1 February 2019

The Director, Resource Assessments,
Department of Planning and Environment
GPO Box 39 Sydney NSW 2001

# OBJECTION: Bobs Farm Quarry - Sand Mine Project State Significant Development Application No SSD 6395

We have no objection to this submission being published in full, without any redaction.

Page references are to Volume 1 of the EIS unless otherwise indicated.

## Contents

## *About us*

Tomaree Ratepayers and Residents Association Incorporated (TRRA) has since 2008 actively represented the Tomaree community on issues such as planning and development, protecting the built and natural environment, economic development, tourism, culture and other grass roots issues.

## *Overview*

TRRA submits that this project is not acceptable on multiple grounds and should not be approved.

An 'industrial' extractive operation in such a highly visible location is in our view incompatible with the rural landscape character of the Bobs Farm area and the wider 'bush meets the sea' character of the Tomaree peninsula which gives it its exceptionally high tourism value. The area supports a major and growing tourist industry, which contributes significantly to the Port Stephens, State and National economies.

The project would adversely effect the amenity of Bobs Farm residents and school students (noise and dust are of particular concern to them), of the thousands of daily commuters and of the hundreds of thousands of visitors who pass the site. It would have far-reaching social and economic consequences.

The sand mine would significantly increase heavy vehicle movements on a road system which has a number of unsuitable single carriageway sections and which is already overloaded in some areas at peak times. The impact of this proposal on heavy vehicle traffic cannot be considered in isolation from other existing and proposed sand extraction projects relying on the same inadequate road network.

The waters of Port Stephens support a significant and diverse aquaculture industry. Mining operations so close to Tilligerry Creek pose potential threats to the well-established aquaculture industry and more general interference with the marine environment, the values of which are recognised in the Great Lakes-Port Stephens Marine Park.

The project would involve a significant loss of valuable fauna habitat and other environmental damage, which would continue in perpetuity after the end of mining operations due to the large residual lake.

## *Quality of application and supporting reports*

The applicant has clearly spent a lot of time and money on preparing their application, with the EIS and supporting reports running into hundreds of pages with much detail. It is impossible for concerned citizens and community groups to

analyse (or even read) all of the documents and to judge whether assertions are credible.

The various expert reports are prepared specifically for the developer, and will understandably present the best possible case favourable to the applicant and downplay any adverse effects.

It is therefore essential that in assessing the project and the supporting documentation, the Department of Planning takes a critical and sceptical approach, and where necessary seeks independent third party expert advice on any questionable claims.

We note that several of the submissions from public authorities already published are critical of aspects of the expert reports. For example, Port Stephens Council has commented:

> *'A significant amount of inconsistencies and inadequacies were noted throughout the Environmental Impact Statement (EIS) (Tattersall Lander 2018) and Biodiversity Assessment (Wildthing 2018) in relation to biodiversity values for the proposed development.'* (Council letter to DoP dated 14 January 2019 p.1)

If this is true of the biodiversity reports it may well be true of other technical supporting documents tendered in support of the application.

We also note that some of the supporting reports are now very dated – some up to five years old, and submit that the applicant should be required to provide updates to relevant reports where circumstances may have changed since the original surveys.

## *Traffic impact*

The site is serviced by Nelson Bay Road which is the only access to and from the Tomaree peninsula which has a resident population of 25,000 which more than doubles in the peak tourist season. West of the site, the roads that connect the site to Newcastle and the Pacific Highway (i.e. the rest of the State and country) have three lengthy single carriageway sections only one of which has any prospect of major improvement (dualling) in the foreseeable future.

There are already 7 operating sand mines/quarries with a further three new or expanded operations currently proposed in addition to this one. See Figure 1 and Table 1 in Appendix A.

TRRA submits that the assessment must consider the cumulative impact of all existing and proposed sand mining operations in the eastern part of Port Stephens LGA.

This assessment should also take into account the potential for additional truck movement over and above current levels from existing approvals – if some or all of the existing operations are currently operating below their approved limits,

then the future load on the road network may include additional traffic from those operations as well as from any new approvals.

## The direct effect on traffic of this proposed project

The section on Traffic and Transport section of the EIS Volume 1 conveniently omits any specific figures for expected truck movements stating only that:

> '*The proposal will marginally increase traffic volumes in the locality with respect to Nelson Bay Road*.' (p.62)

Only later in the same document is there a mention of the volumes:

> *It is expected that the initial truck usage will be around 10 trucks/hr ramping up to 200trucks/hr for the wet mining operation*. (p.91)

We assume the second figure is a 'typo', as the detailed Traffic Impact Assessment at Annex O in Volume 2 of the EIS refers to peak *daily* movements of 200 trucks, with '20 inbound and 20 outbound tucks per hour on average when the site is working at maximum capacity'. (SECA Solutions report p.13)

Describing this volume of additional heavy traffic as 'marginal increase' is actively misleading. The EIS itself states the current position:

> '*Heavy vehicle movements in the vicinity of the subject site are relatively low, reflective of the limited through traffic movements along Nelson Bay Road. As a road that serves the Nelson Bay peninsular, there are no through traffic movements, with the only heavy vehicle movements being those associated with deliveries to the various urban centres. Heavy vehicle movements are restricted to delivery vehicles to the major shopping centres as well as some light industrial users.*' (p.670)

It follows that the up to 200 trucks per day travelling both ways over at least a 20 km stretch of Nelson Bay Road (between the Anna Bay roundabout and the western end of Marsh Rd) (i.e. each travelling 40 km) will be an almost entirely new experience for other road users. Only one other small sand mine currently operates to the east of this site, with another small one proposed.

We have been unable to locate any reference in the EIS to the number of truck movements from the other sand mines already located or approved around Williamtown and Salt Ash. The numbers already involved is significant, particularly around the Richardson road and Medowie road roundabouts. Significant increases will be generated by the approved expansion of the Salt Ash Quarry at Janet Parade. We attach our own overview of the cumulative impact at Appendix A.

The applicant should be required to document, and the assessment must consider, the cumulative number of truck movements when all existing and proposed mines reach capacity, especially bearing in mind that each vehicle has an estimated weight of up to 44 tonnes (p.449).

In relation to Nelson Bay Road, the EIS states:

> *As a major state road, under the Network Planning guidelines provided by the RTA (now RMS) the road would be classified as a Class 5R, typically providing 2 or more lanes with frequent overtaking opportunities. This guide indicates that the average daily traffic flows would be 12,000 vehicles per day. The next classification of road, 6R, with annual traffic flows greater than 12,000 vehicles per day would typically provide 4 or more traffic lanes.*

and

> *At peak operations, there will be 200 truck movements in and out of the site with 90% of these movements heading west along Nelson Bay Road. This will potentially increase flows in Nelson Bay Road to the west of the site by 360 vehicles. The current AADT for this length of Nelson Bay Road is 15,311 and this could increase to 15,671 vehicles per day, an increase of 2.3% over the existing flows. (p.682)*

We submit that these figures demonstrate that the sections of Nelson Bay Road with single lane Class 5R roads will *not* be able to safely accommodate the increase of heavy truck movements from this proposal.

This mine, if approved, will involve a major increase not only in the volume of heavy truck movements but also their penetration east of Salt Ash - most existing and approved sand truck movements are currently associated with mines/quarries located to the west of the sandhills (at Salt Ash and Williamtown).

We note that Table 11.23 on page 388 of the EIS Volume 1 gives figures for increased traffic volumes along Marsh Road turning right onto NB Rd – up to 200 extra movements in peak production with 15% of these being 'heavy vehicles'. This contradicts either the assurance on p.62 that '*Heavy vehicles will not travel west along Marsh Road*' and/or the statement on p.63 that '*all heavy vehicles will turn left out of Marsh Road*'.

The declared intention is to only allow laden trucks to turn east onto Nelson Bay Road it is not clear how this would be enforced, unless physical barriers were installed to prevent any right turn from Marsh Road (which would significantly inconvenience local light traffic. If truck drivers can physically turn right out of Marsh Road across the eastbound carriageway of Nelson Bay Rd, some will inevitably try, which will pose a major safety hazard given the speed of eastbound traffic downhill and the need to accelerate uphill to the west, with only a very short merge lane.

The EIS states that '*The site has direct access to a major road, Nelson Bay Road and the frontage has dual carriageway capacity*.' Whilst factually correct, this fails to mention that other significant stretches of Nelson Bay Road to the west (which would be traversed by the heavy trucks involved in this operation) remain single carriageway. Even if the current State government's recently renewed 'promise' to fund dualling of another section of the road is fulfilled (a similar 2015 promise

was not!), there would still be significant stretches of the road with only a single carriageway – likely for the lifetime of this project (see Map at Appendix A).

We note that Port Stephens Council does not support the proposed egress arrangements and argues that a '*preferred haulage route would be a left in and a left out from Nelson Bay Road, subject to an appropriate design …*' This would also attract a heavy haulage levy. (Council letter 14 January, p4) We submit that a heavy haulage levy would be entirely appropriate if the quarry was approved, but do not concede that any significant sand truck movements to and from this site are acceptable.

## Greenhouse gas emissions from haulage

We also submit that the very significant greenhouse gas emissions from the truck movements associated with the mine must be considered against Sustainable Development principles. with number of trucks producing greenhouse gases page 449.

The EIS admits that there will be significant emissions but notes that they are below a reporting requirement threshold (p.449) and suggests that they are trivial compared to Australia's total emissions. We submit that as concerns about climate change and the effect of emissions continues to grow, it is no longer acceptable to dismiss this issue so lightly.

## *Air quality and noise*

While the EIS and supporting reports seek to downplay the impact of the project on air quality (minimal p.62) and noise, there can be no doubt that these would be significant, directly affecting many local residents, the students and staff in the Bobs Farm Public School, and the visitors to and employees in several tourist facilities in the immediate neighbourhood – including the go-kart track and shark and ray centre. A wakeboard park is also proposed within a hundred metres of the egress from the sand mine on Marsh Road, and every year hundreds of thousands of tourists drive closely past the mine site on Nelson Bay Road.

The significance of the noise from up to 20 trucks per hour passing within metres of the Public School is confirmed by the proposal for a double 4 metre high barrier (Annex J), which would also be a visual blight and potentially create a wind tunnel.

We note that the NSW Department of Health has called for an Operational Noise Management Plan (not just for the construction phase) to be included in the EIS before a decision.

Dust is another major concern. Residents, and the school community, are understandably worried not just about the amount of particulate matter that will be generated, but specifically about the potential for silica dust which is understood to be a particular health risk.

## *Groundwater*

We are not qualified to comment in detail on the detailed assessment of groundwater impacts, but assume that the Department has access to expert advice, and trust that it will critically review the findings in the EIS and supporting reports.

It seems obvious that such a major operation, involving in its later stages excavation to 15 metres below AHD (sea level) (and even further below the water table) must have at least the potential to effect some changes, which could have consequences both for other water users in the area and for the ecological status of the site itself, both during and after mining operations. We doubt if the project is compatible with water related provisions of the *Hunter Regional Plan* – specifically *Direction 15: Sustain water quality and security.*

We observe that this would be the first significant sand mine in the area to propose excavation well below groundwater level – most of the others are either harvesting windblown sand or taking surface deposits from vegetated land with consents typically limiting excavation to a metre or less below ground level, and above the water table. As such the proposal for 'wet-mining' represents a completely new and uncertain threat to the local hydrology (and ecology).

Evaporation from such a large permanent lake (estimated to be 506ML per year which is expected to require a new groundwater licence) must also be a significant issue. We question if in the long term this rate of evaporation is consistent with an ecological sustainable development, particularly if the end use of an open tourist lake option is pursued.

After drafting these comments, we have become aware that Hunter Water have major concerns about the potential effect on groundwater and is opposed both to the depth of excavation proposed and to the creation of a permanent 25ha lake. (*Hunter Water submission on the DoP Major Projects website*).

The requirement for large volumes of water for washing and dust suppression during operations appears to be significant – the EIS cites site water demands rising to 10,584.00 KL/day for the processing plant alone by year 4 (Vol2 Part 1B, page150). The EIS states that 98% of the water used in the processing plant will be returned to the extraction basin/sump for re-use. This seems extremely high and we question if such efficiencies are possible.

We also question whether recycling of the water will give rise to possible build-up of acid or heavy metal contaminates – we cannot see any comment on this in the EIS.

## *Acid Sulfate Soils*

The bulk of the site has been an assigned PASS Class 4 category which implies that works beyond 2m below the natural ground surface are likely to present an environmental risk.

We note that only a total of 27 soil samples from 3 bore holes were tested, yet guidelines suggest 80 boreholes (Vol2 Part1B section 5.3.1), although similar results were previously found at five site bores.

The conclusion was that potential acid sulphate soils (PASS) are present on the site at levels below approximately 0.8 mAHD and therefore a detailed management plan is required.

We note that it is not expected to encounter or disturb PASS during stage 1. Treatment for stages 2 and 3 are presented in Table 5.5 (p.131) which involve testing of pH from the slurry and stockpiling onsite then treating with lime if necessary.

The proposed guidelines appear to be overly simplified and do not appear to consider PASS on the surrounding edges of the lake with rising and falling of the water level.

## *Ecological impact*

The EIS admits that the project will significantly affect a significant ecological corridor – recognised in the Hunter Regional Plan as an important 'Biodiversity Corridor' (p.66). A total area of 38 hectares of existing vegetation will be progressively cleared, including '*the removal of approximately 25.90ha of key habitat'* (as defined by the NPWS). The EIS identities habitat on site that is suitable for 43 threatened fauna species, and notes that '*The proposal will result in a significant loss of habitat for a number of the addressed species*' (p.65) This includes the direct and potential impacts or losses of … '*approx. 25.90 hectares of supplementary koala habitat and habitat for nine other threatened fauna species* ' *and* … '*approx. 877 hollow-bearing trees' (p.67)*

We cannot see any scientific justification for the consultants' opinion that: '*The proposal will result in a reduction in habitat for both these two nationally threatened species however is unlikely to have a significant impact*' (p.67 – *our emphasis*). This is an unsupported conclusion and should be dismissed.

Suggestions that the long-term effect on the corridor will be minimal due to site rehabilitation are not credible when a very large lake will remain in perpetuity, providing a permanent 'barrier' to wildlife movements and gap in habitat. The EIS admits that the ecological corridor, 1.5km wide at the mine site, will be reduced by 600m (p.67) (i.e. nearly halved!) and that 26 ha of 'key habitat' will be cleared.

Proposed mitigating measures include a 15m wide vegetated buffer (p66) which is clearly unlikely to have more than a token effect. We note that the RFS has submitted that a 10m wide APZ will be required around the operational site, and we question what effect this will have on the area to be cleared, permanently.

We submit that the proposal is incompatible with the *Hunter Regional Plan*, in particular *Direction 14 (Protect and connect natural areas).*

## *Site rehabilitation*

The EIS emphasises the proposed 'progressive' rehabilitation of mined areas, such that 'no more than three hectares be exposed at any one time' (p62). This obviously can't be the case once the wet mining phase commences there will no longer be any rehabilitation of the large flooded areas which will presumably remain in perpetuity.

The progressive rehabilitation is cited as a mitigating factor in relation to several adverse impacts including air quality (dust) and wildlife habitat loss.

We submit that the assessment must consider a worst case scenario in which the promised rehabilitation is not carried out. The track record of many mining and quarrying projects in NSW and elsewhere suggests that operators often find excuses for not meeting their rehabilitation commitments and obligations, by winding up businesses or transferring ownership to entities without any resources.

Academic papers highlight the issues and the consequences of leaving remediation in the hands of miners (*Walters A. The Hole Truth: the mess coal companies plan to leave in NSW, Energy and Resource Insights NSW 2016*., and *Hunt, D B A new framework for evaluating beneficial end-uses for mine voids. Ph.D. Thesis Curtin University, School of Agriculture and Environment. 2013*). Relevant key messages from these papers include the time required for holes to fill with water that is clean enough for the proposed use and the costs of remediation (including land management costs between the cessation of mining and establishment of the new use.

Enforcement of rehabilitation conditions is often poor and fines when levied so small as to make them an acceptable business risk. Unless sufficient financial bonds are required to be lodged in advance to pay for all required rehabilitation in the event of financial failure etc., the assessment must judge the project on the assumption that the mined area will remain unimproved, with the consequent loss of amenity, habitat and other adverse ecological, economic and social effects.

## *Heritage issues*

We note (p.70) that '*five Aboriginal archaeological sites identified within the Project area are expected to be directly impacted*' and that '*it is considered highly likely that a*

*body of subsurface Aboriginal archaeological material will be impacted by the Project'*. We support the recommendation in the EIS that '*To manage potential impacts to the known and potential Aboriginal heritage resource of the Project area, .. a detailed Aboriginal Cultural Heritage Management Plan (ACHMP) be prepared for the Project. … in consultation with RAPs and OEH, and to the satisfaction of DP&E*.'

We submit that the applicant should be required to carry out and publish the results of further survey work *before* a decision on the project, not just as a condition of approval.

We were interested to read about the WWII 'Cadre Camp' but note that there appears to be little physical evidence of the camp remaining, and therefore no need for heritage protection.

## *Economic impact*

The EIS suggests that the current site usage – a fig and olive farm – '*has limited commercial viability and little opportunity to expand'* (p.60), and contrasts this with figures of proposed employment associated with the sand mining operation.

We question the credibility of the 80 'on-site' jobs estimate given on p.60, unless 'including transportation' includes drivers of trucks collecting sand – if the latter, then these would not be either 'on-site', new or necessarily local employees, and should not be counted as a net benefit.

Assessment of this proposal should include independent verification of the employment estimates, including comparison with other sand mining projects – for example the recently approved Cabbage Tree Road mine only estimated 6 on-site jobs from a project two thirds of the size (output) of this one. Mention of possible employment from future uses of the remnant lake should be discounted as the uses mentioned are too far in the future and too speculative to be a relevant factor for the approval decision.

The EIS makes no attempt to estimate the potential job-losses in tourism from a further 'industrialisation' of the approaches to the Tomaree peninsula. The area attracts hundreds of thousands of visitors each year, many attracted by its high environmental values. There **is** likely to be significant damage to the tourist industry from the deterrent effect of additional heavy traffic on roads already overloaded in peak holiday times, and by overall damage to the image of Port Stephens from a further demonstration of a rampant 'development first' culture. There should also be explicit recognition of potential job losses in the area's fishing and aquaculture industries.

The EIS confirms that it is proposed to extract various types of sand for a variety of different markets, some of which are asserted to be 'relatively scarce' and 'sought after', while others are admitted to be 'at the lower end of market return'. 15 different types are listed at p338 of the EIS Pt2 Volume 1B (Annex I), but it is

only suggested that unspecified amounts of the higher quality sands may be produced depending on the processing techniques used. Without a breakdown of the estimated volumes of the different types of product, and information about alternative sources, it is impossible to assess how important the proposed project would be to meeting needs in the different markets.

We note that while a submission from NSW Resources and GeoScience offers generalised support for new sand resources, it does not quantify the need or provide detailed justification for this particular operation.

Any assessment of the public interest in the project going ahead must address these different markets – large quantities of 'fill sand' would clearly not provide as strong a justification as, for example, smaller quantities of 'glass sand'. We note that the 2015 Stage 3 Preliminary Sand Assessment and Mining Plan Report (Annex I) commented that: '*The impurities within the sand are also believed to preclude it from meeting clear glass specification*; (QMS 2015 p.326). It would appear from this finding that much of the detailed analysis of silica sand in the 200+ page Annex I is irrelevant to this project.

## *Other impacts*

The EIS states:

> '*The proposed sand mine will result in the following potential indirect impacts;*
> • *Increased spread of noxious weeds;*
> • *Increased spread of pest fauna species;*
> • *Edge effects;*
> • *Impact on Groundwater Dependent Ecosystems (GDE's) through changes to groundwater levels;*
> • *Increase in noise from machinery;*
> • *Increase in artificial lighting. Increased lighting may be the result of security lighting.*
> *A number of mitigation measures have been specified ….* '

We have already addressed some of these impacts above. In our view, none of the proposed mitigation measures do so effectively or sufficiently to compensate for the adverse impacts.

## *Bio-banking offsets*

In particular, we contest the suggestion that the proposed offsets of bio-banked land in the Nerong area (the exact area of which does not appear to be specified on p663) are sufficient to address the on-site habitat loss. The Nerong area has a significantly different geology from the Bobs Farm area[1] and this is likely to be reflected in different flora and fauna. We question whether land in the Nerong

[1] NSW Geological Series Map 1:250,000 series (reprinted 2006)

area will adequately compensate for the loss of habitat at the project site, even if the principle of offsets is accepted.

We have fundamental concerns about the entire bio-banking and offset policy as currently implemented in NSW, and while we accept that it is currently a legitimate tool, it should not be used, as in this case, as a justification for irreparable damage to sites of very significant ecological significance. Application of the bio-banking offset policy must acknowledge geographic (and geological) context and the dynamics of fauna populations. For example, even if the offset land at Nerong led to the survival of a given number of koalas in that location (and that is only a hope), that could not compensate for the deaths of and equal or even a lesser number of koalas in the Bobs Farm area.

As already noted above, the permanent lake to be left after the cessation of the mine would significantly decrease in the width of the wildlife corridor. The small offsets on the northern border of Lot 254 would have a minimal mitigation effect.

## *Visual Impacts*

The 15m proposed buffer along Nelson Bay Road may not be sufficient to shield the visual impact of the processing plant buildings and storage areas - no heights of building are provided.

The acoustic barriers of 4m will be significant structures and it is not correct to state: '*Passing traffic will only have a momentary glimpse of the walls as it is at right angles to the direction of the vehicular traffic*.' (p.742) The traffic along Marsh Road particularly near the school will be very slow and many vehicles static while dropping off and collecting students – the barriers will be very visible to all these road users.

Shadowing has been downplayed and there is no mention of possible wind tunnel effects.

## *Conclusion*

TRRA Inc. submits that this application should be refused, on multiple grounds as detailed in this submission.

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## *Appendix A: Figure 1 Sand mining Map*

## *Appendix A: Table 1 Sand mining overview*