



Department of
Infrastructure, Planning and Natural Resources

**PROPOSAL BY GREAT LAKES COUNCIL
FOR PLACEMENT OF SAND
AT JIMMYS BEACH, PORT STEPHENS NSW**

**Report on the assessment of a Development Application (DA 312-7-2003)
Pursuant to Section 80 of the
Environmental Planning and Assessment Act, 1979
S02/01646**

Department of Infrastructure, Planning and Natural Resources

March 2004

PROPOSED JIMMYS BEACH SAND EMBLACEMENT, PORT STEPHENS

REPORT ON THE ASSESSMENT OF A DEVELOPMENT APPLICATION (DA 312-7-2003) PURSUANT TO SECTION 80 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

File: S02/01646

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EXECUTIVE SUMMARY

Ongoing erosion of sand from the beach foreshore is adversely affecting Jimmys Beach at Port Stephens. The project will provide protection from erosion of the beach and will also protect residential properties in the area. The area is a popular holiday location and the project will enhance the value of the beach for recreational purposes.

Great Lakes Council proposes to repair the damage to the beach by extracting sand from a sand bank on the western side of Yacaaba Isthmus, approximately 1.5 kilometres south east of Hawks Nest, within Port Stephens. The extracted sand is to be deposited at Jimmys Beach, over a length of some 700 metres, from east of Gemalla Street to Jacobba Street. The total extraction would be 90,000 cubic metres (m³), over a maximum period of three years, involving an initial extraction of 40,000 m³ over a six month period, followed by five smaller half-yearly operations of 10,000 m³ each.

The proposal has an estimated capital cost of approximately \$900,000 and would employ 20 people during construction.

Under the *Environmental Planning and Assessment Act 1979* (EP&A Act) the proposal is classified as State significant, integrated and designated development and the Minister for Infrastructure and Planning is the consent authority.

The Applicant (Great Lakes Council) lodged a Development Application (DA) and Environmental Impact Statement (EIS) for the proposal with the Department of Infrastructure, Planning and Natural Resources (DIPNR) on 9 July 2003. DIPNR subsequently notified and exhibited the DA and EIS in accordance with the EP&A Act and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

Four public submissions were received in response to the exhibition, including three submissions from local property owners and one from a local beach restoration society. These formal submissions and responses direct to Great Lakes Council generally supported the proposal, recognising its value for beach and property protection. The main concerns were about the impacts of noise and traffic that the project would generate.

The Department of Infrastructure, Planning and Natural Resources (Natural Resources Branch), Department of Environment and Conservation, NSW Fisheries, and Department of Lands (Crown Lands NSW Mid North Coast) have provided comments on the project and are not opposed to it going ahead, subject to appropriate conditions of consent being imposed. The draft instrument of consent incorporates General Terms of Approval given by the relevant authorities.

DIPNR has assessed the project, including consideration of submissions received and advice from authorities and recommends that the Minister approve the Development Application, subject to conditions as set out in the draft instrument of consent.

1. INTRODUCTION

Great Lakes Council proposes to prepare damage to Jimmys Beach at Port Stephens, caused by the ongoing erosion of sand from the beach foreshore. The project will provide protection from sand erosion on the western part of Jimmys Beach and also to residential properties in the area.

Under the *Environmental Planning and Assessment Act 1979* (EP&A Act) the proposal is classified as State significant, integrated and designated development and the Minister for Infrastructure and Planning is the consent authority.

This report has been prepared to provide an assessment of Development Application 312-7-2003-i, made by Great Lakes Council to seek approval for the project. The Minister for Infrastructure and Planning is to determine the development application and this report provides an evaluation for the Minister's consideration in making the determination.

The Department has assessed the project, including careful consideration of the submissions received in response to the public exhibition of the proposed development, and taking into account advice received from government authorities. The Department recommends that the Minister approve the development application, subject to conditions as set out in the draft instrument of consent.

2. PROPOSED DEVELOPMENT

2.1 Site and Surrounding Land

The attached Figures 1 and 2 have been reproduced from Attachment C to the EIS for the project, prepared by the Manly Hydraulics Laboratory, NSW Department of Public Works and Services. Figure 1 shows the project site and the surrounding area. It also illustrates the conceptual sediment movement model prepared by the Manly Hydraulics Laboratory and used in developing the Jimmys Beach sand emplacement project. Figure 2 illustrates the Jimmys Beach Preferred Management Strategy.

The proposed sand extraction site is a near-shore sandbank, (the Yacaaba Shoal) of approximately 7 hectares (ha). The sandbank is attached to the Yacaaba Isthmus and is bounded by the waters of Port Stephens to the west and south and the established beach dunal system to the east. Yacaaba Head, which is part of Myall Lakes National Park, is located to the south of the Yacaaba Isthmus. A golf course is located approximately 2 kilometres (km) to the north of the extraction site.

The extraction site is located approximately 1 kilometre (km) to the south east of Hawks Nest and 150 metres from the nearest dwellings in the Jimmys Beach Caravan Park.

The EIS provides the following information on land ownership:

- Land ownership is a mix of Council owned land, land owned by the Crown but under the care and control of Great Lakes Council, and land owned and managed by the Crown. The extraction site is within Crown Land Reserves, No. 83292 and No. 77312, under Great Lakes Council's care and control as Council Reserves 46 and 31 respectively and in part of Crown Land Reserve No. 56146 within Port Stephens local government area.

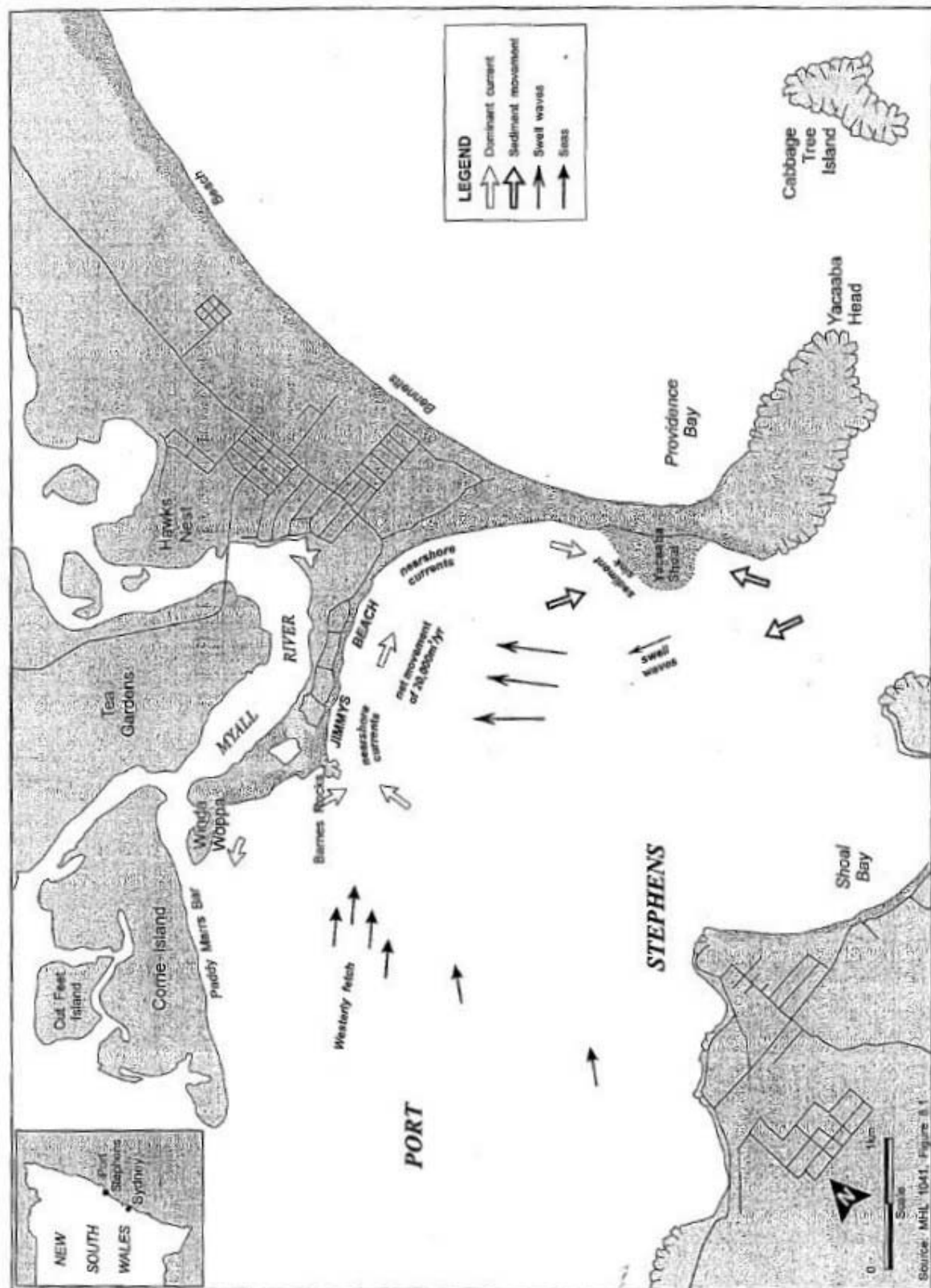


Figure 1: General Locality (DPWS Manly Hydraulics Laboratory, 2001)

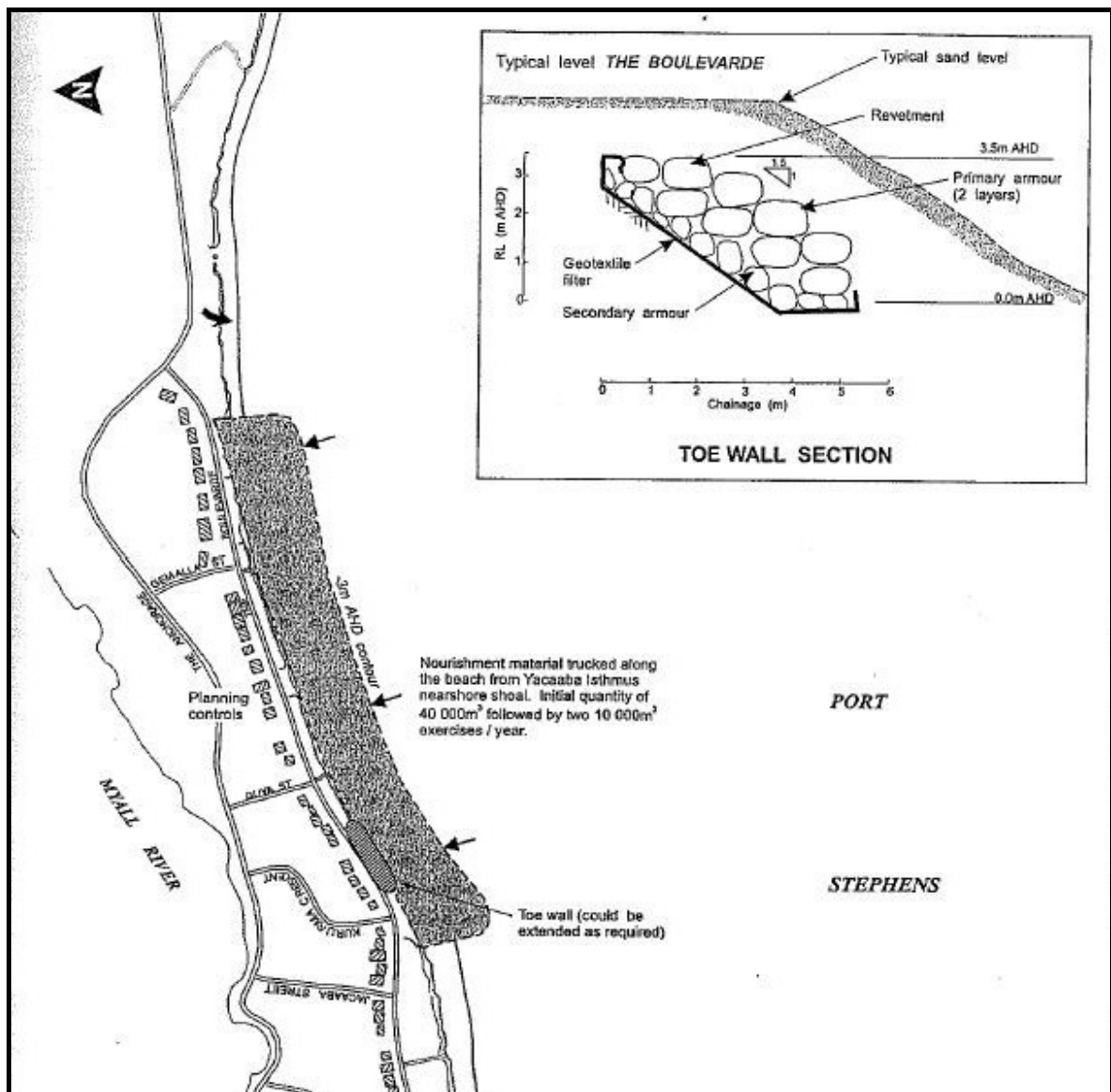


Figure 2: Jimmys Beach Preferred Management Strategy (DPWS Manly Hydraulics Laboratory, 2001)

- The haulage route along Jimmys Beach passes from Crown Reserve No. 77312 into Crown Reserve No. 77316, owned by the Department of Infrastructure, Planning and Natural Resources (DIPNR), then west into Crown Reserve No. 86652, which is under the care and control of Great Lakes Council as Council Reserve 79. Also it is anticipated that some twenty percent of the truck movements will need to be along The Boulevarde, to deposit sand at the top the emplacement, because of the physical difficulty in reaching this area directly from the beach.
- The area where the sand is proposed to be placed, (the Jimmys Beach “placement” area) is approximately 1.5 km from the Yacaaba sand extraction site at its closest point. The placement area is Council owned Reserve 5102.

The movement of trucks, plant and equipment from The Boulevarde and The Anchorage road system to the extraction site would be via a track, upgraded for the purpose, from the car park at the eastern end of Jimmys Beach.

The operation would involve removal of sand, haulage and placement where Great Lakes Local Environmental Plan (LEP) 1996 applies, on land zoned 6(a) – Open Space and Recreation. Sand extraction is not included as an allowable activity in this zone.

Great Lakes Council has advised that extraction of sand from land below mean low water level would be within land covered by Port Stephen's LEP 2000, being land zoned 7(w) – Environment Protection (W) (Waterways), where sand extraction is permitted with development consent.

The Boulevarde and The Anchorage road system, which would be used for access for some of the sand emplacement, is within the 2(a) – Low Density Residential zone under Great Lakes Local Environmental Plan (LEP) 1996.

2.2 Project Activities

The Applicant is proposing to extract sand from the area of sand accretion shown on the attached Figure 1 as the “sediment sink” (on Yacaaba Shoal), transport the sand, and place it in the western area of Jimmys Beach which is presently subject to erosion (the “nourishment area”).

The proposal as described in the EIS, dated 11 February, 2003, involves:

- Construction of a fenced temporary works compound in the existing car parking area off Tuloa Avenue, with upgrading of the existing access track
- Provision of a secondary access point to Jimmys Beach at the existing access point, including road widening, to allow scrapers and also light transport vehicles and other traffic to enter the beach as required
- Safety measures and access management, including the erection of safety signs and fencing
- Extraction of sand from the Yacaaba Shoal on the western side of Yacaaba Isthmus, mainly by scrapers, but possibly also involving a bulldozer or excavator(s) and all-wheel trucks, to extract a total volume of 90,000 cubic metres (m³) over a period of three years, with an initial extraction of 40,000 m³, followed by 10,000 m³ of sand extraction at approximately six monthly intervals

- The scraper option (the preferred option) is to move the initial 40,000 m³ of material in 27 days, assuming 8 hour working days, or in 18 working days working 12 hours per day, and involving 1,740 vehicle movements of 23 m³ loads for either option
- The alternative, less preferred option, involving the use of excavators and trucks, would require 2850 vehicle movements at 14 m³ per load
- Most of the sand transport will be westwards along Jimmys Beach, but up to 20 percent of the movements will involve leaving the beach at Tuloa Avenue and travelling along The Boulevarde to deposit sand along the top of the dune system, with return to the beach via Gemalla, Guya or Jacobba Street
- The placed sand will be shaped and planted with Spinifex grass runners and other suitable species, according to a rehabilitation plan that will be prepared
- The sand extraction area will be stabilised using Spinifex grass where feasible
- Monitoring will be undertaken to review the effectiveness of works

2.3 Waste Products

The Applicant stated that the actual extraction process as described in the EIS will not produce any waste products. Toilet and other waste will be collected and removed from the site. There will not be any wastes on site that could result in any part of the site being contaminated within the meaning of Part 5 of the *Environmentally Hazardous Chemicals Act 1985*.

2.4 Hours of Operation

The EIS indicates the intention is to:

- Carry out the operations between 6.00 am and 10.00 pm, Monday to Friday, subject to possible restrictions 2 hours either side of higher tides because of limited beach width
- Restrict the dozer operation for sand placement on the lower beach to between 7.00 am and 6.00 pm, Monday to Friday
- Restrict any use of The Boulevarde and The Anchorage road system to access the dune crest from the road to between 8.00 am and 4.00 pm
- Avoid school holidays, the commercial fishing season (mid-March to mid-June) and the pied oystercatcher breeding season (August to October)

2.5 Workforce

Employment would involve 20 jobs.

3. STATUTORY CONTEXT

The proposal requires approvals under State legislation as considered below.

3.1 Environmental Planning and Assessment Act 1979

3.1.1 State Significant Development

The proposal is classified as State Significant development under s. 76A(7)(a)(i) of the EP&A Act, since the development involves an extractive industry on land to which State

Environmental Planning Policy (SEPP) No. 71 – Coastal Protection applies. Consequently, the Minister is the consent authority for the DA.

3.1.2 Integrated Development

The proposal is classified as integrated development under s.91 of the EP&A Act because it requires additional approvals from the following agencies:

- Environment Protection Authority, under the *Protection of the Environment Operations Act 1997*;
- Department of Infrastructure, Planning and Natural Resources, under the *Water Act 1912*; and
- NSW Fisheries, under the *Fisheries Management Act 1994*.

The proposal involves Crown Land administered by Great Lakes Council (GLC) and Port Stephens Shire Council (PSSC) with GLC undertaking the works, by arrangement. GLC has the role of Reserve Trust Manager. Consequently no specific approvals are required under the Crown Lands Act, 1989.

3.1.3 Designated Development

The proposal meets the criteria for extractive industries in Schedule 3 of the *Environmental Planning & Assessment Regulation 2000* (EP&A Regulation 2000) because it would:

- Obtain or process for sale or reuse more than 30,000 cubic metres of extractive material per year,
- Disturb a total area of more than 2 hectares of land, and
- Is located within 40 metres of a natural waterbody.

Therefore the project is classified as designated development under s.77A of the EP&A Act.

3.1.4 Permissibility

For the land above mean low water level Zone 6(a) of Great Lakes LEP 1996 applies. Sand extraction is not included as an allowable activity in this zone.

Land below mean low water level is within the area covered by Port Stephen's LEP 2000, being land zoned 7(w) – Environment Protection (W) (Waterways), where sand extraction is development that requires development consent.

However, notwithstanding the restrictions established by the Great Lakes LEP 2000, the development may be carried out with development consent in accordance with Section 76A(8)(c) of the EP&A Act. (This Section provides that where, but for this provision, part of State significant development would be prohibited, the development may be carried out with development consent).

3.1.5 Environmental Planning Instruments

The following environmental planning instruments are relevant to the proposal under s.32 of the EP&A Act:

- *State Environmental Planning Policy No. 11 – Traffic Generating Developments*
- *State Environmental Planning Policy No. 71 – Coastal Protection*

The Department is generally satisfied that the proposal satisfies the relevant requirements of the applicable environmental planning instruments.

Land within Great Lakes Local government area lies within the area covered by the Hunter Regional Environmental Plan. The Department is satisfied that there are no outstanding issues in relation to this Plan.

4. PUBLIC EXHIBITION AND CONSULTATION

4.1 Public Consultation Process

The Applicant lodged a DA and EIS for this proposal with the Department on 9 July 2003.

The public consultation process after the DA and EIS were lodged included:

- Notifying all property owners who were identified as potentially affected by the proposal in writing, with a request that the owners also notify the tenants of any properties they lease
- Notifying relevant State Government and local government agencies, including: the Environment Protection Authority and National Parks and Wildlife Service (now within the Department of Environment and Conservation); Department of Infrastructure, Planning and Natural Resources, Natural Resources Branch; Crown Lands Office, Taree; Coastal Council of NSW; NSW Fisheries; Port Stephens Shire Council and Great Lakes Council (the Applicant)
- Advertising the exhibition of the DA and EIS in the Port Stephen's Examiner on two separate occasions to publicise the project and invite submissions
- Exhibiting the DA and EIS at three appropriate locations between 1 August 2003 and 1 September 2003

4.2 Submissions in Response to the Public Exhibition

The Department received four submissions in response to the public exhibition of the project:

- Three submissions were from members of the public/ property owners in the local area; and
- One submission was from an interest group (Jimmys Beach Restoration Society).

The submissions supported the proposal, subject to some concerns about its impacts, including noise and traffic impacts. In summary, the issues were:

Table 1: Summary of issues raised in public submissions

Issues	Number of Times Issue Raised
General support for the project	4
Value in protecting property and environment	2
Noise and noise management	2
Traffic and traffic management	2
Concerns about long term project success	1

The Jimmys Beach Restoration Society expressed a preference for the use of a pipeline for sand transport to Jimmys Beach, or possible other alternatives as a longer term solution for beach sand replenishment. However this issue is outside the scope of the existing proposal and is a matter for GLC to consider in formulating future proposals.

Also one submission raised concerns about the long term stability of the sand emplacement, because of ongoing beach erosion. This matter has been recognised as relevant to the present project, with some ongoing beach erosion being anticipated and the need for the erosion to be addressed by further sand replenishment. It is proposed that any approval given will be subject to ongoing monitoring of the project and its effects to demonstrate it is satisfactory.

4.3 Submissions to Great Lakes Council

Great Lakes Council wrote to potentially affected landowners/ occupiers (fifty-one letters). In response Council received fourteen written replies, three phone calls and two counter visits. The GLC forwarded the letters and conversation summaries to the Department and the DEC.

The submissions generally supported the proposal, while recognising there would be some impacts, including from noise and traffic generation. However there was one strong objection from a non-resident property owner concerning noise levels, hours of operation and the consultation procedures and timing. Also one submission expressed concerns about the impact of the project on local business.

Council noted that residents who had actually been present when severe storm events impacted the beach could best appreciate the proposed sand nourishment work. Also Council advised that, pending the outcome of the DA, the next phase will involve a detailed design of the sand extraction, transport and emplacement system by Council. Residents will be kept informed on the progress of the project and a complaints mechanism will be put into place.

4.4 Government Agency Consultations

The Environment Protection Authority and the National Parks and Wildlife Service (now within the Department of Environment and Conservation); Department of Infrastructure, Planning and Natural Resources, Natural Resources Branch; NSW Fisheries; Crown Lands Office, Taree; Coastal Council of NSW; and Port Stephens Shire Council were consulted. The responses are summarised below.

4.4.1 Department of Environment and Conservation

Response Initiated by EPA

DEC determined that it is able to issue General Terms of Approval (GTA) for the proposed dredging activities under the Protection of the Environment Operations Act 1997, subject to a number of conditions.

If the development is modified either by the Applicant prior to the granting of consent, or as a result of the conditions proposed to be attached to the consent, it will be necessary to consult with DEC about the changes before the consent is issued. This will enable DEC to determine whether its general terms need to be modified in light of the changes.

Potential Noise Impacts

DEC notes that the proponent states that the proposed beach nourishment program has “the potential to cause significant short term impacts on local amenity by way of noise”. The EIS provided by the proponent did not fully demonstrate the extent of potential noise impacts on the amenity of local residents, in particular those residents adjacent to the proposed sand placement area. In order to progress the development application DEC required the proponent to consult directly with those residents potentially affected by noise and to consider all feasible and reasonable noise mitigation measures that could be applied to minimise impacts on the local community.

The outcome of the consultation between Council and the local community revealed that the majority of the residents are aware of the need to protect property and infrastructure from erosion and therefore did not object to the loss of amenity due to noise during the beach nourishment operation.

To assist in the management of potential noise impacts, DEC will require the proponent to prepare and implement a “Noise Management Protocol”. The Protocol is to include management and mitigation measures to minimise noise from the operation. DEC suggested that DIPNR consider the inclusion of a condition preventing the commencement of dredging works until the “Noise Management Protocol” has been developed.

Statutory Requirements

Schedule 1 of the Protection of the Environment Operations Act 1997 specifies that dredging works that obtain more than 30,000 cubic metres per year of materials from the bed, banks or foreshores of any waters will require an Environment Protection Licence before any works take place.

Response Initiated by NPWS

The DEC wrote to DIPNR on 5 September 2003 listing *inter alia* the following matters as requiring further consideration:

- The potential impact of the proposed sand nourishment program on the seagrass beds;
- The “8 part test” should include the dugong and green turtle; and
- The report should contain a revised “8 part test” to meet the applicable statutory requirements

4.4.2 DIPNR (Natural Resources Branch)

- The Department of Infrastructure, Planning and Natural Resources (DIPNR) provided General Terms of Approval (GTA's) for the Water Act, 1912, to be included in any development consent subsequently granted. The consent authority is to ensure that the Applicant has obtained all the necessary approvals from DIPNR prior to the commencement of works.
- The Jimmys Beach Nourishment Project has been developed according to the principles in the NSW Government Coastline Management Manual. The Jimmys Beach Technical Sub - Committee has overseen its development and the State Government's Coastal Management Program has provided 50% of the project funds for the initial nourishment.

- Future applications for grant assistance will need to be assessed in light of available funds and statewide priorities.
- As part of the environmental management procedures for the project, an “Operations Management Plan” should be developed for the works which includes a monitoring program for the borrow and placement operations.

4.4.3 NSW Fisheries

The Department is concerned that the sand being deposited on the beach will wash down the beach during erosional episodes and smother the offshore seagrass. The consultant engineers suggest that this will not occur due to the grade of sand that will be used. Consequently the Department will not object to the works being carried subject to conditions, including:

- The seagrass beds being mapped, with measures of species composition, distribution and density, based on transects from the beach to the outer extent of the seagrass beds. The surveys are to be repeated at 3 monthly intervals to assess the movement of the sand from the beach depositional site and to determine the impacts on the seagrass beds.
- Part of the monitoring should also include wave behaviour and beach profiles to determine if there are particular wave climates that create problems of sand movement.
- The work is to be carried out by qualified consultants agreed to by Great Lakes Council and NSW Fisheries. The monitoring data will be reviewed in 12 months to determine if the engineer’s postulations are correct and if monitoring should continue.
- Timing of the works must be carried out after consultation with commercial fishers, so as not to interfere with fishing operations.

4.4.4 Department of Lands, Crown Lands Office

The Crown Lands Office requires the Applicant to ensure that:

- (a) Procedures and measures regarding public safety, signage, fencing and temporary restriction of access, as outlined in the development application and associated supporting documentation, are adhered to; and,
- (b) The Crown is indemnified and kept indemnified against all action, suits, claims and demands of whatsoever nature and costs, charges and expenses with respect to any accident or injury to any person which may arise out of use of the land for the activity.

The borrow area is deemed to be part of Reserve 83292 for public recreation for which Great Lakes Council is the Reserve Trust Manager. Consequently no specific approvals in terms of the Crown Lands Act, 1989 are required. For the placement area it is considered that Council has title to the affected lands by virtue of past erosion events under the survey Doctrine of accretion and erosion. As Council is to carry out the works as public works there is no Crown royalty for the material extracted.

5. CONSIDERATION OF KEY ISSUES

The Department has assessed the proposal, EIS and submissions on the proposal and believes the key issues are:

- Noise impacts and noise management;

- Construction traffic management;
- Potential impacts of sand movement; and
- Aquatic, flora and fauna management.

The Department considers that these issues, as examined below, and other matters relevant to the assessment of the development application can be adequately addressed by appropriate conditions, including sound management planning and project monitoring.

The justification for the project appears to be well accepted by authorities and local residents, recognising the need to protect the beach and property in the vicinity.

There are also other matters that the Applicant needs to address that are outside the scope of the present project, particularly the need to give further consideration to longer term options for beach protection from sand erosion.

5.1 Noise and Noise Management

5.1.1 Assessment of Noise Impact in the EIS

Background noise monitoring was undertaken at No. 73, The Boulevarde, using a data logger to document the existing noise environment in the Jimmys Beach area (Attachment G to the EIS for the project). The monitoring was carried between 14 October 2002 and 25 October 2002.

The L_{Aeq} and Rating Background Level (RBL) were calculated in accordance with the EPA Industrial noise Policy. The L_{A90} RBL for the various periods during the day were calculated to be as shown in Table 2 below.

Table 2: Rating Background Level (RBL) for No. 73, The Boulevarde

Period	Background Noise Level (RBL) (dB(A))
Daytime (0600-1800hrs)	37.2
Evening (1800-2200 hrs)	40.2
Night (2200-0600 hrs)	36.6

Modelling of noise impacts using the PEN3D2000 Environmental Noise Model was undertaken using the worst case scenario of plant and equipment. The results predicted that noise at the closest dwellings would exceed both the EPA Industrial Noise Policy Criteria and the EPA Environment Noise Control Guideline Criteria for Construction Sites, Intrusiveness.

Noise impacts were also considered for the Jimmys Beach Caravan Park which is located approximately half way along the haul route for the sand. $L_{Aeq,1hr}$ was calculated to be 48.3 dB(A) for traffic noise. The ambient L_{Aeq} was estimated at 54.3 dB(A) daytime and 52.2dB(A) evening.

Assuming the proposal may be characterised as “land use development with potential to create additional traffic on local roads”, under the EPA’s (1999) “Environmental Criteria for Road Traffic Noise”, an $L_{Aeq (1hr)}$ of 55dB(A) for daylight hours applies. The estimated daytime traffic noise levels would be within 2dB(A) of the criterion. Night time works are not proposed.

To minimise the impacts on the community, the Applicant provided an undertaking in the EIS to conduct works outside of school holiday periods.

Also in the EIS the proposed trucking of sand along The Boulevarde (to a maximum of 20 percent of the total loading) was predicted to exceed the EPA Environmental Criteria for Road Traffic noise. It was noted that while these criteria are not intended for short duration activities they are valuable as an indicator of acceptable impacts on the local amenity.

The conclusion in the EIS was that noise from the proposed works would exceed the EPA Industrial Noise Policy criteria for suburban areas and the EPA Environmental noise Control Limits for Construction Sites within the local residential area. The exceedences would be mainly for up to a week as the sand filling progresses along the beach.

The level of exceedence may reach nuisance levels at dwellings along The Boulevarde, with the “worst case” $L_{A10(15min)}$ levels of 75 dB(A) predicted when the bulldozer and scrapers are working on the dune immediately opposite the dwellings.

5.1.2 Issues raised

Submissions raised concerns about noise associated with the project, including from the machinery to be used for the sand extraction and placement, and the trucking of the sand. These concerns included the use of The Boulevarde and other streets to reach the higher sand placement areas.

5.1.3 Review of issues

As indicated in section 4.4.1 above, DEC required the proponent to consult directly with those residents potentially affected by noise and to consider all feasible and reasonable noise mitigation measures that could be applied to minimise impacts on the local community.

The outcome of the consultation between Council and the local community revealed that the majority of the residents are aware of the need to protect property and infrastructure from erosion and therefore did not object to the loss of amenity due to noise during the beach nourishment operation. However residents requested that the hours of the operations be limited and no work be undertaken during school holidays.

To assist in the management of potential noise impacts, DEC will require the proponent to prepare and implement a Noise Management Protocol. The Protocol is to include management and mitigation measures to minimise noise from the operation. DEC suggested that DIPNR consider the inclusion of a condition preventing the commencement of dredging works until the “Noise Management Protocol” has been developed.

DEC issued General Terms of Approval, including a requirement for the proponent to prepare and implement a Noise Management Protocol.

Also the General Terms of Approval issued by DEC will restrict noise impacts by limiting the hours of operation for the project.

The Department is satisfied that noise from collection, transport and placement of sand would be of limited duration and that the Applicant should be able to manage noise impacts appropriately. Therefore, the Department considers that the short term impacts are outweighed by the longer benefits of the development and is of the opinion that the

requirements set out in the draft conditions will effectively minimise the impacts of the proposal. Consequently, the Department considers the impacts from noise would not be such as to prevent the project from going ahead.

5.2 Construction Traffic Management

5.2.1 Assessment of traffic in the EIS

The project involves transporting extracted sand from the near-shore sandbank, (the Yacaaba Shoal) over a distance of approximately 1.5 km to Jimmys Beach for placement.

The movement of trucks, plant and equipment from The Boulevarde and The Anchorage road system to the extraction site would be via a track, upgraded for the purpose, from the car park at the eastern end of Jimmys Beach.

Extraction of sand is to be mainly by scrapers, but possibly also involving a bulldozer or excavator(s) and all-wheel trucks. The scraper option (the preferred option) is to move the initial 40,000 m³ of material in 27 days, assuming 8 hour working days, or in 18 working days working 12 hours per day, and involving 1,740 vehicle movements of 23 m³ loads for either option. The alternative, less preferred option, involving the use of excavators and trucks, would require 2850 vehicle movements at 14 m³ per load.

Most of the sand transport will be westwards along Jimmys Beach. However, up to 20 percent of the movements will involve leaving the beach at Tuloa Avenue and travelling along The Boulevarde to deposit sand along the top of the dune system, with return to the beach via Gemalla, Guya or Jacobba Street

Traffic management measures proposed in the EIS include:

- Construction of a fenced temporary works compound in the existing car parking area off Tuloa Avenue, with upgrading of the existing access track.
- Safety measures and access management, including the erection of safety signs and fencing

5.2.2 Issues raised

The impact of traffic was raised in two submissions, including concerns about danger from vehicles and noise. Avoiding operations during school holidays was seen as way of mitigating traffic impacts.

The Department of Land was concerned to ensure that adequate safety measures and provisions for indemnities for any impacts were in place.

5.2.3 Review of issues

Traffic noise was considered as part of the noise assessment in section 5.1 above.

In regard to other impacts of traffic, it is noted that the operation is of relatively short duration and local residents are prepared to accept some level of impact to enable the work to ahead.

On this basis it is considered that traffic can be adequately managed, subject to appropriate conditions being imposed, including measures for ensuring there is no danger to persons on the beach or in the general area or to other vehicles using the local roads.

5.3 Cumulative impact of sand movement

5.3.1 Assessment of sand movement in the EIS

The Department of Public Works and Services' Manly Hydraulics Laboratory conducted a study to determine an efficient and cost effective long-term management strategy for Jimmys Beach. Previous replenishments came from dredging at Paddy Mars bar and the Corrie Island western channel. Both sites provided sand of smaller grain size and this had not proved effective.

Options for protecting Jimmys Beach from sand erosion were considered in Attachment B of the EIS, entitled "Jimmys Beach Coastline Management Review, Draft Management Strategy", dated August 2001. The options included high capital cost proposals, involving the construction of a terminal revetment (sea wall); groyne field and nourishment; or submerged offshore breakwaters and nourishment. The "do nothing" option had the disadvantage of potential loss of services and property and was considered unacceptable to the community.

The advantage identified for the preferred option of beach nourishment included being favoured by the local community, cost effective by using relatively small nourishment quantities, and good sand sources being available.

The EIS Executive Summary at 5.2 states that particular attention was given to the likely impact on the extensive seagrass beds off Jimmys Beach. Studies undertaken for the EIS concluded that the proposed works would not increase the natural rate of beach erosion and transport of sand across the existing seagrass beds to the east. The proposed sand source was found to have a similar grain size to the existing natural beach profile. Hence, the behaviour of suspended sand migrating across the seagrasses and its impact would be similar to that which would occur naturally in the absence of the beach nourishment program. Management measures have been proposed to ensure site activities do not encroach on or adversely affect existing seagrass beds.

The EIS at 5.6 indicates that:

- The process of erosion from western Jimmys Beach is naturally occurring and would likely continue until the beach and Winda Woppa Peninsula was eroded through
- The objective of the proposed scheme is to replace lost sand from the beach with sand from the borrow area at a rate that equals the natural rate of erosion
- The increased rate of erosion experienced in the 1990s is linked to the smaller grain size used in the 1990's renourishment programs, as this sand grain size was smaller than the grain size of the naturally occurring sand on the beach
- The renourishment scheme now proposed will utilise a larger grain size approximating the naturally occurring sand on the renourishment site
- The historical movement of sand eastward and the increase over the past decade has slightly changed the distribution of the seagrass beds but not adversely affected the overall area colonised or their apparent condition, which was noted as healthy at the time of inspection

5.3.2 Issues raised

Issues included whether sand extraction would lead to an adverse shift in wave impacts with erosion migrating to another site, concerns about sand being deposited on and adversely affecting the seagrass beds, and whether the trial would continue for an

extended period. Consideration of potential alternatives, such as long term transfer using pipes, was also suggested.

The Taree office of DIPNR has provided the following comments on the impact of the proposed Jimmys Beach sand renourishment program on the local seagrass beds:

The process of erosion at Jimmys Beach is relatively simple.

- Energy is required to move sand particles. This energy is obtained from the movement of water over the particles. The energy moving the water comes from two sources:
 - 1). A west to east nearshore littoral drift driven by the prevailing westerly winds across Nelsons Bay.
 - 2). Waves and tides.
- The wave energy is focussed on the intertidal and adjacent area and moves the particles down into the water. The littoral drift then moves them along the beach toward the Yacaaba Headland
- Unless embayments are created, or groynes or retaining walls are built, erosion is expected to continue for the foreseeable future. Nothing in the proposal will change the amount of wave energy or the littoral drift
- The amount of sand mobilised that might affect the seagrass beds can be expected to remain relatively constant because it is dependent on the natural seasonal processes of wind and tides
- The increase in the volume of sand on the beach does not significantly increase the total area of sand exposed to the above processes
- Storm wave attack, by reason of the increase in energy in the water, will temporarily increase the volume of suspended sand in the water and so facilitate more rapid longitudinal transport. Again the amount of sand so mobilised will be independent of any additional volume of beach sand.
- Increasing the sand grain size can mitigate the rate of beach erosion and sand movement over the seagrasses
- Assessment of aerial photography shows no seagrasses within 500 metres of the eastern extremity of the proposed nourishment area
- The grain size of the proposed borrow site has been investigated to assist in determining the best areas to provide the larger grain size
- The proposed borrow areas provide sand with a larger particles and less fines
- The greatest impact on the seagrasses is the storm turbulence produced by the wave energy focussed by the shoals in the bay
- Any changes to the shoals will produce changes in the area affected by the wave energy.

The proposed nourishment will maintain or improve the environment of the seagrasses east of the nourishment site, as it will:

- Increase the grain size on the proposed beach nourishment site
- Reduce the rate of erosion of the beach and thus the amount of mobile sand
- At worst not increase the rate of sand movement across the seagrass beds
- Reduce the amount of fine sand in suspension and so maintain or improve the light

transmissibility of the water and thus assist photosynthesis

5.3.3 Review of issues

The concern of NSW Fisheries, as summarised in section 4.4.3 above, about possible impacts of sand deposition on the local seagrass beds has been noted. Subject to these reservations, NSW Fisheries has issued GTA's for the proposed development.

The available information indicates that the proposed development will not result in any additional movement of sand onto the local seagrass beds, beyond the movement that is naturally occurring at present. In fact, with careful management of the operation, and the use of suitable grain size sand, as proposed, sand deposition on the seagrass beds could actually be reduced. Also, the project is the preferred option identified in studies undertaken by the Manly Hydraulics Laboratory, NSW Department of Public Works and Services and is supported by DIPNR Taree Office.

Therefore it is concluded that there are no adverse impacts of sand movement that would prevent the development from going ahead, subject to appropriate conditions.

5.4 Aquatic, Flora and Fauna Management

5.4.1 Aquatic, Flora and Fauna Assessment in EIS

Peter Parker Environmental Consultants Pty Ltd conducted an assessment of the development area, included as Attachment E of the EIS for the project.

Seagrass beds were identified offshore from Jimmys Beach to Yacaaba Isthmus. Two species of seagrass, *Zostera capricornia* and *Halophila ovalis* occur in these beds. The EIS proposed a buffer of 10 metres between the works and the seagrass beds.

The osprey and pied oystercatcher, listed on the *Threatened Species Conservation Act 1995* have been identified in the general area. No osprey roosting or nesting sites were found in the area. Suitable pied oystercatcher nesting habitat exists.

5.4.2 Issues raised

Issues were raised by NSW Fisheries and DEC. These relate to potential impacts on seagrass beds; on the dugong and green turtle; the pied oystercatcher and little tern; and the scope of the assessments carried out under Section 5A of the EP&A Act.

Response by Peter Parker

DEC wrote to DIPNR on 5 September 2003 listing, amongst other matters, the following issues as requiring further consideration:

- 1). The potential impact of the proposed sand nourishment program on the seagrass beds;
- 2). The "8 part test" report should include the dugong and green turtle; and
- 3). The report should contain a revised "8 part test" prepared in accordance with the applicable legislation

A supplementary report prepared by Peter Parker dated January 2004 (Reference 2) responds to these issues. For issue 1, Peter Parker advised that the information previously relied upon with respect to sand drift was supplied by Jelliffe Environmental Pty Ltd and was beyond the expertise of his firm. (Concerns about this issue have been considered in 5.3 above). Peter Parker addressed issues 2 and 3 as noted below.

A review of threatened animal species likely to use the habitats recorded at the site was undertaken. Species were excluded from the assessment if:

- Key habitat components for those species are not present within or near the site;
- No records for those species have been recorded within 5 km of the study site; and
- Available information on the species precludes it from being considered as likely to use habitats at the site because of nesting and/ or migratory behaviour.

Key points of Peter Parker's consideration under Section 5A of the EP&A Act in respect of flora and fauna are as follow.

Flora: No vulnerable plant species were recorded at or near the site. Thus, the life cycle of threatened plants is not likely to be disrupted such that a viable local population of the species would be placed at risk of extinction.

Fauna: A number of vulnerable shorebirds may occur seasonally in the vicinity of the site. These were listed in Table 4 of the report by Peter Parker included as Attachment E in volume 2 of the project EIS. With respect to Section 5A the pied oyster catcher and osprey are known from the site, the other shorebird species being possible vagrants.

- The pied oystercatcher is not migratory, but seasonal flocking occurs between May and August. During this period it congregates at traditional roosting sites then disperses to breed. The nest is usually a scrape in the sand or among shingle on the beach just above the high tide mark. The breeding period is between May and January depending on latitude; laying starts in May in northern Australia, and October in Tasmania. An inspection of the site for potential breeding activity will need to be undertaken prior to any works commencing and works should not be undertaken during the breeding period.
- The osprey forages on beach-wash flotsam along Jimmys Beach. The proposal will result in this food source becoming temporarily unavailable during scraping. However, this short-term loss of foraging area is considered insignificant in context of the home range of this species in the wider Port Stephens/ Myall Lakes area.

DEC listed the green turtle and dugong as warranting assessment and in response Peter Parker advised that:

- The green turtle ranges along the tropical coasts of Australia and the Great Barrier Reef and is pan-tropical throughout the world. Its range extends into subtropical and temperate waters and it is known to breed as far south as northern NSW. A viable breeding population is unlikely to occur in the Port Stephens/ Myall Lakes area due to the high latitude and the specific band of temperature required at breeding sites.
- The dugong inhabits shallow warm tropical and sub-tropical marine waters of the Indian and western Pacific Oceans. In Australia, its normal range is from Shark Bay, Western Australia, to Moreton Bay, Queensland, although vagrants are known as far south as Tathra. Males are sexually active in northern Queensland from May to November but the dugong is unlikely to breed in the Port Stephens / Hawks Nest area due to paucity of suitable habitat and cooler water. Migration into NSW waters has been attributed to seagrass loss in Harvey Bay. However, many vagrants die in an emaciated condition apparently due to starvation. Thus no viable dugong population is likely to occur in the vicinity of the proposal.

As a result of this review Parker noted that:

- It unlikely that the proposal would disrupt the life cycle of any threatened species such that a viable local population of the species is likely to be placed at risk of extinction.
- Also, no endangered populations, listed under Part 2 of Schedule 1 of the *Threatened Species Conservation Act 1995*, occur within the vicinity of the site. Thus, the proposed activity will not disrupt the life cycle of any species constituting an endangered population and will not significantly compromise the viability of any endangered population.
- Threatened species likely or known to occur are restricted to shorebirds listed in Table 4 of Attachment E in volume 2 of the project EIS. None of these are at the extreme of their known ranges.

Based on the available information Parker concluded that:

- No viable populations of the species detailed under s.5A(a) are likely to be placed at risk of extinction
- The viability of endangered populations will not be significantly compromised
- No regionally significant area of known habitat will be removed
- No known habitat for threatened species will become isolated
- No Critical Habitat will be affected
- The proposed development is not a key threatening process under Schedule 3 of the TSC Act, and threatening processes listed under the TSC Act are not likely to increase
- Threatened species recorded at the site are represented in conservation reserves in the region
- The known distributional range of threatened species is unlikely to be affected as a result of the proposed development.

Peter Parker also undertook a Fisheries assessment under the Fisheries Management Act which lists a number species as threatened. These are included either under Part 1 of Schedule 4 as endangered or under Part I of Schedule 5 as vulnerable.

Parker concluded that it is unlikely that the proposal would affect any of the listed species as they are unlikely to occur within the estuary immediately adjacent to Jimmys Beach.

5.4.3 Review of issues

As indicated in section 5.4.2 above, Peter Parker, on behalf of the Applicant, undertook further assessment of the issues raised by NSW Fisheries and DEC.

Also the Department carried an internal review of information provided in the EIS. This review noted the following potential issues: potential for nesting habitat of the little tern; impact on other species such as ghost crabs, *Ocypode ceratophthalma* and *O. cordimana*; and defining the extent of the seagrass beds.

The Department has reviewed this information and considers it is unlikely that the impact on seagrasses would be significant, or on ghostcrabs, noting this was not raised as an issue in any other advice or submissions. If the project is approved a 10 metre buffer could be applied between the seagrasses and the development and this would minimise any sand movement onto the seagrass beds.

In identifying the boundary of the seagrass beds consideration needs to be given to both above ground seagrass biomass (shoots and leaves) and below ground biomass (roots).

Also, the Applicant has undertaken to avoid works during the breeding season of both bird species. The revised assessments prepared by Peter Parker under Section 5A of the EP&A Act included additional assessment for the dugong and green turtle, as requested by DEC. The assessments did not identify any reason to prevent the proposed development from going ahead.

NSW Fisheries provided General Terms of Approval with conditions, including:

- The seabeds are mapped in accordance with NSW Fisheries requirements;
- Surveys are repeated to assess the movement of sand from the beach depositional areas and the impact on the seagrasses; and
- Monitoring would also include wave behaviour and beach profiles

The Department is satisfied that the issues raised have been addressed adequately and that no impact on flora and fauna is likely to arise from the development that would prevent it from going ahead, subject to appropriate conditions being met.

6. SCOPE OF CONDITIONS OF CONSENT

The recommended conditions of consent at Attachment “A” have been prepared to incorporate the General Terms of Approval and other issues raised by Government agencies, Council and all other submitters, including land owners.

The recommended conditions of consent provide for appropriate management of adverse environmental impacts associated with the development, establish environmental criteria for defining acceptable levels of performance; require environmental monitoring, reporting and independent review.

The Department has consulted with, and gained the agreement of the Applicant to the recommended conditions of consent.

7. CONCLUSION

The Department considers that there are no environmental impacts from the proposed Jimmys Beach sand emplacement proposal which could not be effectively managed through the recommended consent conditions. The Proposal is consistent with State, regional and local planning objectives.

8. RECOMMENDATION

It is RECOMMENDED that the Minister approve the development application (DA 312-7-2003) for the proposed removal of sand from Yacaaba near-shore shoal and emplacement of this sand at Jimmys Beach, as submitted by Great Lakes Council, subject to the attached conditions of consent.

Endorsed

David Kitto
Manager
Mining and Extractive Industries

Sam Haddad
Deputy Director General
Office of Sustainable Development
Assessments and Approvals

APPENDICES

Appendix 1 - Evaluation under Section 79C of the EP&A Act 1979

Matters for consideration – general

In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

(a) the provisions of:

- (i) any environmental planning instrument, and**
- (ii) any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority, and**
- (iii) any development control plan, and**
- (iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), that apply to the land to which the development application relates,**

The Department's consideration of these matters is contained in Section 3 of this Report. The Department is satisfied that all relevant planning issues have been addressed and considered in the determination of the development application. The Department concludes that the proposal is consistent with the aims, objectives and provisions of all the applicable planning instruments, plans and policies.

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;

The likely environmental impacts of the proposal are considered and assessed in Sections 4 and 5 of this Report. The Department has considered the environmental, social and economic impacts of the proposal and concludes that the proposed development can be managed, subject to the imposition of the recommended conditions of consent. The recommended conditions of consent address performance criteria, environmental management plans, environmental monitoring and environmental auditing, which would apply to the development, if approved.

(c) the suitability of the site for the development;

The suitability of the site for the development is considered in Sections 3 and 5 of this Report. The proposal is consistent with land use objectives. The potential impacts of the proposal can be effectively managed. The location of the development is constrained by availability of a suitable sand resource, and the existing environment and land uses. The Department concludes, on the basis of this assessment, that the site is suitable for the proposal.

(d) any submissions made in accordance with this Act or the regulations;

The issues raised in submissions are identified in Section 4 and considered in Section 5 of this Report. These issues and advice received from authorities have been addressed in this assessment of the proposal and/or appropriate conditions of consent have been incorporated to manage these concerns and potential impacts.

(e) the public interest.

The public interest of the proposal is considered in Section 1 through to Section 6 of this Report. The proposal is considered to be consistent with State and regional planning objectives relating to environmental management and sustainable, economically feasible development. The Department therefore considers that the proposal is in the public interest and the relevant environmental, economic and social issues have been addressed in the assessment of the proposal.

Appendix 2 - References

Jimmys Beach Sand Extraction and Beach Nourishment Scheme, Environmental Impact Statement, Volumes 1 & 2, prepared by Jelliffe Environmental Pty Ltd, Environmental Engineering & Planning Consultants, Suite 6 "Albany House" 60-62 Albany Street, Coffs Harbour 2450, February 2003. ⁽¹⁾

A Supplementary Report With Respect to a Beach Nourishment Proposal at Jimmys Beach, Hawkes Nest. Prepared for Great Lakes Council, by Peter Parker Environmental Consultants Pty Ltd, Broken Head Road, Broken Head, NSW 2481, January 2004. ⁽²⁾