under the gotextile barrier placed inside the seawall and through the bottom of the reclamation area into the ocean; and
- (d) what contingency plan is in place in case any material used in the seawall is dislodged or damaged by waves and/or currents?
- (26) Did the Fremantle Port Authority provide a detailed plan on how these operations will take place including a time schedule?
- (27) Will the Minister table this plan?
- (28) Has the EPA in its assessment taken into consideration cumulative effects of other projects that will or likely to be taking place in Cockburn Sound, such dredging operations for the new James Point private port which is likely to add another sediment plume to the already heavy plume from the FPA operations?
- (29) What is potential effect of the sediment plume on the following species of sea mammals, —
- (a) bottlenose dolphins in the Swan River; and
- (b) Australian sea lion at Carnac Island?
- (30) Why does the extent of the plume obtained from the modelling in the PER prepared by SKM appears to skirt around Carnac Island?
- (31) Has the 173 000 cu m of contaminated waste at Rous Head that is to be used in the reclamation operations been listed as a contaminated site under the *Contaminated Sites Act*?
- (32) If no to (31), why not?
- (33) If yes to (31), has the FPA legal authority to move and dump into the ocean a large amount of contaminated material?

Hon SIMON O'BRIEN replied:

- (1) Yes
- (2)
 - (a) The stockpiled material at the Rous Head reclamation area (the northern portion of Lot 467 on Plan 218636) was sourced from a variety of locations and activities across the Fremantle Ports Inner Harbour Area between 1995 and 2005, including material from previous dredging of Fremantle Inner Harbour, concrete from demolition of the old grain silos at the Inner Harbour and fill from Inner Harbour civil works.
 - (b) No, the stockpiled material does not contain toxins however some of the material placed into the stockpile contains levels of copper, zinc or the organochlorine pesticide dieldrin above soil Ecological Investigation Levels but below Health-based Investigation Levels for all land uses.
 - (c) Not applicable
- (3) Yes. I seek leave to table a copy of the Preliminary Site Investigations of North Quay, Fremantle Ports, Western Australia, report.
- (4) Not applicable
- (5) The geotextile liner is made from polypropylene, which is a very durable polymer that has excellent chemical and biological resistance and is estimated to remain intact for decades. Its function is to act as an impervious liner to fine particles in order to prevent their escape whilst the seawall and reclamation area settles and stabilises i.e. it is not required to serve any significant purpose after stabilisation occurs.
- (6) The surface sediment samples from the entrance channel do not contain toxins. The surface sediment samples from the entrance channel were tested for the presence of more than 50 potential contaminants. Several of these substances were found at levels above the NODGDM screening levels. Exceedance of the NODGDM screening levels does not mean that the substances are at levels that will cause environmental effects. Exceedances of the screening levels triggers further investigation to determine whether the substances are likely to dissociate from the sediment and be released into the surrounding water. If further investigations show the concentrations of substances are estimated to exceed the relevant water quality guidelines then ecotoxicity tests are generally undertaken to determine whether actual effects on marine biota are likely and at what concentrations.

All substances that exceeded NODGDM screening levels in the sediments were found to be strongly bound to the sediment particles and did not result in exceedance of the water quality guidelines. All Entrance Channel sediments will be disposed at Rous Head behind a geotextile lined seawall to prevent the sediments from washing into coastal waters. I am advised that it is therefore considered that the levels of contaminants do not pose a health or environmental risk..
- (7) The design of the protective seawall and the level of reclamation has taken into account predictions on climate change and sea level rise by the Intergovernmental Panel on Climate Change.
- (8) The levels of contaminants in the dredged sediment to be placed into reclamation pose no health or environmental risk. Studies undertaken by Fremantle Ports show that any dissolved contaminants in the return water will meet a high level of ecological protection and health related guidelines for recreational waters at the edge of the small moderate ecological protection zone around the Rous Head return water discharge point.

Sediments will be placed in the reclamation area at Rous Head behind a geotextile lined seawall to prevent the sediments from washing into coastal waters.
- (9) I am advised that the levels of contaminants in the dredged sediment to be placed offshore are therefore considered not to pose a health or environmental risk. Sediment samples from the proposed deep water Channel dredging area did not exceed NODGDM screening levels and are considered suitable for offshore disposal.

The nature of the material to be dredged in the deep water channel is mainly crushed limestone rock approximately 10-100mm in size. The size of the crushed material to be placed at the offshore disposal site and the investigations undertaken by Fremantle Ports shows that the spoil ground will be stable.
- (10) (a)-(m) This question should be referred to the Minister for Health.
- (11) This question should be referred to the Minister for Health.
- (12) As already discussed above (Questions 6 and 8), the levels of contaminants in sediment plumes pose no environmental or health risk.

Sediment plume modelling under worst case scenarios was undertaken to determine the maximum potential extent of visible suspended sediment plumes from the dredging program. The results indicate that visible plume could occasionally extend to areas beyond Leighton and Cottesloe beaches.

Impacts of the very similar dredging project conducted in 1989 were very localised.

- (13) There is negligible risk of any beach closure as a result of the proposal.
- (14) This question should be referred to the Minister for Health.
- (15) No risk assessment for this issue has been undertaken. Visible plumes from the very similar dredging project conducted in 1989 were very localised.
- (16)-(18) Not applicable
- (19) Normal shark patrols are expected to be in place. Sediment is routinely entrained in sea water by natural swell and wave action and visibility is routinely affected by sea surface state conditions.
- (20) (a) Yes. I seek leave to table a copy of the 'Detailed Site Investigation — Rous Head Reclamation Area' report.
- (b) Not applicable.
- (21) A wide ranging stakeholder consultation program was undertaken as part of the Public Environmental Review. Stakeholders consulted included:

Federal Government

Dept of Environment, Water and Heritage
Australian Customs

State Government

Dept of Environment and Conservation,
Dept for Planning and Infrastructure,
Dept of Treasury and Finance,
Main Roads Western Australia,
Fisheries WA,
Dept for State Development,
Dept of Indigenous Affairs,
Swan River Trust,
LandCorp,
Challenger TAFE,
*Tourism WA,
Public Transport Authority,
WA Maritime Museum,

Local Government

City of Fremantle — represented at PER planning workshop. Invited to make a submission on PER.

*Town of East Fremantle — represented on Fremantle Ports Inner Harbour Community Liaison Group which has been regularly briefed on the Inner Harbour Deepening Project, with opportunities for discussion. Invited to attend workshop on PER planning. Invited to make a submission on PER.

*Mosman Town Council (invited to attend workshop on PER)

Cottesloe Town Council (invited to make a submission on PER)

The South West Group (representing Cities of Cockburn, Fremantle, Melville, Rockingham and Towns of East Fremantle and Kwinana) was represented at PER planning workshop. The South West Group was invited to make a submission on the PER.

Industry and business

Fremantle Chamber of Commerce — represented at PER workshop. Invited to make a submission on the PER.

WA Chamber of Commerce and Industry — Invited to make a submission on the PER

Planning and Transport Research Centre — Invited to make a submission on the PER

WA Port Operations Task Force — Invited to make a submission on the PER

Shipping Australia — Invited to make a submission on the PER

Sea Freight Council

Shipping company representatives
Stevedoring companies (DP World and Patrick Terminals) —Invited to make a submission on the PER
Svitzer Australia (towage) —Invited to make a submission on the PER
Fremantle and Kwinana Pilots — Invited to make a submission on the PER
Inner Harbour ferry operators
Victoria Quay tenants. Those requesting during consultation a copy of PER and provided with the document in response were:

Maritime Museum

Challenger TAFE

North Quay Tenants. Those requesting during consultation a copy of PER and provided with the document in response were:

Westjet Propulsion Pty (North Port Boat Lifters)

Geraldton Fisherman's Co-Operative Ltd

Coote Logistics (formerly FDC Container Logistics)

Carnegie Corporation

Harbour Services Australia

The Underwater Centre Fremantle

Beauridge Pty Ltd

Jayde Transport

Perth Diving Academy

WA Fishing Industry Council

Unions

Maritime Union of Australia

Community and special interest groups

*Conservation Council of WA — Invited to attend PER workshop. Invited to make a submission on PER.

*Cockburn Sound Management Council — Invited to attend PER workshop

Boating Western Australia — represented at PER workshop

*Fremantle Surf Lifesaving Club — invited to attend PER workshop

Port Beach Polar Bears — represented on Fremantle Ports Inner Harbour Community Liaison Group. Represented at workshop on PER.

North Fremantle Community Association — represented on Inner Harbour Community Liaison Group (Precinct briefing advertised via flyer in local newspaper)

Perth Diving Academy — requested PER during consultation and provided with a copy for comment

Recfishwest — Represented at PER workshop. Invited to make a submission on the PER

Indigenous elders — consulted as part of the Section 18 application. (Senior representatives of the Combined Metropolitan Working Group Native Title Holders; The Independent Aboriginal Environmental Group; the Ballarruk and Didjarruk Peoples; the Mooro Region Oor-Dal-Kalla Tribe Yalagongas Group; and the Bibbulman Tribal Group).

Fremantle Ports Inner Harbour Community Liaison Group/Fremantle Ports Kwinana Liaison Group (These groups established by Fremantle Ports meet quarterly. They have representatives from local government, government agencies, local community precincts, special interest groups — briefings/discussions on plans for the deepening, advised directly of public comment opportunity at the time of PER advertising. (Members of the Inner Harbour Community Liaison Group invited to participate in PER workshop).

Note: Those above marked with an asterisk were invited to participate in PER workshop but did not send representatives.

- (22) (a) Invited to attend a workshop on PER preparation. (As stated above elected not to send representatives)
- (b)-(g) No
- (23) Not applicable
- (24) The proponent's PER document was made available for a public review period of six weeks from 19 January 2009 closing on 3 March 2009. The invitation for public submissions was advertised

by the proponent in The West Australian newspaper on 17 January and 7 February 2009 and in four local newspapers on two separate occasions. During this time, any persons or organisations were able to make submissions to the EPA. The PER was available at a number of local libraries and for download from the Fremantle Port Authority website. While the above agencies and organisations were not provided with a copy of the PER document, they were able to obtain a copy of the PER from the proponent's website and make a submission to the EPA.

- (25) (a) The material to be used in the construction of the seawall is quarried limestone and granite rock.
- (b) The stockpiled materials will be placed and compacted in layers behind the geotextile lined seawall.
- (c) As already discussed above, the levels of contaminants in the sediments pose no environmental or health risk.
- Materials to be dredged and materials in the existing stockpile have been comprehensively sampled and tested and are suitable for use in reclamation.
- Laboratory elutriate testing and a sea water trial were conducted on the concrete to demonstrate that the material would not adversely impact the marine environment. In addition ongoing monitoring will occur to ensure that marine water quality is maintained.
- (d) Rock armour is being placed progressively along the seawall to protect it from wave and storm damage.
- (26) Yes. A detailed description of the seawall construction operation and time schedule is provided in the proponent's PER.
- (27) Not applicable
- (28) This question should be referred to the Minister for the Environment.
- (29) (a)-(b) This question should be referred to the Minister for the Environment.
- (30) I am advised that the question is referring to figures which show contours for the furthest extent of the predicted visible plume at 2mg/L above background. It is a cumulative plot of all modelled occurrences where more than 2mg/l of sediment was predicted greater than 3 hours. Modelling was during daylight hours, for events of greater than 3 hours duration and for the duration of dredging.
- I am advised that the reason that the predicted visible plume contour skirts around Carnac Island is because:
- the model predicts stronger currents close to the shore which disperse any sediments, and
 - although there may have been a modelled value of total suspended solids above background it didn't reach 2mg/L above background for more than 3 hours.
- (31) Yes
- (32) Not applicable
- (33) Fremantle Port Authority has environmental approval to undertake reclamation at Rous Head subject to the conditions in Ministerial Statements 801 and 383.

[See paper 1549.]