

Our Ref: AM/N03074/Lw1

25th October 2021

Hanson Construction Materials Pty Ltd
c/- Oska Consulting Group
Level 1, 155 Varsity Parade
Varsity Lakes QLD 4227

Attention: Jason Webster

Dear Jason,

RE: Tweed Sand Plant Expansion EIS - Response to Tweed Shire Council and Biodiversity Conservation Division Comments

It is understood that the Department of Planning, Industry and Environment (DPIE) requested Tweed Shire Council (TSC) and Biodiversity Conservation Division (BCD) to provide comment on the Environmental Impact Statement (EIS) for the Hanson Tweed Sand Plant Expansion (DPIE Reference SSD-10398). JWA Pty Ltd have been engaged to provide responses to relevant comments received from TSC and BCD. Each comment relevant to terrestrial ecological issues has been reproduced in *italics* below and a response provided. A number of comments relating to either groundwater or planning issues will be addressed by other relevant consultants where noted.

Tweed Shire Council comment

- *The development layout should be modified to demonstrate how the avoid and minimise principles/provisions specified in the Biodiversity Assessment Method 2020 and Council's Development Control Plan Section A19 Biodiversity & Habitat Management are to be met.*

JWA Response

The proposal is for the expansion of an existing sand extraction operation. The location and extent of the proposed expanded sand extraction area is based on the location and extent of the available resource. The proposal will occur over a total area of approximately 236 ha of which 3.82 ha (i.e. approx. 1.6%) contains native vegetation. By focussing the proposed expansion within areas generally devoid of native vegetation (i.e. vacant land currently utilised for cattle grazing), the proposal has avoided and minimised the removal of native vegetation as far as practicable. Approximately 98.4% of the proposed expansion area is devoid of native vegetation.

JWA Pty Ltd

Suite C, Building 21 Garden City Office Park, 2404 Logan Road, Eight Mile Plains QLD 4113
p 07 3219 9436 • f 07 3423 2076 • e brisbane@jwaec.com.au

www.jwaec.com.au

Tweed Shire Council comment

- *Areas of high ecological significance (i.e. Endangered Ecological Communities, Preferred Koala Habitat) identified in the Biodiversity Development Assessment Report (BDAR) dated March 2021 prepared by JWA Ecological Consultants should be retained and afforded ecological buffers of minimum 30 - 50 metre widths to avoid adverse indirect impact. Those values and associated buffers should be the subject of a habitat restoration program, incorporated into the Concept Rehabilitation & Landscape Management Plan and afforded long term statutory protection.*

JWA Response

As discussed above, the location and extent of the proposed expanded sand extraction area is based on the location and extent of the available resource. The proposal will occur over a total area of approximately 236 ha of which 3.82 ha (i.e. approx. 1.6%) contains native vegetation. Approximately 98.4% of the proposed expansion area is devoid of native vegetation. It is also noted that the majority of native vegetation occurring on and adjacent to the subject site is considered to be highly disturbed/degraded due to a long history of land clearing, cattle grazing and cropping activities. There are not considered to be any “sensitive high value, poorly represented coastal values” present on or immediately adjacent to the subject site that would warrant 50m buffers.

Tweed Shire Council comment

- *Any demonstrated unavoidable direct habitat impact requiring offsetting should be delivered and secured onsite. Offset areas should be contiguous with, and expand on those habitat units and associated buffers to be protected and subject to a habitat restoration program.*

JWA Response

Offsets for the unavoidable loss of 3.82 ha of native vegetation and 2.06 ha of land required to be rehabilitated under existing sand extraction approvals have been calculated in accordance with the requirements of the NSW Biodiversity Offset Scheme (BOS). Entry into the BOS is triggered by the area clearing threshold in this instance and an accredited assessor has therefore applied the Biodiversity Assessment Method (BAM) to assess the impacts of a proposal on biodiversity and prepared a Biodiversity Development Assessment Report (BDAR). The BDAR has calculated the number of ecosystem credits and species credits that are applicable for the unavoidable loss of site vegetation.

In accordance with the requirements of the NSW Biodiversity Offsets Scheme, proponents have two primary ways that they can satisfy their offset credit obligation:

1. They can identify and purchase the required ‘like for like’ credits in the market and then retire those credits via the OEH Biodiversity Offsets and Agreement Management System (BOAMS).

OR

2. They can use the Offsets Payment Calculator to determine the cost of their credit obligation and transfer this amount to the Biodiversity Conservation Fund via OEH BOAMS. The responsibility for identifying and securing the offset obligation would then be transferred to the Biodiversity Conservation Trust.

These credits will need to be purchased or retired as an offset for the removal of site vegetation prior to each phase of the development.

In addition to satisfying offset obligations in accordance with the BOS, a Concept Rehabilitation and Landscape Management Plan (CRLMP) (JWA 2020) has been prepared and submitted as part of the EIS. In accordance with the CRLMP, rehabilitation works proposed on the site will cover approx. 38.21 ha (over 16% of the site area, including landscaped road batters and beaches) and will be completed on a stage-by-stage basis following completion of sand extraction works within each phase. Prior to the commencement of rehabilitation works within each phase, a phase specific Rehabilitation and Landscape Management Plan (RLMP) will be prepared to provide site specific guidance for the rehabilitation and management of the land to be restored. The phase specific Rehabilitation and Landscape Management Plans will be consistent with the strategies outlined in CRLMP and/or current best practice methods.

Tweed Shire Council comment

- *Further survey should be undertaken for Koala (*Phascolarctos cinereus*) given the presence of preferred habitat;*

JWA Response

Surveys for the koala were completed during targeted threatened species surveys completed on the 27th August and 27th October 2020, and over the three (3) nights of the 26th - 28th January 2021. Survey methods included techniques suitable to record the koala, including spotlighting and active searches for koala scats. No evidence of koala activity was recorded from the subject site.

It is noted that the vast majority of the subject site is not considered to represent suitable habitat for the koala. A very small patch of Paperbark forest (i.e. covering 0.86 ha) in the northern portion of the site could potentially be classified as “Secondary (Class B) Habitat” as defined in the Tweed Coast Comprehensive Koala Plan of Management (TCCKPoM) (Tweed Shire Council, 2020) which states that these are “areas of forest and/or woodland wherein primary food tree species are absent, habitat containing secondary and/or supplementary food tree species only. These areas are capable of supporting viable low densities of koalas (<0.1 koala/ha)”. This small patch of potential habitat is highly isolated from any other patches of habitat and surrounded by open grazing land.

Given that the vast majority of the subject site (i.e. 99.6%) does not contain suitable koala habitat, the TSC requirement for further koala surveys appears to be highly overstated.

Tweed Shire Council comment

- *Assessment of Vegetation Zone 4 with the Scientific Determination for Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions should be performed in order to be satisfied that the mapped vegetation zone does not qualify as an Endangered Ecological Community listed under the Biodiversity Conservation Act 2016.*

JWA Response

As discussed in the BDAR, Vegetation Zone 4 occurs along drainage lines in the southern portion of the subject site and is highly disturbed. In accordance with Paragraph 5.2.1.4(a) the most likely PCT that would have occurred prior to disturbance has been determined, as the subject vegetation has been highly modified to the extent that it has reduced species richness and is missing structural layers. Vegetation Zone 4 is highly disturbed but is considered to have been derived from Plant Community Type (PCT) 780 (Coastal floodplain sedgelands, rushlands, and forblands of the North Coast) as described within the BioNet Vegetation Classification (OEH 2020). In fact, the vegetation integrity score of the degraded Vegetation Zone 4 was so low (11 out of 100) that impacts are not required to be offset with regards to ecosystem credits or species credits as the vegetation integrity score of this vegetation is below those set out in Paragraphs 10.3.1.1 and 10.3.2.1 of the BAM respectively.

To satisfy Council, the BDAR has been amended to refer to Vegetation Zone 4 as a highly degraded example of the Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions EEC. This has not changed the results of the BDAR as it relates to this vegetation zone.

Tweed Shire Council comment

- *Assessment of Vegetation Zone 1 and 2 with the Conservation Advice for Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland should be performed in order to be satisfied that the mapped vegetation zone does not qualify as a Threatened Ecological Community listed under the Environment Protection & Biodiversity Conservation Act 1999.*

JWA Response

Key diagnostic characteristics and condition thresholds are included within the Conservation Advice for Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland and are used to:

1. identify a patch of native vegetation as being the threatened ecological community;
2. determine whether the referral, assessment, approval and compliance provisions under national environmental law are likely to apply to a patch; and
3. distinguish between patches of different quality (to aid environmental management decisions).

National listing focuses legal protection on patches of the ecological community that are the most functional, relatively natural and in comparatively good condition. Because the ecological community exhibits various degrees of disturbance and degradation, condition thresholds, classes and categories have been developed. These provide guidance on whether a patch retains sufficient conservation values to be considered as a Matter of National Environmental Significance (MNES), as currently defined under national environmental law.

In order to be considered a MNES, areas of the ecological community must meet both:

- the key diagnostic characteristics AND
- at least the minimum condition thresholds for Category C.

One (1) small contiguous patch of good quality Swamp oak forest has been identified on the subject site and therefore meets the criteria of Category C. The proposal has therefore been considered against relevant EPBC Act Policy Statements, including the Matters of National Environmental Significance - Significant Impact Guidelines 1.1 (2013) which provides a self-assessment process to assist in determining whether an action should be referred to the Commonwealth for a decision on whether assessment and approval is required under the Act. The assessment has determined that the proposal would be highly unlikely to result in a significant impact on the Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland.

Regardless, Hanson has elected to refer the proposed action to the Australian Government for a decision as to whether the action requires assessment under the EPBC Act.

Tweed Shire Council comment

- *The proposed development in its current form impacts upon areas identified for rehabilitation in the Revised Rehabilitation and Landscape Management Plan, Tweed Sand Plant prepared by JWA Pty Ltd dated March 2019 under the current extraction approval. Alternative areas of similar areal extent for habitat restoration should be provided and be additional to that required under the current proposal.*

JWA Response

As discussed above, offsets for the unavoidable loss of 3.82 ha of native vegetation and 2.06 ha of land required to be rehabilitated under existing sand extraction approvals have been calculated in accordance with the requirements of the NSW Biodiversity Offset Scheme (BOS).

In addition to satisfying offset obligations in accordance with the BOS, a Concept Rehabilitation and Landscape Management Plan (CRLMP) (JWA 2020) has been prepared and submitted as part of the EIS. In accordance with the CRLMP, rehabilitation works proposed on the site will cover approx. 38.21 ha (over 16% of the site area, including landscaped road batters and beaches) and will be completed on a stage-by-stage basis following completion of sand extraction works within each phase.

Tweed Shire Council comment

- *The proposed northern Haul Road should be realigned to avoid the unit of vegetation mapped as Vegetation Zone 3 in the BDAR and associated minimum 30 - 50 metre wide ecological buffer zone.*

JWA Response

The proposed northern Haul Road has been relocated however the unit of vegetation mapped as Vegetation Zone 3 in the BDAR is still proposed to be removed to allow for extraction of the available sand resource.

Tweed Shire Council comment

- *In order to meet the aims of the Tweed Local Environmental 2014, in particular Section 1.2(j):*

to provide special protection and suitable habitat for the recovery of the Tweed coastal Koala.

The proponent is requested to address all relevant provisions of the Tweed Coast Comprehensive Koala Plan of Management (TCCKPoM) [approved under State Environmental Planning Policy (Koala Habitat Protection) 2021].

With reference to the TCCKPoM, the site occurs within the Southern Tweed Coast Koala Management Area and supports Preferred Koala Habitat.

Where impact upon Preferred Koala Habitat is unavoidable, the proponent must address Appendix C - Offset Provisions of the TCCKPoM and provide a Koala Offset Plan for approval. Preferred Koala Habitat Offsets are to be provided within the Southern Tweed Coast Koala Management Area and afforded long term protection.

JWA Response

Assessment of the requirements of the Tweed Coast Comprehensive Koala Plan of Management (TCCKPoM) and any relevant offsets required under Appendix C - Offset Provisions of the TCCKPoM, and the preparation of a Koala Offset Plan for approval (if necessary) would be premature at this stage. Based on the proposed phasing plan impacts on mapped koala habitat will not occur until years 23-26 of the proposed expansion. These items can be completed at the appropriate time as a condition of consent.

Tweed Shire Council comment

- *The Concept Rehabilitation & Landscape Management Plan dated March 2021 prepared by JWA Ecological Consultants should be amended to address the following fundamental matters:*

- *Capture areas of high ecological significance (i.e. Endangered Ecological Communities, Preferred Koala Habitat), associated buffer zones and any offset areas;*
- *In perpetuity maintenance arrangements should be reflected in the plan;*
- *Species densities should be increased within Riparian Rehabilitation Areas and expanded buffer zones to:*
 - *Trees - 5 m spacing*
 - *Shrubs - 3 m spacing*
 - *Groundcover - 1 m spacing*
- *Increase maintenance rotations to quarterly per annum; and*
- *Identify Open Space Areas detailed in 2.7.3.4 on the Concept RLMP Phasing plan.*

JWA Response

Due to the long-term nature of the proposed development this CRLMP has been prepared to provide overarching requirements for the restoration and management of site following the completion of sand extraction works. The CRLMP establishes responsibilities and procedures for the progressive rehabilitation of the site following completion of sand extraction works, including the stabilising/reprofiling of banks, planting methods, control of weeds and monitoring requirements, and is generally in line with the approved Rehabilitation & Landscape Management Plan (RLMP) for the existing sand plant operation.

The details requested by Council would be addressed in future detailed RLMPs prepared and approved prior to each phase of the proposed expansion (as required by the Concept RLMP).

Tweed Shire Council comment

- *Further investigation and assessment should be undertaken with regard to the impact of the proposal on Groundwater Dependent Ecosystems by a suitably qualified specialist in the field.*

JWA Response

A response to this item has been prepared by Gilbert & Sutherland (G&S). It is understood that revisions to the extraction footprint have been made and a supplementary groundwater modelling report prepared with respect to the impacts of drawdown within the footprint of the mapped low potential GDE's.

With respect to the Low Potential GDE (DrawingNo.12035- 103) adjacent the southern boundary of the expansion footprint west of Lot 1 on DP1250570. The revised groundwater model incorporates an increased buffer distance of ~50 m between the limit of extraction and the site boundary. Whilst groundwater drawdown is still predicted to occur within this area the increased buffer distance has reduced the lateral extent of offsite drawdown from 170 m to 155 m and

reduced the magnitude of drawdown to between 0.1 m and 0.5 m. The footprint of offsite drawdown in this area has reduced by ~4,300 m².

As the change in groundwater table predicted in this area is within the range of natural seasonal fluctuation, it is unlikely that the Swamp oak forest (*Casuarina glauca*) present in this area will experience negative impacts as a result of the localised change in groundwater conditions. This is further evidenced by the fact that Swamp oak trees are growing readily within areas that have been subjected to long-term and ongoing fluctuations in groundwater levels e.g. along constructed drainage lines throughout the subject site and along the margins of the existing sand extraction lake.

Tweed Shire Council comment

- *Details of long term management (including funding) and statutory protection arrangements of ecological values, associated buffer zones and any offset areas should be provided. The preparation of a Planning Agreement to deliver land management and protection commitments may be considered an appropriate mechanism.*

JWA Response

The details requested by Council would be addressed in future detailed RLMPs prepared and approved prior to each phase of the proposed expansion (as required by the Concept RLMP).

BCD Comment

- *Before the proposed development is considered any further the proponent be required to identify suitable end use/s and provide a rehabilitation plan that will demonstrate how the extraction areas will be returned to viable, and wherever practicable, self-sustaining ecosystems, and that these plans are adequately financed, implemented and monitored in accordance with the Strategic Framework for Mine Closure and other relevant guidance documents, as required by the Secretary's Environmental Assessment Requirements for this proposal.*

JWA Response

Due to the long-term nature of the proposed development this CRLMP has been prepared to provide overarching requirements for the restoration and management of site following the completion of sand extraction works. The CRLMP establishes responsibilities and procedures for the progressive rehabilitation of the site following completion of sand extraction works, including the stabilising/reprofiling of banks, planting methods, control of weeds and monitoring requirements, and is generally in line with the approved Rehabilitation & Landscape Management Plan (RLMP) for the existing sand plant operation.

The details requested by BCD would be addressed in future detailed RLMPs prepared and approved prior to each phase of the proposed expansion (as required by the Concept RLMP).

BCD Comment

- *The BDAR be amended as follows:*
 - *Show the correct Approved Extraction Area and existing rehabilitation areas in Figures 8-15.*
 - *The species polygon for Southern Myotis is to include areas that were required to be rehabilitated as part of the current consent but that will be impacted as a result of the proposed development and the offsets calculated according to the BAM-C.*
 - *Provide a comprehensive assessment of prescribed and indirect impacts arising from the proposal such as lighting, site disturbance, increased relocated traffic and loss of connectivity and impediments to movement for threatened species including the Koala.*

JWA Response

The BDAR has been amended to include an assessment of impacts on approved rehabilitation areas, and the species polygon for the Southern myotis, as requested by BCD. As discussed in the original and revised BDAR, due to the long-term nature of the proposed expansion (i.e. over 30 years), the BDAR has been prepared to provide overarching offsetting requirements associated with the proposed sand extraction works on a phase-by-phase basis. Prior to the commencement of sand extraction works within each phase, a phase specific BDAR (or assessment in line with the relevant legislation at that time) will be prepared to “comprehensively” assess impacts and offset obligations once the relevant design/details are available. It is noted that these impacts are likely to be minor however when considered on the context of the current site values (i.e. cleared grazing and cropping paddocks).

BCD Comment

- *The areas that were required to be rehabilitated in accordance with the current consent and the revised Rehabilitation and Landscape Management Plan (RLMP) prepared by JWA (2019), and that will be impacted by this proposal, must be quantified. Offsets for impacts that cannot be avoided must be calculated using the Biodiversity Assessment Method (BAM) Calculator or BAM-C according to the most appropriate PCT present.*

JWA Response

The BDAR has been amended to include an assessment of impacts on approved rehabilitation areas as requested by BCD. Impacts on the areas that were required to be rehabilitated in accordance with the current consent and the revised Rehabilitation and Landscape Management Plan (RLMP) prepared by JWA (2021), and that will be impacted by this proposal, have been calculated as though these areas are at benchmark levels for the relevant PCT. It is noted that the approved rehabilitation plan allocates wetland rehabilitation areas to be representative of PCT 1209 (Soft Twig-rush Sedgeland of North Coast Wallum Swamps) however, this PCT is not listed within the BAM-C as occurring within the Burringbar-Conondale Ranges (SEQ03) subregion of the South Eastern Queensland IBRA bioregion. For the purposes of the amended BDAR,

Vegetation Zone 6 (Wetland rehabilitation areas) has been allocated to PCT 1808 (Estuarine reedland) which is considered to more closely describe the vegetation zone.

BCD Comment

- *The EIS and BDAR need to include greater consideration to the cumulative impacts of this and adjacent extractive operations, including impacts on groundwater, particularly in consideration of predicted sea level rise.*

JWA Response

A response to this item has been prepared by Gilbert & Sutherland (G&S).

BCD Comment

- *If the consent authority decides to approve this development, the riparian rehabilitation should provide as a minimum 20m - 50m wide fully vegetated riparian areas. It should also include a minimum 10m wide wetland revegetated area with appropriate slope to enable effective restoration to occur and for areas to be maintained in the future.*

JWA Response

Proposed riparian rehabilitation areas range from 10m to 70m in width and cover a total of approximately 38.21 ha (over 16% of the site area, including landscaped road batters and beaches. The proposed rehabilitation areas, in addition to the offset required in accordance with the NSW Biodiversity Offset Scheme (BOS), are considered to provide more than adequate compensation for the removal of small areas of degraded native vegetation from the expansion footprint. It is not clear which legislative requirement BCD are relying on to request 20 - 50m wide riparian areas to be established.

Please do not hesitate to contact me if you require any further information.

Yours faithfully,
JWA Pty Ltd



Adam McArthur
Director / Principal Ecologist