

Our Ref: 405062_LEO_023a

12 December 2006

Major Development Assessment
Department of Planning
GPO Box 30
SYDNEY NSW 2001

Attention: Paul Weiner

Dear Paul,

REVIEW OF SUBMISSIONS – APPLICATION # 05_0174 PROPOSED DREDGING OF OYSTER LEASE AND OPERATION OF SAND STOCKPILE – OYSTER LEASE # 80-178 AND LOTS 59, 101, 123, 124, 125 DP 753207, LOT 12 DP 816473, 2 – 6 RODMAY ST, TUNCURRY

We refer to the above Environmental Assessment and to submissions received by the Department during the public exhibition period. This report constitutes a response to issues raised in the submissions. The report is structured to address the submissions in the order provided by the Department via email on 4 December 2006. Details of the public submissions and response are provided in **Table 1**. Additional information is provided in response to the Agency comments in the body of this letter.

1. Agency Comments Review

Great Lakes Council

Summary of EA Report submission and response

Flooding, access, rehabilitation of the site following completion of dredging, ecological matters and legislative directions, absence of SIS, ecological description, justification, survey and assessment, protective safeguards, mitigation measures and type, nature and significance of ecological impacts risks in terrestrial and estuarine context. (We note that GLC has not provided any substance to the issues raised and are requesting further time for comment, despite having the draft EA since July 2006 and over 5 weeks to comment on the final EA report. It is requested the Department take this into consideration when evaluating our response to the issues raised. We note that Council's response is very similar to that provided following lodgement of the EA in July 2006 – no substance to issues raised).

All the issues raised by GLC have been addressed adequately in the relevant sections of the EA. Note that under Part 3A there is no requirement for an SIS, notwithstanding, the Section 5A Assessment for the project concluded that there would be no significant impacts on any Threatened species, populations of ecological communities. Further, there will be no rehabilitation of the site once dredging is completed. It is proposed to return the stockpile site to its existing use as low intensity grazing.

Department of Lands

The Department of Lands has not given landowner's consent to lodge the application.

Advice provided previously from the Department indicated that they could not provide landowner's consent without seeing the project documentation. This comment is therefore perplexing, given that they are now in receipt of the project documentation.

Figure 1.4 incorrect with respect to land status.

The figure will be amended to show the Crown road reserves (refer to attachment). The location of the pipeline, booster pumps and return waters pipeline will not be on the Crown road reserves. The pipeline will, however, be required to cross the Crown road reserves at two locations shown in the attached figure. Note that these road reserves are not used by the public (therefore there are no issues with respect to impediment to access) and are the subject of ongoing permissive occupancies held by the landowner.

Points 2 – 7 re: hydrodynamic modelling

There is no substance to the Department's comments regarding the efficacy or otherwise of the hydrodynamic modelling undertaken. The Department's comments regarding sediment transport, erosion of the 'barrier', greater efficiency and increased velocities *et al.*, are not based on an expert's understanding of the dynamics of the system and have obviously been written by someone who is not an expert in the assessment of numerical hydrodynamic modelling, or estuarine hydrodynamics in general.

Department of Primary Industries

Summary of EA Report submission and response

Proposal primarily a sand extraction operation, development of oyster lease as an aside.

The proponent is an oyster farmer whose intention is to improve an existing lease area to farm oysters. The utilisation of the sand resource is stated in the EA, as a means of paying for the dredge operation, which would be undertaken at the proponent's expense, by the proponent, using his own equipment. No external contractors would be involved in the dredge works. Therefore, the DPI's (incorrect) view of the project's intent is irrelevant to assessment of the impacts of the development.

The loss of unvegetated soft substrates (45 %) and low density seagrass areas (15 %) will have direct, and indirect, impacts upon the fisheries environment.

Impacts of seagrass loss were addressed in the EA and accompanying aquatic ecology report. The impacts were determined to be negligible, given that the higher density, good quality seagrass habitat in the south of the lease area would be retained, while the seagrass areas to be dredged are sparsely distributed and of average quality, due to the periodic wetting and drying of the tidal cycle. Further, the report indicated that the *Zostera* would recolonise the lease area at 2 m depth and the coverage was concluded by a specialist to result in a net increase compared to present, due to the permanent inundation.

The intertidal areas in question have been identified by officer's from the Department as being highly productive habitat for invertebrates. The noted density of nippers is greater than other similar areas and that this flat is considered the largest and most productive flat of its type in the lower estuary. Nippers are the most significant prey species for Whiting and the loss of this expanse of habitat has the potential to affect whiting populations, as significant recreational and commercial species in Wallis Lake.

While it is accepted that the area is productive, we would request a copy of the Department's research that supports the claims that this area is "*considered the largest and most productive flat of its type in the lower estuary*". As indicated in the aquatic ecology report submitted with the EA, sampling indicated that the density of nippers was 4 per m³ of bed substrate. This density of nippers is concluded by our aquatic ecologist to be representative of similar habitats in Wallis Lake.

The suggested negative impacts on Whiting populations as a result of the dredging are strongly refuted for several reasons. First, Trumpeter Whiting (*Sillago maculata*) and Sand Whiting (*Sillago ciliata*) have a wide range of prey species, not limited to nippers, and forage in a variety of soft substrates. As feed species include a huge diversity of invertebrates (including polychaete worms and bivalves) and the depth of the final substrate may result in subtle changes in density of nippers, there is, however, likely to be a corresponding shift in densities of other prey species such as polychaete worms, bivalves etc. Further, the benthic invertebrate population is predicted in the EA to recolonise the dredged area over time. This includes nippers, which would be available for Whiting predation, although there would be a time lag of several months before the area was recolonised. Therefore, any impacts to the nipper population would be temporary. In addition, the yabby population is not immobile. In flooding events with associated entrainment of sediments and scouring of the substrate, the yabbies leave and swim with the current and settle at the next suitable location. It is likely that during or following dredging, the nippers will move to/colonise nearby grounds, for example, the neighbouring shallow grounds with soft substrate and seagrass to the west of the proposed dredging site.

Second, the statement that the loss of this nipper habitat would affect the population of Whiting in Wallis Lake is considered to lack scientific validity. This is particularly due to the apparent lack of consideration given to the species habits, the final habitat type produced by the project and other issues such as recreational fishing pressure, which is likely to be a limiting factor to population size above and beyond the constraints of present food resource availability.

Third, to suggest that the dredge operation would impact negatively on the Whiting population would be to suggest that the proposed dredge area formed a large component of feeding grounds for the entire Whiting population in Wallis Lake. This, however, is not the case. Whiting utilising the lower end of the estuary feed preferentially in areas where bottom sediments are mobile (as a result of tidal flows), or on steep banks, making it easier to find prey as they become exposed by mobile bed sediments. A number of popular Whiting fishing grounds occur in the lower estuary, shown in the attachment. These include the following areas:

1. above and below 'The Step';
2. Hells Gate Corner (north of 'The Step');
3. north western side of Little Tern Island (south of the bridge);
4. Main Wallamba channel (south of Tern Island); and
5. The 'Duck Pen'.

Whiting fishing grounds also occur in the Wallangat/Coolongoolook, locations also utilised by commercial fishers.

Areas 1- 5 all occur where bed sediments are either mobilised by tidal flows or where there are steep subaqueous profiles, and consequently are feeding grounds for Whiting and therefore popular Whiting fishing grounds.

Conversely, the lease area is not an area that is fished for Whiting species. The bed sediments are not mobilised by tidal flows, indicated by the absence of appropriate bed forms and the area does not contain steep subaqueous banks. Consequently, the lease area is not a major source of prey for the Whiting population in Wallis Lake (nor is it an area that is fished for Whiting, either commercially or recreationally). This is not surprising, given that large areas of the lease are sub-aerial throughout the tidal cycle. Further, only a small number of Sand Whiting were sighted in the lease area during aquatic ecology surveys. Hence the DPI's assertion that the proposal "has the potential to effect Whiting populations" is not supported by a rational examination of the facts.

Fourth, the dredged area would create up to 8 ha of waterway which does not currently exist. This waterway would provide habitat for numerous other species (as well as Whiting sp.) which does not currently permanently exist. As indicated in the EA, this would provide additional opportunities for both recreational and commercial fishing. In addition, it is well known that the presence of oyster leases in and of themselves provide good habitat for benthic fauna and fish, a fact demonstrated during the annual Bream fishing contest in Wallis Lake, where the majority of competitors head straight for the oyster leases when competition commences.

In summary, given that a large proportion of the lease area is sub-aerial at low tide (and therefore for significant periods of the tidal cycle is unsuitable for Whiting feeding), in addition to the widespread nature of the Whiting population and feeding grounds as described above, the suggested negative impact on the Whiting population in Wallis Lake is not valid. It is therefore strongly refuted as being a valid reason for DPI to object to the proposal.

.....this area is still considered very important for live bait collection by recreational fishers. There has been four letters of objection.....from concerned recreational fishers.

The alleged importance of this area for nipper collection by recreational fishers is strongly refuted. The lease area is visited only by those recreational fishers with boats predominantly during the summer

holidays for bait collection. The number of users as observed by the leasee and previous lease owner over numerous years and reported in the EA indicates low usage rates, with a small number of people per day utilising the area during peak periods. While recreational fishers have easy accessibility to the nippers at this site, it is possible that they have mistakenly taken advantage of this site compared to other nipper sites. All but one nipper collector at the site surveyed during the course of the aquatic surveys believed that they could take 200 nippers per day for bait rather than the 20 stated in the Fisheries Guide. This is because they mistakenly associated these with the freshwater yabby, *Cherax destructor*, which has a bag limit of 200, as opposed to *all other marine invertebrates*, which have a bag limit of 20 per day.

Further, there are numerous alternatives that are readily-available for Whiting bait utilisation, which include beach worms, prawns and the increasingly popular plastic lures. Further, there are numerous other areas available in Wallis Lake to collect nippers (both by boat and on foot), including the large shallow shoal immediately upstream (west) of the lease area, although this area is inundated by shallow water (waist height) at high tide. Therefore, to suggest that the dredging of this area would detrimentally impact upon the ability of recreational fishers to catch Whiting in Wallis Lake due to their inability to use this area to collect nippers clearly cannot be supported by analysis of the facts, a point which is further enhanced by the number of objections from recreational fishers with boats (4) compared to the number of recreational fishers who use the lake (significantly greater than 4)!

Therefore it has been demonstrated that impacts on recreational fishers have been adequately addressed in the EA. These comments are therefore strongly refuted as being a valid reason for DPI to object to the proposal.

Concerns have also been expressed by recreational anglers about the potential for the dredging to further reduce velocities of water flows in the boating channel.....increasing deposition and further reducing navigability.

Maritime NSW has not expressed any concerns regarding potential impacts on channel navigability. Hydraulic/morphodynamic issues were addressed adequately in the EA, which indicated no material impacts of the dredging operation in respect of reducing velocities and increasing deposition such that navigability would be affected.

Draft NSW Oyster Industry Sustainable Aquaculture Strategy. Proposal does not comply with the principles outlined in draft OISAS

As stated in Section 2.3.4 of the EA, a permit from the DPI is not required under Section 201 of the *Fisheries Management Act 1995* for the project, as a Licence will be issued under the *Crown Lands Act 1989* for dredging purposes (refer to Dept Lands submission on project). Therefore principles outlined in the draft OISAS regarding maintenance dredging do not apply to the project, including the maximum dredge depth provisions, as they apply only where a permit under Section 201 of the *Fisheries Management Act 1995* is required for dredging.

Notwithstanding, the EA documentation has provided comprehensive analyses of the potential impacts of dredging to this depth with respect to local morphodynamics and ecology and concluded that there would be no significant impacts as a result of dredging to this depth. These comments are therefore strongly refuted as being a valid reason for DPI to object to the proposal.

The concerns relate to the presence of fluvial silts in the dredge material and the presence of PASS but most critically the depth propose by the proponent is almost twice that identified in OISAS.

Section 4.2.1 of the EA addressed Acid Sulfate Soils. Results of laboratory analyses of samples indicated that the dredge material contained an average silt/clay content of 5.25 %. Consequently, the material is not Actual Acid Sulfate Soil, though is classified as Potential Acid Sulfate Soil (PASS), based on % Chromium reducible Sulfur. The material was determined, however, to have insitu neutralising capacity due to the negative net acidity resulting from the shell content. As such, the addition of lime for neutralisation was not recommended by the laboratory. Therefore PASS is not an issue for the development, though return waters will be monitored for pH and will not be returned unless they reach agreed pH criteria as determined by the DEC and set in the conditions of consent. These comments are therefore strongly refuted as being a valid reason for DPI to object to the proposal.

As discussed elsewhere, the principles outlined in the OISAS relating to dredge depth are applicable only to the issuing of a licence under Section 201 of the *Fisheries Management Act 1995*, which is not required by this project. Further, the impacts of a 2 m dredge depth have been justified in terms of current oyster farming methods to produce the finished product quicker, estuarine morphodynamic processes (hydraulic modelling) and ecology, both of which indicated no adverse impacts as reported in the EA.

The DPI has a published policy for dredging and reclamation (Section 5.1.3 of the Aquatic Habitat Management and Fish Conservation Update 1999 – copy attached). Part (d) of Section 5.1.3 clearly states:

(d) Dredging in shallow areas generally must not exceed a depth of 2 m below mean low water mark, to facilitate water mixing and ensure that the substrate remains in the light penetration (euphotic) zone to allow recolonisation of algae, seagrasses or macrophytes.

Therefore, the proposal to dredge to a depth of 2 m below mean low water is consistent with published DPI policy for dredging.

As indicated previously, the seagrass areas to be dredged are extremely patchy and of poor quality, and the dredge depth will provide for regrowth of the seagrass under permanently inundated conditions. *Zostera* will grow at 2 m depth, particularly in areas such as this where turbidity is generally low.

Although the application of the 1 m dredge depth limit as indicated in the draft OISAS is not relevant to the project, it is important to recognise that modern oyster farming techniques require dredge depths greater than 1 m, for several reasons. We have reproduced below correspondence from the proponent outlining the practical, operational reasons for the requirement of a 2 m dredge depth.

1. *The DPI's draft OISAS restriction on dredging to a 1 metre depth is out of date and references an era of the 1950's to 1970s, where smaller punts that draw less water and used smaller motors, slower oyster growth rates and more traditional methods of farming (eg. wading or unpowered punts) were the norm for the industry. It may be applicable in places like Merimbula, but not in Wallis Lake today, using the diverse methods of farming required to produce the quantity of oysters demanded by today's market, business expenditure and to meet the (DPI's own) stated aim of the draft OISAS, which is to increase oyster production in NSW by 65 %, to 120,000 bags per annum.*
2. *If a 1 or 1.5 m dredge depth is a condition of the consent, I am restricted to farming this lease only on high tide (that tide being a moon phase tide), farming 2 m oyster sticks. If I was to remove my sticks at method of farming at low tide, I would have to unwire the sticks from the floats, have one person hold onto the frame of stick oysters, then move the oyster punt sideways at least 1 m. This would result in the loss of a quantity of the biggest and best oysters, which are located on the end of the sticks. An example is 100 floats, 1300 frames, and a loss of three dozen oysters from dragging in the sand at \$2.80 a dozen (x 1300 frames = \$3640.00 of loss).*
3. *If a frame breaks loose, it would drag along the bottom or break apart on the bottom, stirring up sediment, until it was located and repaired. I would lose a lot more oysters and as well, as the biggest oysters are located on the ends of the sticks and these would be lost as the end of the stick is retrieved from the bed. Also, a frame attached to the float at low tide would look unsightly. Based on previous experience, during extreme weather it is not unknown for up to a hundred frames to go down, with the resulting mess and entrained sediment being a real problem.*
4. *At a 2 m depth, at low tide I can work at anytime of the day by keeping the punt moving along the floats, grabbing the frames of sticks and stacking them and then grabbing the next and so on. Also at a 1 m depth, a punt loading drawing 0.4 to 0.5 m, as well as using the 90 HP motor leg, there is no chance of any seagrasses regrowing between the cultivation, as they would be chewed up and destroyed. Trimming of the motor is not an option as you cannot steer a fully load punt with the motor trimmed. At a 1 m maximum dredge depth, I therefore cannot meet the requirements of providing for regrowth of Zostera in the lease area, as they would be destroyed.*
5. *It is apparent that the DPI policy needs to be revised on an estuary by estuary basis, where the type of oyster farming and dynamics of sand movement used is taken into account.*

The comments by the DPI regarding a maximum allowable dredge depth are therefore strongly refuted as being a valid reason for DPI to object to the proposal, based on the irrelevance of the draft OISAS principles to the project, the consistency of the proposed 2m dredge depth with published DPI policy and the operational requirements of the oyster farming methods as detailed here.

Table 1 - Response to issues raised from public submissions

Issues Raised	Response
Application supported	
Objection. Change of use of oyster lease; lease area should be surrendered if original use not sought; application is really for sand mining; residential area will be degraded with noise, sight, environmental pollution and damage, damage to Seagrass, damage local yabbie breeding area between lease and No. 1 pump,	• The proposal is undertake development that would allow the resumption of oyster farming over the lease area. There is no planned “change of use” and the “original use” is intended by the application. • The application is for dredging of sand to facilitate oyster farming on the lease and the subsequent operation of a sand stockpile using the dredged material. The volume of sand to be dredged is too small to be logically considered to be a “sand mining operation”. • Noise issues addressed adequately in EA. • Visual impacts addressed adequately in EA. • Issues surrounding potential pollution of waterways addressed adequately in EA. • Issues surrounding seagrass addressed adequately in EA. • Issues surrounding benthic fauna addressed adequately in EA.
Objection. Too close to residential area, location of stockpile site in Rodmay St, Rodmay St too close to Tuncurry, sand will blow around, noise and extra traffic, sand stockpiles unsightly	• Noise issues addressed adequately in EA. • Air and dust issues addressed adequately in EA. • Visual impacts addressed adequately in EA.
Objection. Loss of yabbie grounds, sand flats unique and valuable for fish and birds; sand flats good recreational resource at low tide; alternate sites available elsewhere	• Impacts on recreational fishing in lease area addressed adequately in EA. As indicated in the EA, while the yabbies might become unavailable to recreational fishers, they will re-establish in the dredged bed area and be available for fish.
Application supported	
Objection. significant habitat for Black Swans; best yabbing site in Wallis Lake, loss will affect tourism economy; noise from dredge; possibility development would not proceed; Seagrass loss	• There is no evidence to support the claim that this is the “best yabbing site in Wallis Lake”. • Area not identified as a significant habitat for Black Swans; • No evidence to suggest loss will affect tourism economy; • Noise issues addressed adequately in EA. • The proponent (an existing oyster farmer in Wallis Lake) fully intends to proceed with the development if approved, including the state intention of operating an oyster farm on the lease area.

Table 1 - Response to issues raised from public submissions

Issues Raised	Response
Objection. Erosion of river banks;	Issue addressed adequately in EA. No erosion of river banks predicted by hydraulic modeling.
Site a natural habitat; alteration to tidal flows; proposal a commercial sand operation; lake bed alteration detrimental to co-op members; preliminary work carried out on pipeline	- Tidal flows will not be materially affected by dredging. Issue addressed adequately in EA. - The application is for dredging of sand to facilitate oyster farming on the lease and the subsequent operation of a sand stockpile using the dredged material. - No evidence to suggest proposal would be detrimental to commercial fishers. As indicated in the EA, the dredging would result in an additional 8 ha of waterways for commercial and recreational fishing. - No preliminary work has
Objection. Damaging to environment, plants, birds, fish and other wildlife in area; lease will be an eyesore; tidal flows affected; noise; channel hydraulics and morphology; significant impacts on recreation and agriculture;	- Environmental impacts on the environment (including noise, visual, air and dust) addressed adequately in EA - Ecological impacts addressed adequately in EA. - No significant impacts on recreation identified in EA. - No significant impacts on agriculture identified in EA.
Objection. Change direction and speed of tidal flows and resulting sediment transport issues; dirty and contaminated water flowing into Jonnel cove.	- Tidal flows will not be materially affected by dredging. Issue addressed adequately in EA. - Sediment transport issues addressed in EA. No erosion of foreshores predicted nor accumulation of sediment in Jonnel Cove entrance. - The EA did not identify any issues with contamination.
Objection. Lease area home to a colony of endangered Black Swans; nipper collection ground; dredging will alter the flow of the river;	- Black Swan usage of the site not identified as an issue. Black Swans not endangered. - Issue regarding nippers addressed in EA and further in this letter. - Hydrodynamic impacts addressed adequately in EA. River flow will not be adversely altered.
Objection: EA is misleading and there is no support to dredge the new ground; site is important for recreational fisher nipper collection and wading/migratory birds; 2 m depth of dredging not consistent with DPI policies;	- EA is not misleading and has fully justified the proposal to dredge. - Issue of nipper collection addressed in this letter. Ecology report in the EA identified that the area is not critical habitat for any bird species. The site does not contain any areas of high tide roost; - Depth of dredging justified in EA and further justified in this response;

Table 1 - Response to issues raised from public submissions

Issues Raised	Response
mangroves to be dredged; creative accounting; route of pipeline adjacent to Duck Swamp in sensitive area; Acid Sulfate issues scantily addressed; concerns regarding effects on hydraulics of the lake; EA is deliberately biased	• No mangrove areas are proposed to be dredged; • Financial estimates provided in the EA are based on sound analysis of likely income and expenditure throughout life of project; • Justification of pipeline route has been justified in EA. No adverse impacts to intertidal habitat will occur as a result of the proposed location of the pipeline; • Geotechnical and laboratory assessment of ASS issues reported in the EA. ASS not a major issue for the project. Material does not contain ASS. • Results of hydrodynamic modelling reported in the EA indicated no adverse impacts on river morphodynamics. • EA was prepared by independent consultants and is subject to review of Government agencies. There is no bias, deliberate or otherwise, in the EA.

We trust that the response provided in this letter has addressed the issues raised and look forward to working with the Department further if required to resolve any other outstanding issues. If you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully
Orogen Pty Ltd

A handwritten signature in black ink, appearing to read 'Meleo', written in a cursive style.

DR JUSTIN MELEO
Project Director