

Our Reference: 21130
3 September 2024

Ms Melanie Hollis
NSW Department of Planning, Housing & Infrastructure
4 Parramatta Square, 12 Darcy Street
PARRAMATTA NSW 2150

Via NSW Major Project Portal

Response to Further Information Request
Hanson Tweed Sand Plant Expansion Project (SSD 10398)

We act on behalf of our clients, Hanson Construction Materials Pty Ltd regarding the abovementioned State Significant Development Application.

On 12 July 2024, a Further Information Request was received from the Biodiversity and Conservation Division (BCD) of the Biodiversity, Conservation and Science Directorate in the Department of Climate Change, Energy, The Environment and Water. This letter and attachments constitute a response to all the information requested. The following information is attached in support of this response:

- Attachment 1 – BCD RFI Response Summary Table
- Attachment 2 – JWA Response Letter dated 20th August 2024

We also note that BDAR spatial data has been submitted in digital format as part of this response.

In response to the two items contained within the BCD RFI dated 12 July 2024 the following comment is provided:

1. A Response Table which summaries and collates the issues raised in each stakeholder's submissions made to date, clearly sets out the stakeholder and date of submission, and addresses how each matter has been addressed, providing a reference to the relevant support document and section. Where revised reports have been prepared, or additional information provided, or there have been changes

to the project design, these are to be tabulated, with the relevant findings or designs incorporated across the most recent document set and referenced.

Comment

While we acknowledge the request item from BCD, we would refer BCD to previous submissions made including:

- Submission Report submitted 28/10/2021.
- BDC RFI Response submitted and dated 28/04/2022.
- RFI Response Report submitted 27/06/2024.

The items being requested have been provided and updated over the course of the projects assessment. To assist BCD, we have provided a summary table of the responses to the four previous BCD comments under **Attachment 1**.

We will not be providing further summary of the responses that relate to addressing matters raised by other authorities to satisfy a whim of the BCD, these items are of no relevance and are outside the remit of BCD. However, should BCD be interested in such items we would refer them to the Submission Report and the RFI Response Report.

2. Spatial data associated with BDAR

The spatial data associated with the BDAR has been provided via separate email.

We trust this information is sufficient for your purposes; however, should you require any further details or clarification, please do not hesitate to contact Mr. Kenny Wong on 0400694017 or myself on 0411887256.

Yours sincerely,



Lance Newley | Director
ELKN Planning & Project Management

Attachment 1 – BCD RFI Summary Response Table

BCD Letter dated 27 May 2021

RFI ITEMS

BCD Recommendations	RFI Response Comments
1. Before the proposed development is considered any further the proponent be required identify suitable end uses/ 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 <i>Strategic Framework for Mine Closure</i> and other relevant guidance documents, as required by the Secretary's Environmental Assessment Requirements for this proposal.	Comment: This request item was responded to within the Submission Report submitted on the 28/10/2021. We also refer BCD to the following documents: • Revised Supplementary Concept Mine Closure Plan included within the RFI Response Report submitted 27/06/2024. • Revised App H2 – Concept RLMP included within the RFI Response Report submitted 27/06/2024.
2. The BDAR be amended as follows: a. Show the correct Approved Extraction Area and existing rehabilitation areas in Figures 8-15. b. 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. 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.	Comment: This request item was responded to within the Submission Report submitted on the 28/10/2021. The items incorporated to address this request have been maintained as the assessment of the project has progressed and as adjustments have been made in response to the range of authority requests. We also refer BCD to the Revised App H1 – BDAR included within the RFI Response Report submitted 27/06/2024.
3. 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.	Comment: This request item was responded to within the Submission Report submitted on the 28/10/2021. The items incorporated to address this request have been maintained as the assessment of the project has progressed and as adjustments have been made in response to the range of authority requests. We also refer BCD to the Revised App H1 – BDAR included within the RFI Response Report submitted 27/06/2024.
4. 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.	Comment: This request item was responded to within the Submission Report submitted on the 28/10/2021. The items incorporated to address this request have been maintained as the assessment of the project has progressed and as adjustments have been made in response to the range of authority requests.
5. If the consent authority decides to approve this development, the riparian rehabilitation should provide as a minimum 20m – 50m wide fully vegetation 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.	Comment: This request item was responded to within the Submission Report submitted on the 28/10/2021. The items incorporated to address this request have been maintained as the assessment of the project has progressed and as adjustments have been made in response to the range of authority requests. While the proponent acknowledges the comment. The proposed concept final landform has been maintained. The proposed buffers and final landform are considered to strike the right balance between maximising resource extraction and achieving a natural looking final landform. We would also reinforce the project ecologist comments against a similar request seeking such buffers in the BCD RFI dated 3rd June 2022 which is reproduced below:

	<i>'The rehabilitation and proposed end use of the sand extraction project on privately owned land is concept in nature at this stage. Boundary fencing clearing, maintenance and vehicular access, bike/jogging/walking tracks etc., whether completed/installed or not, have no relevance to the assessment of biodiversity impacts or minimisation/mitigation measures of the project. As discussed previously, applicable statutory biodiversity offsets will be fully addressed in accordance with the requirements of the NSW Biodiversity Offset Strategy prior to each phase of the development. The proposed rehabilitation of the subject site is in addition to required biodiversity offset obligations and it is unclear why such prescriptive statements regarding these rehabilitation works have been included in the BCD correspondence.'</i>
6. The EIS be expanded to provide a full response, detailing specifically how the EIS both addressed and satisfies the requirements of clauses 13 and 14 of the State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP).	Comment: This request item was responded to within the Submission Report submitted on the 28/10/2021. The items incorporated to address this request have been maintained as the assessment of the project has progressed and as adjustments have been made in response to the range of authority requests.
7. The following document changes are required: a. Correct the references in Table 26 of the EIS to Sections 6.1.5.1 and 6.1.10 as these do not exist. b. Correct the reference in Table 32 of the EIS to Cumulative Impacts being discussed in Section 5.1.13 which do not exist. c. Address the anomalies in areas identified as riparian restoration and open space/ public use areas in the EIS versus the CRLMP.	Comment: This request item was responded to within the Submission Report submitted on the 28/10/2021. The items incorporated to address this request have been maintained as the assessment of the project has progressed and as adjustments have been made in response to the range of authority requests.

BCD Letter dated 3 December 2021

RFI ITEMS

Recommendations	RFI Response Comments
1. The project must identify a suitable end use and a proposed rehabilitation strategy for the site having regard to the key principles in the Strategic Framework for Mine Closure and should set out a comprehensive closure plan that returns the site to viable, and where practicable, self-sustaining ecosystems, and demonstrates the plan will be adequately financed, implemented and monitored.	Comment: This request item was responded to within the dedicated BCD RFI response provided to the Department and dated 28 April 2022. We also refer BCD to the Revised Supplementary Concept Mine Closure Plan included within the RFI Response Report submitted 27/06/2024.
2. The rehabilitation plan should be amended to describe how the land will be restored to viable, self-sustaining ecosystems that will provide diverse and flourishing habitats for native species and should also demonstrate clear measurable targets, timeframes, responsibilities, monitoring and performance criteria for these works that will enable future oversight.	Comment: This request item was responded to within the dedicated RFI response provided to the Department and dated 28 April 2022. We also refer BCD to the Revised App H2 – Concept RLMP included within the RFI Response Report submitted 27/06/2024.
3. All required offsets must be identified in the BDAR for the development. The BDAR should set out the staged delivery of the offset requirements so that these will be met before any clearing occurs for each stage. This must include delivering offsets for areas that were required to be rehabilitated for the existing Tweed Sand Plant prior to commencing any expansion works should this project be approved.	Comment: This request item was responded to within the dedicated RFI response provided to the Department and dated 28 April 2022.

	We also refer BCD to the Revised App H1 – BDAR included within the RFI Response Report submitted 27/06/2024.
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BCD Letter Dated 3 June 2022

RFI ITEMS

BCD Recommendations	RFI Response Comments
1. The planning authority consider: a. Granting approval for a reduced extraction area, such as ten years of extraction. Further expansion could be conditioned on the basis of satisfactory rehabilitation of the first expansion stage. b. The approval could require the proponent to demonstrate that water quality, recreational and ecological rehabilitation requirements are satisfied. c. Requirements that will give certainty regarding the future ownership and management obligations for the land. These may include a deed of agreement with the proponent and requiring an up-front bond to be retained until water quality, recreational and ecological rehabilitation requirements are satisfied.	This request item includes three subpoints, comment against each is provided below: <u>a.</u> We note the RFI Response Report submitted on 27/06/2024. The project has been amended to ensure ultimate transparency and redundancy in the project rehabilitation works, with Independent Rehabilitation Audits now being proposed. The Independent Rehabilitation Audit would form a condition of consent and the proposed terms of which are outlined within Table 1 under Section 4.3 of the RFI Response Report submitted on 27/06/2024 and reproduced below for ease of reference: <i>Within a year of the commencement of expansion activities and every 6 years thereafter, the Applicant must commission and pay the full cost of an Independent Rehabilitation Audit (IRA) of the development. The primary purpose of the IRAs is to determine whether site rehabilitation is progressing in line with the commitments of the site's approved rehabilitation strategies, plan and/or program. Rehabilitation Audits must:</i> <i>a. Be conducted by a suitably, qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</i> <i>b. Assess the progress of rehabilitation works within the development including the assessment of biological indicators and water quality and whether the development is achieving the aims of any rehabilitation strategy, plan or program required under these approvals;</i> <i>c. Review the adequacy of rehabilitation strategies, plans or programs and suggest amendments where reasonably required;</i> <i>d. Recommend appropriate measures or actions to improve the progress of rehabilitation within the development, and/or any assessment, strategy, plan or program required under the abovementioned approvals; and</i> <i>e. Be provided to the Secretary and published on the Proponent's website.</i> <u>b.</u> We note BCD comments, however it would be anticipated any approval for the project would follow standard current good practice requirements and would include relevant conditions requiring the commitments and measure being proposing by the project and within the relevant management and concept plans are adhered to and met. <u>c.</u> We also refer BCD to the Revised Supplementary Concept Mine Closure Plan included within the RFI Response Report submitted 27/06/2024. The closure plan identifies the following in relation to financial provisioning for closure of the project:

	<i>Consistent with the principles of the Framework, Hanson proposes a funding method to ensure that:</i> <i>The costs of closure and site maintenance are adequately identified, estimated and accommodated within the closure plan.</i> <i>The closure and maintenance costs are reviewed regularly to appropriately respond to changing circumstances.</i> <i>The financial provision for closure and maintenance reflects the real cost.</i> <i>The financial provision accrues, is securely held and appropriately managed over time in accordance with appropriate accounting standards.</i> <i>The community and other stakeholders are protected from the burden of maintenance liabilities.</i> <i>The funding method would be codified and realised through a financial structure and/or legal instrument(s) (prepared to the satisfaction of the regulator upon approval of the TSP Expansion) having the following features (or similar):</i> <i>Initially established by Hanson, the fund structure would feature independent oversight and guarantees that the funds attach and remain dedicated to the TSP site.</i> <i>The fund's income would be secured as an amount per tonne of sand product produced from the site.</i> <i>Whilst the fund would meet all financial obligations in accordance with appropriate accounting standards, the fund operators would also hold regular (at least five yearly) reviews of the fund's balance, growth and income provisions to ensure they remain appropriate to the stated rehabilitation and maintenance goals and objectives.</i> <i>Alternatively, Hanson may choose to hold a bank guarantee for the requisite amount as determined through application of the principles of the closure Framework. The ultimate funding method would be determined by Hanson in consultation with the regulator upon approval of the TSP expansion.</i>
2. Given the slow progress on rehabilitation for the current sand extraction project, it is recommended the planning authority consider applying a condition that any expansion cannot commence until certain rehabilitation targets for the current Tweed Sand Quarry are met.	Refer JWA response letter provided under Attachment 2. In summary the project ecologist provides: <i>It is unclear what the BCD comment "slow progress on rehabilitation for the current sand extraction project" is referring to. The current operational sand extraction project has undergone progressive rehabilitation works over the past 16 years at the completion of sequential stages of extraction (i.e. rehabilitation of an extraction stage is not possible until that stage is complete). The rehabilitation of an operational sand extraction project is an ongoing process, with new issues identified and rectified as necessary, however works are continually progressing towards the long-term performance criteria. It is noted that the rehabilitation works have been inspected by the Department's compliance officers on several occasions and there have not been any significant issues raised to date.</i>
3. The Concept Rehabilitation and Landscape Management Plan (Concept RLMP) be amended to: a. Provide sufficient details including appropriate scaled and dimensioned plans and sections that demonstrate what will be achieved for the rehabilitation works both for the riparian area and the wetland area.	Refer JWA response letter provided under Attachment 2. In summary the project ecologist provides: <i>Keeping in mind that the proposed rehabilitation works on the project site are over and above any statutory biodiversity offset obligations, and have been offered by Hanson to minimise the potential for any offsite impacts associated with project and to restore land at the completion of the sand</i>

b. Include final landforms for the lake edges and demonstrate how wetland and riparian rehabilitation is consistent with geotechnical requirement for slope stabilisation. c. Align with the End Use and Final Landform Plan and demonstrate how the proposed land uses can be achieved. d. Expand the riparian rehabilitation areas to provide as a minimum 20m, but preferably 50m, wide fully vegetated riparian areas. e. Introduce greater plant community diversity to the riparian rehabilitation scheme (I.e. in addition to PCT 1235.). f. Detail the rehabilitation of a minimum 10m wide wetland revegetated area with appropriate slope to enable effective restoration to occur and document how areas will be maintained in the future. g. Require demonstration that the regeneration of wetland and riparian rehabilitation areas has reached a viable 'good condition' over time by requiring ongoing BAM plots to measure vegetation integrity (VI) and ensuring this is benchmarked to suitable 'good condition' PCT composition, structure and function condition scores.	<i>extraction project (land that is currently highly degraded from decades of agricultural activities), in response to the above:</i> <i>a. The proposed expansion of the TSP is to be completed over a 30 year timeframe. Due to the long-term nature of the proposed development the 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.</i> <i>As discussed above, rehabilitation works on the site will cover approximately 38.21 ha (over 16% of the site area) 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 including the end-use 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 RLMPs will be consistent with the strategies outlined in the CRLMP and/or current best practice methods. The phase specific RLMPs will contain the additional detailed information the BCD have requested.</i> <i>b. Wetland and riparian rehabilitation specifications will be dependent on the final landform as the extraction project progresses, not the other way around. Detailed rehabilitation specifications will be determined during the preparation of each phase specific RLMP.</i> <i>c. Not applicable to ecological issues.</i> <i>d. The intention of the expansion project is to extract as much of the resource as possible, whilst minimising any potential adverse effects on adjoining properties. The remaining setback to the extraction lake will be rehabilitated by Hanson and, based on the results of geotechnical studies as well as experiences from the current sand extraction operation, will provide a minimum 10 m wide vegetated buffer around the perimeter of the subject site. It is not clear why BCD are requesting "minimum 20m, but preferably 50m, wide fully vegetated riparian areas". There are no ecological values that need to be buffered by such large "riparian areas". The intention of the rehabilitation works is primarily to stabilise the final landform.</i> <i>e. Greater plant community diversity can be added to the riparian rehabilitation scheme (i.e. in addition to PCT 1235) of each phase specific RLMP if necessary to satisfy BCD.</i> <i>f. The rehabilitation of wetland revegetated areas will occur where appropriate slopes allow and will be dependent on the final landform as the extraction project progresses. Detailed rehabilitation specifications will be determined during the preparation of each phase specific RLMP.</i> <i>g. The CRLMP includes the monitoring of a range of rehabilitation, biological and water quality performance measures in line with the approved RLMP for the currently operating sand extraction project. The requirement for "ongoing BAM plots to measure vegetation integrity (VI) and ensuring this is benchmarked to suitable 'good condition' PCT composition, structure and function condition scores" seems excessive considering the rehabilitation works are not required as part of, and are in fact additional to, any offset obligation.</i> In relation to point c. we refer BCD to Revised App H2 – Concept RLMP included within the RFI Response Report submitted 27/06/2024.
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4. The Concept RLMP and End Use Plan should allow for boundary fencing clearing, maintenance and vehicular access and a bike/jogging/walking track and these should be located outside the 20-50m wide fully vegetated riparian area.	Refer JWA response letter provided under Attachment 2. In summary the project ecologist provides: <i>The rehabilitation and proposed end use of the sand extraction project on privately owned land is concept in nature at this stage. Boundary fencing clearing, maintenance and vehicular access, bike/jogging/walking tracks etc., whether completed/installed or not, have no relevance to the assessment of biodiversity impacts or minimisation/mitigation measures of the project. As discussed previously, applicable statutory biodiversity offsets will be fully addressed in accordance with the requirements of the NSW Biodiversity Offset Strategy prior to each phase of the development. The proposed rehabilitation of the subject site is in addition to required biodiversity offset obligations and it is unclear why such prescriptive statements regarding these rehabilitation works have been included in the BCD correspondence.</i>
5. 'Open Space' areas must be separated from the 'Riparian Rehabilitation' area as the riparian rehabilitation areas must be fully vegetated.	Refer JWA response letter provided under Attachment 2. In summary the project ecologist provides: <i>The rehabilitation and proposed end use of the sand extraction project on privately owned land is concept in nature at this stage. Boundary fencing clearing, maintenance and vehicular access, bike/jogging/walking tracks etc., whether completed/installed or not, have no relevance to the assessment of biodiversity impacts or minimisation/mitigation measures of the project. As discussed previously, applicable statutory biodiversity offsets will be fully addressed in accordance with the requirements of the NSW Biodiversity Offset Strategy prior to each phase of the development. The proposed rehabilitation of the subject site is in addition to required biodiversity offset obligations and it is unclear why such prescriptive statements regarding these rehabilitation works have been included in the BCD correspondence.</i>
6. Details regarding final lake form and geotechnical stability should be documented in the Concept RLMP and Final Use Plan to demonstrate that the proposed recreational and ecological objectives can be achieved.	Refer JWA response letter provided under Attachment 2. In summary the project ecologist provides: <i>The ecological objectives are that the final lake, in whatever form, is rehabilitated and is geotechnically stable. The recreational objectives, should public recreation opportunities eventuate for the site, are to allow the public access to what once was a highly degraded agricultural paddock and has been converted into a lake with surrounding vegetated/open space areas. It is not intended to form the lake to suit the proposed rehabilitation, rather the rehabilitation will respond to the final lake form.</i>
7. The planning authority should consider the adequacy of proposed open space areas in the current proposal and the loss of open space that was required under the current approval.	While we note the comments, we are unsure as to the relevance this comment has in relation to ecological matters. In any event we note that the proposed passive recreation end use is appropriate for the site, given the site is to remain in private ownership and there is no specific open space requirement identified in an adopted Local or State open space policy that the proposal could tailor the end use to. The proposed recreation use is limited to non-motorised water sports (kayaking, etc) and walking trail. As documented within the supporting specialist studies, the site will have the appropriate attributes for such a use at the end of site operations. Both the end use currently approved as part of HTSP operations and the proposed end use as part of the expansion have no linkage to the overall provision of public open space for the Tweed LGA. There is no loss of public open space because of the project.
8. The offsets for wetland community losses for PCT 1290 should be recalculated in the BAM_C as PCT 1808 is not a suitable match.	Refer JWA response letter provided under Attachment 2. In summary the project ecologist provides:

	Since the preparation of the BCD correspondence (dated 3rd June 2022), the BDAR has been amended to reflect the update of the Integrated BioNet Vegetation Data (IBVD) released in December 2023 and associated revised NSW plant community type (PCT) classifications and state vegetation type map (SVTM). The Vegetation Zone on site previously allocated to PCT 1808 (Estuarine Reedland) has now been assigned to PCT 3963 (Estuarine reedland). It is noted that these “wetland community losses for PCT 1290” do not amount to actual losses, but rather to the loss of areas within the margins of the existing Tweed Sand Plant (TSP) operation and that are currently proposed to be rehabilitated to wetland vegetation at some future point in time in accordance with the applicable approved Rehabilitation and Landscape Management Plan (JWA 2021). Monitoring of the past 16 years of natural regeneration/rehabilitation works on the subject site has identified that, due to the brackish nature of the lake, wetland vegetation is reflective of an estuarine/tidally influenced environment. PCT 3963 (Estuarine reedland) has been selected as the proposed future rehabilitation areas would likely have, and in some instances already have started to, naturally regenerate as reedland dominated by <i>Phragmites australis</i> accompanied by a lower layer of sedges and rushes, most often <i>Machaerina juncea</i> and/or <i>Juncus kraussii</i>, with a sparse cover of <i>Casuarina glauca</i>. This fits the description of PCT 3963 (Estuarine reedland) provided within the BioNet Vegetation Classification Database perfectly. The definition also states that “within the estuarine or marine-influenced environments, <i>Phragmites australis</i> grows where salinity is reduced by influx of freshwater through surface flow or seepage, occupying lagoon margins, permanent brackish pools, fringing tidal creeks, or waterlogged upper saltmarsh fringes”.
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BCD Letter Dated 6 July 2022

RFI ITEMS

Recommendations	RFI Response Comments
1. The BDAR calculations should be reviewed and rectified once all our previous recommendations have been fully addressed as the implementation of our recommendations will affect the final extraction footprint.	Comment: This request item was responded to within the RFI Response Report submitted on 27/06/2024. We refer BCD to the Revised App H1 – BDAR included within the RFI Response Report.

Attachment 2 – JWA Response Letter dated 20th August 2024

Our Ref: AM/N03074/Lw1

20th August 2024

Hanson Construction Materials Pty Ltd
c/- ELKN
11/35 Currumbin Creek Road
Currumbin Waters, QLD 4223
Attention: Lance Newley

Dear Lance,

RE: Tweed Sand Plant Expansion - Response to Request for Additional Information

I refer to the Tweed Sand Plant Expansion project and a request for further information dated 3rd June 2022. It is understood that the (then) Department of Planning and Environment (now Department of Planning, Housing and Infrastructure), requested the (then) Biodiversity Conservation Division (BCD) (now Biodiversity, Conservation and Science) to provide comment on the Response to Submissions (RtS) for the Hanson Tweed Sand Plant Expansion project (DPIE Reference SSD-10398). A summary of recommendations was provided in letter from BCD (dated 3rd June 2022), and detailed comments were provided in Attachment 1 of the BCD letter.

JWA Pty Ltd (JWA) have been engaged to provide responses to relevant comments received from BCD (dated 3rd June 2022). As requested, I have reviewed the BCD letter, and have provided responses below. I have not provided detailed responses to all items raised in Attachment 1 of the BCD letter, rather I have focussed on the summary of recommendations provided by BCD in the body of their document (listed in bold italics below).

It should firstly be noted however that BCD appear to have misunderstood the biodiversity values of the project site (or lack thereof), the limited impacts on biodiversity values of the proposed development, and the associated statutory biodiversity offset requirements. The bulk of the proposed project area is currently comprised of grazing land. The project area occurs within a highly modified agricultural landscape and has been in this condition for decades. The only native vegetation to be impacted by the proposal occurs as stands of regenerating trees along man-made drainage lines. 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, i.e. approximately 98.4% of the proposed expansion area is devoid of native vegetation.

All impacts on native vegetation will be offset in accordance with the requirements of the NSW Biodiversity Offset Strategy. The applicable offset credits will need to be purchased or retired as an offset for the removal of site vegetation prior to each phase of the development.

JWA Pty Ltd

PO Box 650, Jimboomba QLD 4280
p 07 3219 9436 • e brisbane@jwaec.com.au

www.jwaec.com.au

In addition to the above biodiversity offset obligations, revegetation works proposed by Hanson Construction Materials Pty Ltd under the Concept Rehabilitation and Landscape Management Plan (CRLMP) will further compensate for the removal of 3.82 ha of highly disturbed and regrowth native vegetation with approx. 38.21 ha of revegetation/rehabilitation areas (over 16% of the site area, including landscaped road batters and beaches) which equates to a 10:1 replacement ratio. The CRLMP provides a detailed plan for the restoration of the site in a progressive/staged manner over the life of the project with the aim of creating a viable, self-sustaining ecosystem where possible following the completion of sand extraction works.

Responses to relevant BCD comments / recommendations

Item 1

Not applicable to ecological issues.

Item 2

BCD Recommendation

Given the slow progress on rehabilitation for the current sand extraction project, it is recommended the planning authority consider applying a condition that any expansion cannot commence until certain rehabilitation targets for the current Tweed Sand Quarry are met.

JWA Response

It is unclear what the BCD comment “slow progress on rehabilitation for the current sand extraction project” is referring to. The current **operational** sand extraction project has undergone progressive rehabilitation works over the past 16 years at the completion of sequential stages of extraction (i.e. rehabilitation of an extraction stage is not possible until that stage is complete). The rehabilitation of an **operational** sand extraction project is an ongoing process, with new issues identified and rectified as necessary, however works are continually progressing towards the long-term performance criteria. It is noted that the rehabilitation works have been inspected by the Department’s compliance officers on several occasions and there have not been any significant issues raised to date.

Item 3

BCD Recommendation

The Concept Rehabilitation and Landscape Management Plan (Concept RLMP) be amended to:

- a. Provide sufficient details including appropriate scaled and dimensioned plans and sections that demonstrate what will be achieved for the rehabilitation works both for the riparian area and the wetland area.*
- b. Include final landforms for the lake edges and demonstrate how wetland and riparian rehabilitation is consistent with geotechnical requirement for slope stabilisation.*

- c. Align with the End Use and Final Landform Plan and demonstrate how the proposed land uses can be achieved.*
- d. Expand the riparian rehabilitation areas to provide as a minimum 20m, but preferably 50m, wide fully vegetated riparian areas.*
- e. Introduce greater plant community diversity to the riparian rehabilitation scheme (i.e. in addition to PCT 1235).*
- f. Detail the rehabilitation of a minimum 10m wide wetland revegetated area with appropriate slope to enable effective restoration to occur and document how areas will be maintained in the future.*
- g. Require demonstration that the regeneration of wetland and riparian rehabilitation areas has reached a viable 'good condition' over time by requiring ongoing BAM plots to measure vegetation integrity (VI) and ensuring this is benchmarked to suitable 'good condition' PCT composition, structure and function condition scores.*

JWA Response

Keeping in mind that the proposed rehabilitation works on the project site are over and above any statutory biodiversity offset obligations, and have been offered by Hanson to minimise the potential for any offsite impacts associated with project and to restore land at the completion of the sand extraction project (land that is currently highly degraded from decades of agricultural activities), in response to the above:

- a. The proposed expansion of the TSP is to be completed over a 30 year timeframe. Due to the long-term nature of the proposed development the 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.

As discussed above, rehabilitation works on the site will cover approximately 38.21 ha (over 16% of the site area) 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 including the end-use 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 RLMPs will be consistent with the strategies outlined in the CRLMP and/or current best practice methods. The phase specific RLMPs will contain the additional detailed information the BCD have requested.

- b. Wetland and riparian rehabilitation specifications will be dependent on the final landform as the extraction project progresses, not the other way around. Detailed rehabilitation specifications will be determined during the preparation of each phase specific RLMP.

- c. Not applicable to ecological issues.
- d. The intention of the expansion project is to extract as much of the resource as possible, whilst minimising any potential adverse effects on adjoining properties. The remaining setback to the extraction lake will be rehabilitated by Hanson and, based on the results of geotechnical studies as well as experiences from the current sand extraction operation, will provide a minimum 10 m wide vegetated buffer around the perimeter of the subject site. It is not clear why BCD are requesting “minimum 20m, but preferably 50m, wide fully vegetated riparian areas”. There are no ecological values that need to be buffered by such large “riparian areas”. The intention of the rehabilitation works is primarily to stabilise the final landform.
- e. Greater plant community diversity can be added to the riparian rehabilitation scheme (i.e. in addition to PCT 1235) of each phase specific RLMP if necessary to satisfy BCD.
- f. The rehabilitation of wetland revegetated areas will occur where appropriate slopes allow and will be dependent on the final landform as the extraction project progresses. Detailed rehabilitation specifications will be determined during the preparation of each phase specific RLMP.
- g. The CRLMP includes the monitoring of a range of rehabilitation, biological and water quality performance measures in line with the approved RLMP for the currently operating sand extraction project. The requirement for “ongoing BAM plots to measure vegetation integrity (VI) and ensuring this is benchmarked to suitable ‘good condition’ PCT composition, structure and function condition scores” seems excessive considering the rehabilitation works are not required as part of, and are in fact additional to, any offset obligation.

Item 4

BCD Recommendation

The Concept RLMP and End Use Plan should allow for boundary fencing clearing, maintenance and vehicular access and a bike/jogging/walking track and these should be located outside the 20-50m wide fully vegetated riparian area.

JWA Response

The rehabilitation and proposed end use of the sand extraction project on privately owned land is concept in nature at this stage. Boundary fencing clearing, maintenance and vehicular access, bike/jogging/walking tracks etc., whether completed/installed or not, have no relevance to the assessment of biodiversity impacts or minimisation/mitigation measures of the project. As discussed previously, applicable statutory biodiversity offsets will be fully addressed in accordance with the requirements of the NSW Biodiversity Offset Strategy prior to each phase of the development. The proposed rehabilitation of the subject site is in addition to required biodiversity offset obligations and it is unclear why such prescriptive statements regarding these rehabilitation works have been included in the BCD correspondence.

Item 5

BCD Recommendation

‘Open Space’ areas must be separated from the ‘Riparian Rehabilitation’ areas as the riparian rehabilitation areas must be fully vegetated.

JWA Response

See response to Item 4 above.

Item 6

BCD Recommendation

Details regarding final lake form and geotechnical stability should be documented in the Concept RLMP and Final Use Plan to demonstrate that the proposed recreational and ecological objectives can be achieved.

JWA Response

The ecological objectives are that the final lake, in whatever form, is rehabilitated and is geotechnically stable. The recreational objectives, should public recreation opportunities eventuate for the site, are to allow the public access to what once was a highly degraded agricultural paddock and has been converted into a lake with surrounding vegetated/open space areas. It is not intended to form the lake to suit the proposed rehabilitation, rather the rehabilitation will respond to the final lake form.

Item 7

Not applicable to ecological issues.

Item 8

BCD Recommendation

The offsets for wetland community losses for PCT 1290 should be recalculated in the BAM_C as PCT 1808 is not a suitable match.

JWA Response

Since the preparation of the BCD correspondence (dated 3rd June 2022), the BDAR has been amended to reflect the update of the Integrated BioNet Vegetation Data (IBVD) released in December 2023 and associated revised NSW plant community type (PCT) classifications and state vegetation type map (SVTM). The Vegetation Zone on site previously allocated to PCT 1808 (Estuarine Reedland) has now been assigned to PCT 3963 (Estuarine reedland).

It is noted that these “wetland community losses for PCT 1290” do not amount to actual losses, but rather to the loss of areas within the margins of the existing Tweed Sand Plant (TSP)

operation and that are currently proposed to be rehabilitated to wetland vegetation at some future point in time in accordance with the applicable approved Rehabilitation and Landscape Management Plan (JWA 2021).

Monitoring of the past 16 years of natural regeneration/rehabilitation works on the subject site has identified that, due to the brackish nature of the lake, wetland vegetation is reflective of an estuarine/tidally influenced environment. PCT 3963 (Estuarine reedland) has been selected as the proposed future rehabilitation areas would likely have, and in some instances already have started to, naturally regenerate as reedland dominated by *Phragmites australis* accompanied by a lower layer of sedges and rushes, most often *Machaerina juncea* and/or *Juncus kraussii*, with a sparse cover of *Casuarina glauca*. This fits the description of PCT 3963 (Estuarine reedland) provided within the BioNet Vegetation Classification Database perfectly. The definition also states that “within the estuarine or marine-influenced environments, *Phragmites australis* grows where salinity is reduced by influx of freshwater through surface flow or seepage, occupying lagoon margins, permanent brackish pools, fringing tidal creeks, or waterlogged upper saltmarsh fringes”.

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

Yours faithfully,
JWA Pty Ltd



Adam McArthur
Director / Principal Ecologist