Public Authorities

Comment	Response	Where addressed
NRAR		
Thank you for contacting the Natural Resources Access Regulator. This is a pre-approval matter that needs to be sent to landuse.enquiries@dpi.nsw.gov.au to collate a combined response from both NRAR and DPIE Water.	We note the NRAR comments. These appear to be of a procedural nature and do not request specific information or raise specific issues. No response is required.	N/A
DPI Fisheries		
Hi James, As the subject is not within Key Fish Habitat, DPI Fisheries has no comments on the proposal.	We note the DPI Fisheries comments. No response is required.	N/A
Heritage NSW – Heritage Council of NSW		
In accordance with our previous correspondence dated 3 December 2019, the subject site is not listed on the State Heritage Register (SHR), nor is it in the immediate vicinity of any SHR items. Further, the site does not contain any known historical archaeological relics. Therefore, no further heritage comments are required. The Department does not need to refer subsequent stages of this proposal to the Heritage Council of NSW.	We note the Heritage NSW comments. No response is required.	N/A
Crown Lands		
Where Crown public roads are to provide access to the proposed development, Crown Lands will seek to transfer the road/s to the relevant authority in accordance with Crown Lands' policy.	We note the Crown Land comments. No response is required.	N/A
Heritage NSW – Aboriginal Cultural Heritage		
In preparing the following advice we have reviewed the following documents: • SEARs for SSD-10398, issued 17 December 2019 • Aboriginal Cultural Heritage Assessment Report (ACHAR) – prepared by Everick Heritage (Everick) Pty Ltd, da00 vbted 12 February 2021 • Environmental Impact Statement (EIS) SSD 10398 – Hansen Tweed Sand Plant Extension Phase 5 to 11 – prepared by Zone Planning Group Pty Ltd, dated 03 March 2021 Heritage NSW has reviewed the ACHAR prepared by Everick. It is noted that there is one site listed on the Aboriginal Heritage Information Management System (AHIMS) located within the EIS subject area. The site (AHIMS #04-2-0109) was subject to a Consent to Destroy permit (N99/CDS/2001) in 2001 and has been impacted by the construction of a dam. All areas of the EIS subject area were surveyed by a representative from Everick and representatives from the Tweed-Byron Local Aboriginal Land Council. No Aboriginal objects or areas of archaeological potential were identified. HNSW notes that the ACHAR does not meet the requirements of an Aboriginal Cultural Heritage Assessment in accordance with the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (2011). The archaeological investigation was completed in accordance with the Code of Practice for the Investigation of Aboriginal Objects in NSW (2010). The consultation undertaken with the Tweed-Byron Local Aboriginal Land Council does not satisfy the requirements of Aboriginal community consultation under the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010). However, this is not a requirement of the project SEARs. Based on the review of the ACHAR and the EIS the following advice is provided: • There are a number of restricted AHIMS sites within the extensive search parameters. Consultation with AHIMS should be demonstrated to ascertain if the proposed development would impact on these sites. HNSW also recommends that the consultation process may need to be expanded to ensure that Aboriginal cultural heritage values associated with the restricted sites are not impacted.	In response to the Heritage NSW comments, further consultation was undertaken with representatives of the Tweed Byron Local Aboriginal Land Council (TBLALC). This consultation was undertaken with the aim of demonstrating but no restricted sites were located within the project area. This consultation has revealed as follows: *None of the restricted sites are located within the area of the Hanson Sand Quarry. In fact, there has only ever been one site registered within the area of the quarry, which stands to reason as the historical geomorphology of the site is an ancient embayment and swamp land – hence the deep, clean sand deposits. The one site that was registered is now positioned in deep man-made dam.* *For further background: we were engaged for a major, two week sampling program over the proposed extension area during which, from recollection, about 20 or 30 x 3 cubic meter pits were dug and sieved. There was not a skerrick of ACH present. In fact, there was only one stone and one pebble, in the multiple tons of pure sand that was sampled. This work was undertaken under an AHIP with full engagement of RAPS. I'm told that the local Bundjalung name for the area (which I can't recall) means 'wet foot', which I take to confirm that it was originally a salty water swampy bog.* *Subject to anything explicitly to the contrary in any of the submissions received (which, of course, I have not seen), the Cultural Heritage Unit of the Tweed Byron Local Aboriginal Land Council does not consider any additional Aboriginal community consultation to be necessary.* A copy of the correspondence and spreadsheet identifying the location of the restricted site received from the TBLALC is included within this submission response	Attachment 1C – TBLALC Response Comments
DPI Agriculture		
DPI understands that DPIE is seeking advice with respect to matters it should consider in determining this Major Project. NSW DPI would like DPIE to note that the area is mapped as 'regionally significant farmland' under the Northern Rivers Farmland Protection Project.	We note the DPI Agriculture Crown Land comment. Importantly, precedent is not a consideration in the New South Wales planning system. each project or development application is to be assessed independently on its merits.	Attachment 1B – G&S Response Comments

Comment	Response	Where addressed
While the classification of 'regionally significant farmland' is given weight with respect to agricultural land being rezoned for urban or rural residential purposes, this proposal sets a precedent for development of a highly important agricultural resource that both the government and community have indicated should be protected for primary production purposes into the future.	The Agricultural Land Capability Assessment (ALCA) included in Appendix M of the EIS includes a review of the Northern Rivers Farmland Protection Program (NRFPP) mapping and its application to the subject site. We note that the majority of the site has been mapped as 'regionally significant farmland' based on its potential to support sugar cane production. A small portion of the site in the south is mapped as 'Other Rural Land'. Section 5.9 of the ALCA compares the NRFPP mapping to the soil conditions recorded on site, based on soil sampling undertaken for the TSP expansion proposal. The onsite assessment identified tenosols and podosols (Section 6.1.13 of the ALCA) on the subject land, indicating that the site does not meet the attributes of significant farmland as stated by the NRFPP program. The proposed expansion area is a low-lying coastal floodplain which is currently subject to tidal inflows from the Tweed River for part of the site. The predicted sea level rise in this area2 will, over time, exacerbate the tidal inundation and impede the site's drainage, leading to increased waterlogging and salinisation of soils. As time progresses the site (and indeed the adjacent land uses on the same landform) will degrade further with a consequent reduced capacity to support agricultural production, including sugar cane.	
Regional NSW – Mining, Exploration & Geoscience		
MEG has reviewed the Environmental Impact Statement for the above matter and has no concerns with the proposed expansion. MEG collects data on the quantity of construction materials produced annually throughout the State. Forms are sent to all operating quarries at the end of each financial year for this purpose. The statistical data collected is of great value to government and industry in planning and resource management, particularly as a basis for analysing trends in production and for estimating future demand for particular commodities or in particular regions. Production data may be published in aggregated form, however production data for individual operations is kept strictly confidential. MEG requests that the proponent be required to provide annual production data for the site as a condition of any new or amended development consent.	We note the Regional NSW – Mining, Exploration & Geoscience comment. No response is required.	N/A

Transport for New South Wales		
Attachment A - Technical Comments For context, this attachment must be read with TfNSW response of 27 May 2021 to SSD 10398. TfNSW has reviewed the Environmental Impact Statement and all relevant annexures and provides the following comment to assist the Department and the Applicant in progressing the application: Traffic Impact Assessment 1. The TIA identifies four access options that were discussed with TfNSW during a pre-lodgement consultation. The applicant was advised that 'further refinement of the access option and supporting information is required to inform any RMS decision'. The need for access to TfNSW owned land and related licences and consents to access the interchange were also identified. TfNSW notes that the access options included in the EIS remain unchanged since pre-lodgement and that no further TfNSW comment was requested during preparation of the EIS. Consequently, TfNSW was unable to confirm acceptance of a final strategic option prior to lodgement of the EIS. The level of detail provided in the EIS and supporting technical assessments is insufficient to inform TfNSW acceptance within the assessment timeframes of the SSD process. The TIA did not include a Road Safety Assessment of the proposed merge and diverge arrangement under the Applicants preferred access arrangement. The TIA makes reference to no Road Safety Audit being required for locations outside of the interchange and overlooks the need to consider the safety of the proposed access design. TfNSW is not satisfied that the applicant's preferred Option 4 will operate safely and efficiently. It is considered likely that heavy vehicles merging into the off-ramp will find it difficult to regulate speed and will be reliant on through traffic making adjustments to accommodate entering trucks. This presents a safety risk and is contrary to the function of the off-ramp. TfNSW requests that further consideration be given to alternative options for access to the proposed development in consultation with TfNSW	TfNSW comments are noted. In response the proponent has undertaken extensive further consultation with TfNSW and have as a result altered the proposed access arrangement. The access to the Tweed Valley Way / M1 Interchange is now proposed as a roundabout rather than a merging slip lane.	Attachment 6 – Revised Appendix J – Traffic Impact Assessment
2. The TIA makes no reference to the relevant guidance for considering the access to a Freeway or interchange. TfNSW highlights Section 17.1.1 of the Austroads Guide to Road Design Part 4C: Interchanges (2015), which states that; No private access should be allowed to the main carriageways or ramps of a Freeway. The only exception is privately owned generators such as service centres. Access control on freeways provides the greatest single benefit to road safety on these high-speed facilities. This is further reinforced in Section 7.6.4 of the Austroads Guide to Traffic Management Part 6 (2020), which states that; A special case may exist where a road network or major service centre requires access and there is no alternative but to intersect the ramp alignment. In such cases, access should only be permitted through a roundabout or signalised intersection that effectively becomes the ramp terminal. TfNSW notes that the Applicant's investigated Option 3 only considered the benefits of a roundabout located on the existing alignment and it is unclear if investigation was undertaken to consider the benefits of offsetting a roundabout further to the south-east to increase separation from the Freeway ramps and overpass. Whilst it is acknowledged this would require the acquisition and dedication of land by the Applicant, it would achieve an appropriate interchange form as identified in Section 7.5.3 of the Austroads Guide to Traffic Management Part 6. As per the RMS feedback, a roundabout lowers the speed of all vehicles to accommodate the entry speed of trucks. Further consideration should be given to the benefits of a suitably designed and located roundabout, which may enable TfNSW to support access to the proposed development.	TfNSW comments are noted. In response the proponent has undertaken extensive further consultation with TfNSW and have as a result altered the proposed access arrangement. The access to the Tweed Valley Way / M1 Interchange is now proposed as a roundabout rather than a merging slip lane.	Attachment 6 – Revised Appendix J – Traffic Impact Assessment

3. The TIA includes analysis of heavy vehicle acceleration for trucks entering the interchange. Our Freight team has observed that larger vehicle combinations have been used by Hanson operations elsewhere. Given direct access is proposed to an interchange, it is requested that the Applicant confirm the expected vehicle combinations requiring access to the site. Any further analysis required to reflect larger combination vehicles should be provided. In particular, TfNSW Freight Branch have requested the applicant confirm if a PBS 3 axle truck and 5 axle (Quin Dog) will potentially access the site and the implications this will have for identified acceleration distances. Additionally, the proponent is requested to review the TIA and confirm whether the small survey numbers in Table 6.5 should be the basis of calculating Table 6.7. It is recommended the Consent Authority consider limiting access to those heavy vehicle combinations demonstrated by the TIA as being suitable to access the site, and to identify a process for the submission of further analysis and assessment to justify access for larger combination vehicles prior to such vehicles accessing the site over the operational life of the development.	The Traffic Impact Assessment has identified the maximum size of vehicle that the proponent would operate as part of site operations. The applicant has no objection to a condition of consent limiting the size of vehicle consistent with the Traffic Impact Assessment.	Attachment 6 – Revised Appendix J – Traffic Impact Assessment
4. The TIA does not include a sensitivity analysis of development impacts during seasonal peak periods. The Roads and Maritime Comments provide in our tabled response to the pre-lodgement meeting of 23 September 2019 identified the need to demonstrate development performance under Hundredth Highest Hour Volumes, as the relevant parameter for interchange performance. Prior to any further sensitivity analysis, it is recommended that the Applicant's Traffic Consultant contact TfNSW to seek acceptance of the input parameters, including any growth rate applied to the Pacific Motorway interchange.	The Traffic Impact Assessment has been updated to include the sensitivity analysis as requested. See attached amended Traffic Impact Assessment.	Attachment 6 – Revised Appendix J – Traffic Impact Assessment
5. TfNSW notes the Operational Traffic Management Plan (OTMP) for the previously approved development attached to the TIA and the proposal to update this document to address the proposed development. TfNSW notes that the RMS comment included in the TIA with respect to that OTMP is not directly relevant to the development proposed under the current SSDA. TfNSW recommends that a new Operational Traffic Management Plan (OTMP), inclusive of a Driver Code of Conduct (CoC) and consistent with the Consent Authorities typical format for SSD, be a requirement of any project approval. The document should be prepared in consultation with the relevant Road Authorities and approved by the Consent Authority prior to the commencement of vehicle movements associated with the major project.	We note the TfNSW comments. No response is required. The applicant has no objection to a condition of consent requiring an Operational Traffic Management Plan to be prepared.	N/A.
Geotechnical Report 6. The EIS proposes the extraction of material to a depth of 20m below ground level and within 10m of the project site boundaries. Appendix A13 identifies that the phases 8 and 13 of extraction will be in the vicinity of the Pacific Motorway interchange. TfNSW has concerns regarding the proposed depth and proximity of extraction to the Motorway and the resulting implications for future planning and State infrastructure. TfNSW is seeking internal geotechnical advice and will further advise the Consent Authority of an appropriate setback from the Freeway corridor to ensure the final arrangement is safe, secure and stable. Our interim request is that the Consent Authority impose a hard setback of 40m from the Freeway corridor boundary.	An increase of the buffer width to Pacific Highway Road Reserve (excluding that part adjacent the offramp) has been incorporated. The buffer to the Pacific Highway Road Reserve is now 50m. The buffer to the part of the road reserve that contains the off ramp remains at 10m.	Attachment 9 – Revised Appendix A14 – Site Layout Plans
Flooding 7. TfNSW requests that the Consent Authority ensure that the Flood & Stormwater Assessment provide in Appendix D1 of the EIS is consistent with Council's Flood Plain modelling for the subject area. The Consent Authority should be satisfied that appropriate mitigation measures are adopted to ensure the proposed development does not generate an additional flood risk to the Pacific Motorway in this locality.	We note the TfNSW comments. No response is required.	N/A
Dust	The proposal includes a number of measures to control dust including the proposed sealing of all internal haulage roads and other dust controls measures as outlined in the	Attachment 3 – Revised Appendix G - Air Quality Assessment

8. The Consent Authority should consider the potential for operations within the site to direct dust towards the Pacific Motorway. Consideration should be given to the sealing of internal access roads or other suitable management measures to mitigate the impact of any dust generated by the development.	Air Quality Assessment	
Additional request originating through ongoing discussion	During the consultation with TfNSW that was undertaken follow receipt of the submissions, an additional request to provide a Haulage Route Economic Analysis was received. The requested Haulage Route Economic Analysis has been prepared and is included within Appendix F of the Traffic Impact Assessment.	Attachment 6 – Revised Appendix J – Traffic Impact Assessment
Environment Protection Authority		
Air The EIS states that: • air quality criterion will be achieved in practice through a proactive and reactive management strategy, whereby, watering will be increased and/or certain operations will cease during periods of elevated dust risk. • Real time PM10 monitoring is to be implemented on-site. • An air quality monitoring program will continue to operate if the expansion is approved	We note the EPA comments. No response is required.	N/A
Noise <u>Operational Noise Assessment</u> EPA notes that the site is currently operating in Phase 4 and is proposing to move to the next phases of Phase 5 to Phase 11 over a 30-year period. The existing approved hours of operation in Environment Protection Licence (EPL) 11453 are 7am to 5pm Monday to Friday and 7am to 4pm Saturday, with loading and dispatch of trucks from 7am to 5pm Monday to Friday, and 7am to 12pm Saturday. It is proposed to change operation hours to 24 hours 7 days a week. The existing EPL daytime noise limit is 40 dBA at any sensitive receiver. Background noise levels – • The NIA does not mention the existing daytime noise limit in EPL 11453. The NIA includes details of long term background noise monitoring that was undertaken to determine Project Noise Trigger Levels for the proposed expansion (which for the daytime are up to 2 dBA higher than the existing noise limit at the nearest receivers and up to 6 dBA higher at the receivers in close proximity to the Pacific Highway). • EPA is concerned about the proposed night time operations and the potential for noise impact during this sensitive time. The area around the site is rural in nature, with numerous elevated residences and the village of Cudgen nearby. • The noise monitoring graphs in Appendix E of the NIA appear to show some influence from extraneous noise that keeps the levels elevated, particularly during the night time. It is stated in the NIA that the background noise levels were influenced by insects (Section 2.3 and under Table 3.1). • It is also stated in Table 2.1 that the site was operating during the noise monitoring, but that the days when dredging occurred were excluded from the background noise level calculation. Table 2.1 also states "Product loading was still carried out on these days but had negligible contribution to the measured background noise at Locations 1 and 2." It is not clear in the NIA how this was determined. The NIA should include more detail and justification that the measured and calculated background noise levels are representative of all seasons and are not influenced by existing site noise, insect noise or other extraneous noise, in accordance with the Noise Policy for Industry (EPA, 2017). Predicted noise levels – • The sound power level of the dredge between Option 1 (existing dredge) and Option 5	A revised operational noise impact assessment and construction noise assessment have been prepared addressing these items. The project's Acoustic Engineer, ATP Consulting Engineers have provided commentary against these items within the revised reports.	Attachment 15 – Revised Appendix F1 – Operational Noise Impact Assessment Attachment 16 – Revised Appendix F2 - Construction Noise Assessment

(dredge 3), as shown in Table 5.2, needs to reduce by 20 dBA in order to achieve the Project Noise Trigger Levels (PNTLs). EPA is not clear whether this level of noise attenuation is possible for a dredge. • The predicted noise levels, in Section 4.3, during the evening and night are higher than daytime. It is not clear from the scenarios what is proposed to operate during the evening and night that is different to the daytime. • The Noise Monitoring Report September 2020 (available on the Hanson website, Appendix 12 of the Annual Environmental Management Report 2019-2020) indicates a noise contribution from existing operations at the site of 43 dBA at the nearest residential receivers. The predicted noise level for Phase 5 at the same receivers (535C and 543 Cudgen Road) is 37 and 38 dBA. It is not clear how the operation changes to bring about a 5-6 dBA reduction in noise level from the existing operations to the next phase. The NIA should: - provide confirmation that the required 20 dBA noise attenuation for the dredge is practical and achievable. - clarify the proposed operations during different time periods to explain the increase in predicted noise level during the more sensitive evening and night period. - provide a detailed explanation for the 5-6 dBA reduction in noise level from the existing operation (Phase 4) to the proposed Phase 5. <u>Construction noise assessment</u> The construction noise management levels (NMLs) in Table 3.2 are not correct. The NMLs for outside standard hours are RBL + 5 dBA, not RBL + 10 dBA as stated in the table. Nonetheless it appears that construction is proposed to be conducted during standard hours only, so this is just for noting.		
Soil and Water <u>Groundwater</u> • Localised and minor changes to pre-development groundwater flow regimes will occur in the vicinity of the extraction lakes, within and external to the development footprint. • Changes to groundwater elevation within and external to the development footprint including: up to 0.3m decrease outside the northern perimeter of Lot 51 DP1166990 (northern portion of expansion area); 0.5m decrease outside the site boundary to the west of Lot 1 DP1250570 (southern portion of expansion area); 0.5m decrease within the Low Potential GDE on the southern boundary west of Lot 1 DP1250570. • Minor changes in the local hydraulic regime are caused by a loss in conveyance storage. <u>Surface Water</u> • The EIS discusses discharges from the southern lake and proposed northern lake. Discharge/monitoring points would need to be incorporated into any Environment Protection Licence for both lakes. *Summary* Appendix B – Surface Water Assessment & Appendix C – Ground Water Assessment both mention surface and ground water monitoring being conducted over a seven month period across the proposed expansion area to establish baseline conditions and determine similarities and differences between the expansion and current TSP site. The establishment of baseline conditions is essential for the proposed expansion area. The EPA recommends that if the expansion is approved that baseline monitoring for both surface and ground water across the full expansion area continue on an ongoing basis (taking into account seasonal variability) from Phase 5 onwards. As with the existing EPL, groundwater and surface water monitoring will be required and expanded to the proposed areas if approved formalised through a specific licence condition(s). <u>Acid sulfate soils (ASS)</u> The EIS states that:	We note the EPA comments. No response is required. The requirement to undertake ongoing monitoring in the expansion area could reasonably form a condition of approval and it is noted that the existing EPL would necessarily include updated conditions to reflect additional monitoring requirements across the expansion area. We note the EPA comments. No response is required. It is proposed that ASS management be undertaken in accordance with the provisions of the Soil and Water	Attachment 1B – G&S Response Comments

• the existing approach to ASS Management will also be adopted for operations within the proposed expansion area. • The Potential ASS fines from the extracted sand are returned to the dredge lake to a deposition depth of at least 8 metres, via a hydraulic separation and fines reinternment methodology. As with the existing EPL the assessment and management of ASS and PASS will be formalised through a specific licence condition(s). <u>Erosion and Sediment Control Plan (ESCP)</u> *Management of sand extraction* The Erosion and Sediment Control Plan (ESCP) states that HTSP must provide calendar year annual production data to the DPIE Division of Natural Resources and Geosciences, and include a copy of the form in the HTSP Annual Review. As with the existing EPL the volume of: material extracted; and, extracted material transported, from the quarry will be formalised through a specific licence condition(s). *Release of surface waters* The EPA notes the detail re rainfall events that may require release of surface waters outside of EPL licence conditions. <u>Waste Management</u> The EPA notes from the EIS that no additional waste streams or generating activities would be introduced than already exists. <u>Contaminated Lands</u> A number of potentially contaminating activities/potential contaminants have been identified with the site through a Preliminary Site Investigation (Appendix L – Preliminary Site Investigation). Detailed investigations will need to be undertaken, and a Remediation Action Plan (RAP) prepared for a staged approach to investigation and remediation.	Management Plan included as Appendix K of the EIS. It is also noted that ASS management/monitoring provisions would form part of the Environment Protection Licence issued for the expansion proposal. We note the EPA comments. No response is required. We note the EPA comments. No response is required. We note the EPA comments. No response is required. We note the EPA comments. No response is required. This approach aligns with the proposed approach contained in the Preliminary Site Investigation (Appendix L of the EIS) and the relevant provisions of SEPP 55 described in the G&S Submission Response Letter.	
Material Import The EPA notes from the EIS that the project would import 60,000 tonnes per annum of Virgin Excavated Material (VENM) including rock. HTSP need to ensure that any material (e.g. VENM) received on-site has been classified/certified accordingly (including testing requirements). VENM is defined in the Protection of the Environment Operations Act 1997 (POEO). For example, Potential Acid Sulfate Soil (PASS) is a waste as per the waste classification guidelines. If this HTSP was processing or storing this material on site exceeding those volumes in Schedule 1 of the POEO at any one time the activity would require an EPL for waste processing.	We note the EPA comments. No response is required. The importation of any materials would comply with the relevant Resource Recovery Orders and Exemptions. No ASS materials would be imported onto the site or disposed of offsite and thus there is no requirement for an EPL for waste processing.	Attachment 1B – G&S Response Comments
NRAR / DPIE Water (Water Group)		
1.0 Water Take and Licensing **1.1 Groundwater** **1.1.1 Pre-approval Recommendations** a) define the licensable take of water consistent with that described in the NSW Aquifer Interference Policy (AIP) (2012) and provide a strategy to obtain the entitlement.	Gilbert & Sutherland have undertaken detail review of these request items and prepared three addendum reports, comprising 'Supplementary Groundwater Model Report', 'Supplementary Water Quality Report – Minimal Impact Considerations' and 'Revised Water Balance Modelling' Gilbert and Sutherland have also provided written response to the information request items.	Attachment 1B – G&S Response Comments Attachment 12 - Supplementary Water Quality Report – Minimal Impact Considerations Attachment 13 - Supplementary Groundwater Model Report Attachment 14 – Supplementary Water Balance Modelling Report

1.2 Surface Water 1.2.1 Pre-approval recommendations a) quantify the annual volume of surface water take due to runoff from external catchments 2 and 3 for a range of climatic scenarios (wet, average and dry), b) quantify the annual volume of surface water take due to flood events that result in water entering the lakes and water being captured above the standing water level of the lake, and c) demonstrate sufficient entitlement can be acquired in the relevant water source to account for the maximum take. If insufficient entitlement cannot be acquired it is recommended that the proponent consider: i. alternate layouts to enable runoff water to be diverted around the site, either with diversions and/or with dams constructed under the harvestable rights of catchments 2 and 3, and ii. redesign of the lakes outlet system to enable them to be detention basins during a flood event and that any water captured can be released immediately after.	Gilbert & Sutherland have undertaken detail review of these request items and prepared three addendum reports, comprising 'Supplementary Groundwater Model Report', 'Supplementary Water Quality Report – Minimal Impact Considerations' and 'Revised Water Balance Modelling' Gilbert and Sutherland have also provided written response to the information request items.	Attachment 1B – G&S Response Comments Attachment 12 - Supplementary Water Quality Report – Minimal Impact Considerations Attachment 13 - Supplementary Groundwater Model Report Attachment 14 – Supplementary Water Balance Modelling Report
1.2.3 Post approval Recommendations The proponent must ensure: a) sufficient water entitlement is held in a Water Access Licence/s (WAL) to account for the maximum predicted take for each water source prior to take occurring, and b) that relevant nomination of work dealing applications for WALs proposed to account for water take by the project have been completed prior to the water take occurring.	We note the DPIE water comments. No response is required. The applicant raises no issue with this post approval recommendation being applied as a condition of consent.	N/A
2.0 Groundwater Model 2.1 Pre-approval recommendations The proponent should: a) prepare a supplementary groundwater model report detailing how the model addresses requirements set out in the Australian Groundwater Modelling Guidelines (2012), OR b) submit an independent review of the groundwater model that reports adherence with Australian Groundwater Modelling Guidelines (2012) requirements and advise if the independent expert's opinion is that the model is considered 'fit for purpose.	Gilbert & Sutherland have undertaken detail review of these request items and prepared three addendum reports, comprising 'Supplementary Groundwater Model Report', 'Supplementary Water Quality Report – Minimal Impact Considerations' and 'Revised Water Balance Modelling'. Gilbert and Sutherland have also provided written response to the information request items.	Attachment 1B – G&S Response Comments Attachment 12 - Supplementary Water Quality Report – Minimal Impact Considerations Attachment 13 - Supplementary Groundwater Model Report Attachment 14 – Supplementary Water Balance Modelling Report
3.0 Minimal Impact Considerations 3.1 Pre-approval Recommendations The proponent should: a) present a supplementary report addressing the 'minimal impact considerations' of the NSW Aquifer Interference Policy (2012) with consideration of all high priority GDEs, DPIE Water's observation on salinity and iron concentrations and potential impacts, b) analyse and report on lake salinity risks post closure, c) quantify the risk of water quality changes and their impact on GDEs, including the increase in soluble iron. As an approval condition, DPIE Water recommends DPIE P&A request a security bond for where groundwater restorative actions do not achieve effective remediation of the State's asset.	Gilbert & Sutherland have undertaken detail review of these request items and prepared an 'Supplementary Water Quality Report – Minimal Impact Considerations'. Gilbert and Sutherland have also provided written response to the information request items.	Attachment 1B – G&S Response Comments Attachment 12 - Supplementary Water Quality Report – Minimal Impact Considerations
4.0 Monitoring and Management		

4.1 Post Approval Recommendations The proponent should a) accurately meter and monitor water take from surface and groundwater sources with ongoing review of actual versus modelled predictions. This will be a key component to confirm impact predictions, the adequacy of mitigating measures and compliance for water take, b) Update the Soil and Water Management Plan to reflect monitoring, metering and management measures to report on groundwater and surface water take and potential impacts to water sources due to the activity, c) report on water take at the site each year (direct and indirect) in the Annual Review. This is to include water take where a water licence is required and where an exemption applies. Where a water licence is required the water take needs to be reviewed against existing water licences, and d) comply with the rules of the relevant water sharing plans.	We note the DPIE water comments. No response is required. The applicant raises no issue with this post approval recommendation being applied as a condition of consent.	N/A
Tweed Shire Council		
<u>1. Flooding</u> An assessment has been undertaken against the proposed SSD with specific reference to the proponent's Flooding and Stormwater Assessment (FSA). Significant flooding concerns are raised, as discussed below. The following flood levels apply to the site: • Site Ground Levels (average) = RL ~1m AHD • Design Flood Level (1% AEP) = RL 3.3m AHD • PMF Level = RL 8.3m AHD	We note Tweed Shire Council comment. No response is required.	N/A
<u>1.1 High Flow Areas</u> The majority of the site is classified as 'low flow' area. The exception to this is a small area in the south-west corner around the Pacific Motorway culvert/bridge (shown in red in Figure 1 below). In this area existing ground levels are as low as RL 0.5m AHD. The proponent's FSA suggests that the proposed lake is to be bunded to RL 1.3m AHD. This will result in a bund approximately 0.8m high being placed directly downstream of the highway culverts. It should be noted this is a flow path of critical importance. It is the primary access to the wider Chinderah/Kingscliff flood storage. Any obstruction to flow here is likely to have significant impacts upstream. The proponent's flood impact assessment does <u>not</u> include the bunding of 'Lake 2' to RL 1.3m AHD. The FSA states that: *The proposed bunding at RL 1.3 m AHD has NOT been included as it is considered negligible due to its low level compared to the overall flood levels experienced at the site.* Council does not agree with the above statement. Whilst this may be valid for some areas of the proposed lake expansion (where existing topography is already around RL 1.3m AHD) it is not true of the critical high flow area adjacent to the Pacific Motorway culvert/bridge. An 800mm high bund in this area is likely to pose a significant barrier to flood waters entering the Chinderah/Kingscliff storage area and therefore have significant afflux upstream. It should be noted that DCP-A3 only permits changes to ground levels up to 300mm in high flow areas (for local drainage purposes). In this case, given the critical nature of the flow path, 300mm would not be automatically considered permissible and this would be subject to detailed flood modelling (with bunding included). Any significant bunding in this area is contrary to DCP-A3 and unlikely to be supported. **This is a significant constraint for the proposal that has not been addressed and may have substantial implications as the ability to bund the lake to RL 1.3m AHD may not be possible.** Refer to request for further information below (Item 8.1).	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment. In summary, bunding has been removed from the proposal.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment

1.2 Emergency Response Provisions The proposal does not include any habitable land uses. Therefore the Emergency Response Provisions (evacuation) of DCP-A3 do not apply. Nevertheless, the SEARs included similar assessment requirements and the proponent has adopted DCP-A3's framework and submitted a Flood Response Assessment Plan (FRAP). The FRAP identifies an evacuation approach to risk management, which is considered appropriate. It goes on to identify various flood action plan type measures, which is beyond the intended scope of a FRAP. The FRAP is noted.	We note the Tweed Shire Council comment. No response is required.	N/A
1.3 Time of Inundation The FSA does not include any analysis of any changes in the time of inundation due to the proposal. This is particularly relevant to nearby agriculture and development/environmental areas. Prolonged inundation can kill crops, increase nuisance and change environmental values. The proposal will have significant changes to the low-flow drainage regime of the area and therefore may effect time of inundation of surrounding floodplain areas. Refer to request for further information below (Item 8.1).	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
1.4 Reduction in Peak Flood Levels for Minor Events The FSA reports modelling results that predict: *For events lower than the 1% AEP, the development improves flooding in the area due to a large gain in flood storage.* Whilst the starting water level (at beginning of regional flood modelling event) for each model run is not explicitly stated in the FSA, section 4.7 suggests that the consultant may have adopted the dry weather standing (ground) water level. *Flood storage calculations taken from the DFL (3.23 m AHD) to the standing water level at site (0.3 m AHD).* The 2 x lakes are proposed to be bunded with overflow weirs at RL 1.0m AHD. Flooding in the Tweed Valley generally follows multiple days of heavy rain. A few hundred millimetres of rain falling over these bunded lakes in the lead up to a flood event would significantly reduce the 'large gain in flood storage'. These antecedent conditions are generally not included in flood model design event runs. Therefore, depending on the assumptions input to the model, the predicted improvements in flooding for events lower than 1% AEP may be invalid. The starting water levels and/or antecedent condition assumptions used for the flood assessment should be clarified to verify the validity of these predictions. Refer to request for further information below (Item 8.1).	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
1.5 Cumulative Development Scenario The proponent was advised at a pre-lodgement meeting with Council that *"…the development must be assessed on an individual and cumulative development basis, consistent with the Tweed Valley Flood Study and Tweed Valley Floodplain Risk Management Study and Plan".* They were also advised that *"…Given other significant floodplain developments in the West Kingscliff catchment, modelling of a cumulative development scenario for the 1% AEP and 1% climate change events is warranted. This includes expansion of the aquaculture farm, and sand mining and subdivision development by Gales Holdings. Gales Holdings is advancing their masterplanning and it is strongly advised that Hanson consults and consolidates the current technical studies if possible".* Section 4.6 of the FSA notes (part of) the Gales Kingscliff developments (Lot 21) but does not provide any further, cumulative analysis. This is not considered to be acceptable. The proposal's impact on flooding in the area cannot be considered in isolation only. If co-operation from Gales Holdings, and their consultants, is not forthcoming the proponent can adopt the Tweed Valley Floodplain Risk Management Study 2014 cumulative development scenario and consult with Council to ensure any change since 2014 are included. A cumulative development scenario must be assessed otherwise the Flood Impact Assessment is not complete. Refer to request for further information below (Item 8.1).	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment

1.6 Acceptable Afflux Claims The FSA repeatedly claims that afflux as a result of the proposal *"…is within the allowable limits as set by the Tweed Council"*. It should be noted that these thresholds were adopted for the Tweed Valley Floodplain Risk Management Study **cumulative** development scenario which included all anticipated fill/development of the floodplain. They are not applicable to an individual development assessment and should not be deemed an acceptable target in isolation. Refer to request for further information below (Item 8.1).	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
1.7 PMF Afflux Results The FSA makes a general conclusion: *The proposed lakes do allow flood waters to be conveyed across them with less resistance than the existing farm paddocks, creating a marginal change to the level of flooding in some areas of the model domain. This is specifically notable in extreme events including the 0.2% AEP and above events.* However, the PMF afflux maps depict the opposite result. A widespread reduction in peak water level to the east of the site and an area of increase to the south-east. This is inconsistent with the above commentary and the reason for it has not been explained. Refer to request for further information below (Item 8.1).	This item is addressed under Item 8.1 of the Tweed Shire Council comments. No response required.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
2. Stormwater Similarly, an assessment of the proposed expansion has been undertaken with regard to stormwater, noting the following concerns. 2.1 Predicted Afflux The FSA analyses local stormwater flooding and concludes that: *It is shown from the local flood assessment an increase in water level outside the allowable increase for rural properties (100mm) is anticipated at interrogation locations B, D, E and F in various events.* *An increase in flooding is due to loss in conveyance area caused by the proposed lake bunds.* It then goes on to claim that, as local stormwater peak flood levels are far lower than the regional peak flood levels, this is acceptable. It is considered that this is an over simplification of the problem. It is not acceptable to dismiss increases in local stormwater flooding simply because regional flooding is worse. Local drainage efficiency and time of inundation is important for the nearby agricultural land uses, for the viability of nearby development areas and for the ecology of environmental areas. The proponent has not demonstrated that the increases in local stormwater flooding are acceptable. Refer to request for further information below (Item 8.1).	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
2.2 Drain Upgrades It is noted that FSA Appendix C contains a map that outlines various drainage channel realignments. The document states that: *If during the operation of the sand plant, channels are required to be reformed or realigned, required channel sizing has been indicated in Appendix C.* The document then goes on to state: *No channel upgrades are proposed under this EIS submission. Pre-development channel sizing is matched in the proposed scenario and generally catchment areas draining to the channels have been maintained.* Further clarification is required in this regard. It appears the FSA local stormwater results conclude that local stormwater afflux is not acceptable, suggests drain upgrades to offset these impacts, but then declines to include them in the proposal. Refer to request for further information below	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment

(Item 8.1).		
2.3 Time of Inundation As per the abovementioned flood comments, the FSA does not include any analysis of any changes in the time of inundation due to the proposal. The changes to the southern drain result in a longer flow path for low flow drainage to take to reach the outlet. The stormwater analysis should include consideration of low flow drainage and time of inundation. Refer to request for further information below (Item 8.1).	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
2.4 Flow from Eastern Catchments Through direct experience and various assessments of development proposals east of the subject site it has been generally accepted that the Altona Road and Julius drains can flow in both directions depending on tail water levels, rainfall distribution and storage stages. The FSA selects a catchment divide that routes stormwater from the east of the site to the north. A sensitivity analysis should be considered where a suitable catchment east of the site are routed to the west, through and around the subject site. Refer to request for further information below (Item 8.1).	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
2.5 Peak Discharges The FSA predicts significant increases in peak stormwater discharge at the catchment outlets in more frequent events (refer to tables 3.3 and 3.4). However, no justification as to why this is acceptable is provided by the proponent. It should be noted that, for natural (unsealed) drains, peak discharge increases in frequent events can be related to erosion and associated environmental problems. Avoiding these is the objective of the waterway stability control in Development Design Specification D7 – Stormwater Quality. The proponent should either provide justification as to why these increases will not have any detrimental impact or propose mitigation measures. Refer to request for further information below (Item 8.1).	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
3. Ecology An assessment has been undertaken against the proposed expansion of the Hanson Sand Plant, raising concerns with the proposed layout and Biodiversity Development Assessment Report (BDAR), Koala Habitat Protection, Rehabilitation and final land use, as noted below. 3.1 Proposed layout and Biodiversity Development Assessment Report (BDAR)	The projects ecological consultant has reviewed the Tweed Shire Council ecological comments and has provided written response and as part of addressing comment from other public authorities has revised the Draft BDAR and Concept Rehabilitation & Landscape Management Plan. The project's ecologist has also prepared a written response to Tweed Shire Councils comment.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments Attachment 4 – Revised Appendix H1 - BDAR Attachment 5 – Appendix H2 – Concept Rehabilitation & Landscape Management Plan

• The proposed development layout design fails to satisfy the avoid and minimise provisions set out in Section 7.2 of the Biodiversity Assessment Method 2020 prepared under the Biodiversity Conservation Act 2016 resulting in a direct loss of 3.66 ha of remnant mapped vegetation; • The proposed development layout design fails to satisfy the avoid and minimise provisions set out in the Tweed Development Control Plan Section A19 Biodiversity & Habitat Management resulting in a direct loss of 3.66 ha of remnant mapped vegetation and likely indirect habitat impact by virtue of inadequate ecological setbacks to red flagged values. Opportunities to retain existing vegetation and provide buffers (of minimum 30m width) are highlighted in Figures 2 and 3 below. It is noted that 50m buffers to sensitive high value, poorly represented coastal values is considered appropriate and achievable given the scale of the proposal; • Onsite offsetting to minimise local residual impacts has not been proposed • Further survey should be undertaken for Koala (Phascolarctos cinereus) given the presence of preferred habitat; • Limited impact assessment has been undertaken with respect Groundwater Dependent Ecosystems; • Assessment with the Scientific Determination for Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions has not been provided. In order to be satisfied that the mapped Vegetation Zone 4 does not qualify as an Endangered Ecological Community listed under the BC Act detailed evaluation should be provided; • An assessment should be made with respect to Vegetation Zone 1 and 2, having regard for the Conservation Advice - Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community listed under Environment Protection & Biodiversity Conservation Act 1999; • The proposed layout affects areas identified for rehabilitation as shown in the Revised Rehabilitation and Landscape Management Plan Tweed Sand Plant prepared by JWA Pty Ltd March 2019 under the current extraction approval. See Figure 4 below.		
3.2 Koala Habitat Protection The proposal fails to address the provisions of the Tweed Coast Comprehensive Koala Plan of Management March 2020. By virtue the proposal in its current form is not considered to satisfy the aims of the Tweed Local Environmental Plan 2014.	The projects ecological consultant has reviewed the Tweed Shire Council ecological comments and has provided written response and as part of addressing comment from other public authorities has revised the Draft BDAR and Concept Rehabilitation & Landscape Management Plan. The project's ecologist has also prepared a written response to Tweed Shire Councils comment.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments Attachment 4 – Revised Appendix H1 - BDAR Attachment 5 – Appendix H2 – Concept Rehabilitation & Landscape Management Plan

<table>
<tr>
<td>3.3 Concept Rehabilitation and Landscape Management Plan

The following concerns are raised in relation to the proposed rehabilitation and landscape works as outlined in the Concept Rehabilitation & Landscape Management Plan dated March 2021 prepared by JWA Ecological Consultants.

• Rehabilitation areas appear inadequate in width (up to 10m) to act as effective buffers to existing ecological values on and adjacent to the subject site;
• The rehabilitation plan fails to capture significant areas of existing vegetation;
• Given the scale of the development, commitment of a maximum of 5 years to the maintenance of habitat restoration areas is considered insufficient;
• Proposed planting densities are considered inadequate to successfully achieve site capture within the specified timeframes;
• Species selection is depauperate and should include a greater diversity of local native plant species for each stratum;
• Maintenance rotations of once every six (6) months is considered inadequate to successfully achieve site capture within the specified timeframes;
• Open Space Areas detailed in 2.7.3.4 are not identified on Figure 4 Concept RLMP Phasing.</td>
<td>The projects ecological consultant has reviewed the Tweed Shire Council ecological comments and has provided written response and as part of addressing comment from other public authorities has revised the Draft BDAR and Concept Rehabilitation & Landscape Management Plan.

The project's ecologist has also prepared a written response to Tweed Shire Councils comment.</td>
<td>Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments

Attachment 4 – Revised Appendix H1 - BDAR

Attachment 5 – Appendix H2 – Concept Rehabilitation & Landscape Management Plan</td>
</tr>
<tr>
<td>3.4 Final land-use

Details of the final land use post extraction remain vague. The EIS reflects the following:

Hanson would retain ownership of the site following completion of sand extraction and any proposed subsequent use of the site would be decided via the appropriate consultative, application and regulatory processes in place at that time.

Long term management and protection arrangements of ecological values and associated buffer zones should be determined during the assessment stage of the proposal.</td>
<td>As outlined within the EIS, Hanson would retain ownership of the site following completion of sand extraction and any proposed subsequent use of the site would be decided via the appropriate consultative, application and regulatory processes in place at that time.

It is also outline that to ensure the broadest range of potential use options would be available upon completion of sand extraction, the project proposes to achieve several performance criteria as summarised below.

<table>
<tr><th>FEATURE</th><th>OBJECTIVE</th></tr>
<tr><td>All areas of the site affected by the development</td><td>• Safe
• Hydraulically and geotechnically stable, including the dredge pond margins (particularly where subject to regular wind and wave action)
• Non-polluting
• Fit for the intended post extraction land use(s)
• Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land</td></tr>
<tr><td>Surface infrastructure</td><td>• Decommissioned and removed, unless otherwise agreed by the Secretary</td></tr>
<tr><td>Dredge pond and final lake</td><td>• Perimeter of dredge pond landscaped and vegetated using native tree and understory species.
• Natural looking bank design with curved lake boundaries, with a variety of bank treatments (e.g., beaches, wetlands) providing a variety of habitats.
• Minimise the extent and persistence of algal blooms
• Water quality fit for the intended post extraction land use(s)</td></tr>
</table>
These performance criteria will be implemented through the preparation of a Rehabilitation Management Plan.

In summary, if an appropriate alternative use cannot be found for the site at the completion of sand extraction, the land will be left as a rehabilitated natural area to provide flora and fauna habitat.</td>
<td>N/A</td>
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<td><u>4. Traffic Impact</u>

An analysis has been undertaken of the proponent's Traffic Impact Assessment (TIA), noting that Transport for NSW will be the leading authority in terms of access to / from the existing Tweed Valley Way / M1 interchange.

<u>4.1 Proposed Works</u>

The proponent is proposing the following works:

• Construction of new access to TVW southbound off ramp. Includes acceleration lane (618m) allows speed of 67km/h, which terminates before ABLP access. Acceleration modelling carried out;
• Auxiliary Left turn Lane (AUL) (110m deceleration including 30m taper) into ABLP access; and
• Lane widening on the TVW/ Service station roundabout to accommodate the passing of two B doubles.

Right turns in and right turns out are to be banned from existing Australian Bay Lobster Producers (ABLP) driveway access. It is unclear why there is a need to construct the widening of the shoulder at the ABLP access to enable trucks to turn out of the site as all truck will use the new access and acceleration lane to the north. Refer to request for further information below (Item 8.7).</td>
<td>We note Tweed Shire Councils comments. As part of addressing TfNSW comments, access arrangements to the site have been amended. It is anticipated that the changes made render these comments void.</td>
<td>Attachment 6 – Revised Appendix J – Traffic Impact Assessment</td>
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<tr>
<td><u>4.2 Tweed Road Contribution Plan (TRCP)</u>

Whilst it may be accepted that the vast majority 80 – 90% of movements will be north bound, there may some trips to sites within the Tweed Shire and this is estimated (by Council) to be 10%, thereby triggering TRCP contributions.</td>
<td>The proponent is unsure as to how Council has 'estimated' this percentage. The split of vehicle trips north/south identified in the Traffic Impact Assessment are based on existing Hanson vehicle movement records and are accurate in their estimate of the north/south split. The project will result in less than 10% movement south bound.

The proponent has reviewed their records and can confirm that in the last 4 years, local deliveries within the TSC LGA have in each year been significantly less that the Council's "estimate" of 10% … and in fact the % has decreased year on year.

It is also worth noting that <u>all</u> these deliveries within TSC LGA have been to Hymix and Boral concrete plants in the industrial area behind the BP truck stop at the Chinderah roundabout. If Hanson vehicles exit to the west directly onto the M1 as proposed, most of the trips from HTSP to these concrete plants would be on State Controlled Roads, not local council roads.

In addition, as total sales volumes increase, it is fair to say that volumes at the local concrete plants within TSC would not increase at the same proportion and so their volume as a % of the total trip would decrease even further. The below figure identifies the % of deliveries within the TSC LGA.

Hanson Tweed Sand Plant - Summary of Historical Deliveries within Tweed Shire Council (TSC) LGA

<table>
<tr><th>Year</th><th>Total tonnes delivered</th><th>Tonnes delivered within TSC LGA</th><th>% of Total</th><th>Number of deliveries</th></tr>
<tr><td>2017-2018</td><td>214,295</td><td>16,343</td><td>7.6%</td><td>550</td></tr>
<tr><td>2018-2019</td><td>204,024</td><td>14,324</td><td>7.0%</td><td>481</td></tr>
<tr><td>2019-2020</td><td>243,435</td><td>12,996</td><td>5.3%</td><td>336</td></tr>
<tr><td>2020-May 2021</td><td>196,950</td><td>8,349</td><td>4.3%</td><td>220</td></tr>
</table>
</td>
<td>Attachment 6 – Revised Appendix J – Traffic Impact Assessment</td>
</tr>
</table>

<u>5. Environmental Health</u> <u>5.1 Acid Sulfate Soils</u> The application identifies the subject site as Class 2, 3 and 5 Acid Sulfate Soil. Disturbance of such soil has the potential to result in adverse environmental impacts. Any investigations and management plans, or similar, should be prepared in accordance with NSW Acid Sulfate Soils Management Advisory Committee (ASSMAC) guidance documents. The application indicates the development is a 'scheduled activity' under the Protection of the Environment Operations Act 1997, and an Environment Protection Licence issued by the NSW Environment Protection Authority (EPA) will be required to carry out works at the premises. It is likely management of acid sulfate soils/waste will be regulated under the Environment Protection Licence. Comments and potential conditions to be recommended by EPA and potentially other State Agencies will be critical.	The project's environmental science consultant has prepared a response to Tweed Shire Councils comment and has provided written response. The project will require an Environment Protection Licence.	Attachment 1B – G&S Response Comments
<u>5.2 Air Pollution</u> Construction, operations, haulage and rehabilitation activities have the potential to result in off-site dust/particulate impacts. The application includes air quality criteria for the Phase 1-4 Approval. It is considered that similar criteria should be applied to the proposal if approved. As stated, an Environment Protection Licence will be required to carry out works at the premises. Comments and potential conditions recommended by EPA will be critical.	We note the Council comments. No response is required. The project will require an Environment Protection Licence.	N/A
<u>5.3 Contaminated Land</u> The application includes a Preliminary Site Investigation (PSI) prepared Gilbert + Sutherland. A detailed review of the PSI has not been carried out, however the below summary is noted. *The potentially contaminating activities/potential contaminants associated with the site are typical of land where agricultural activities have historically been undertaken and were limited to small areas of the site as identified on Drawing 12035-416 in Appendix 1.* *Should the proposed expansion be approved, a detailed investigation would be undertaken to inform the preparation of a Remediation Action Plan (RAP) for the relevant areas of the site.* *In many instances, remediation requirements are likely to be straightforward and simply require the removal of identified wastes with selected areas also requiring soil testing. These activities would be undertaken in accordance with an approved RAP and scheduled to occur on a lot by lot basis prior to the commencement of extraction within the relevant allotments. This staged approach is supported by State Environmental Planning Policy (SEPP) 55 which provides that detailed assessments need not be undertaken immediately following the preliminary investigation but should be undertaken prior to commencement of the new land use.* *It is proposed that detailed investigations, preparation of the RAP and any subsequent remediation of the identified areas could reasonably form a condition of approval for the proposed expansion.* The approach of 'approval without knowing contamination conditions' is contrary to Council's understanding of the intent of SEPP 55 and contaminated land legislation, whereby detailed investigations and RAP (as necessary) are undertaken prior to determination in order to comply with the provisions of clause 7 of SEPP 55. Accordingly, the proponent's current approach to contamination is not supported.	The project's environmental science consultant has prepared a response to Tweed Shire Councils comment and has provided written response.	Attachment 1B – G&S Response Comments
<u>5.4 End Use</u> The application indicates the proposal development will occur in stages, and once it is completed, a series of large brackish (salt) clean water lakes will be created, shorelines embellished, and the	As outlined within the EIS, Hanson will retain ownership of the site following completion of sand extraction and any proposed subsequent use of the site would be decided via the appropriate consultative, application and regulatory processes in place at that time.	N/A

area made available for public use. It is unknown whether management/control/ownership of the lakes will be transferred to Council. It is possible substantial resources will have to be allocated to maintaining water quality at a primary contact recreation standard (i.e. suitable for swimming and similar). Correction of pH may be required due to acid sulfate soil conditions. Algae growth may need to be addressed. Further information is required regarding end use and long-term management/control/ownership of the lakes.	It is also outline that to ensure the broadest range of potential use options would be available upon completion of sand extraction, the project proposes to achieve several performance criteria. These performance criteria will be implemented through the preparation of a Rehabilitation Management Plan. The EIS does not discuss or outline those areas onsite will be made available for public use, nor is it the intent to dedicate this land to Council. It will remain in the ownership of Hanson at the end of sand extraction. In summary, if an appropriate alternative use cannot be found for the site at the completion of sand extraction, the land will be left as a rehabilitated natural area to provide flora and fauna habitat.	
5.5 Groundwater and Dewatering The application indicates that due to the excavation process used, dewatering is not required. The proposed development has the potential to impact on groundwater quality. An Environment Protection Licence will be required to carry out works at the premises. Comments and potential conditions recommended by EPA will be critical.	The project's environmental science consultant has prepared a response to Tweed Shire Councils comment and has provided written response.	Attachment 1B – G&S Response Comments
5.6 Land Use Conflict Living and Working in Rural Areas (NSW DPI, 2007) recommends a minimum buffer of 500m between 'mining, petroleum, production and extractive industries' and 'residential areas and urban development' and 'rural dwellings'. The application indicates such a buffer will not be provided. It is noted an Agricultural Land Assessment has been included in the application. A detailed review of the Agricultural Land Assessment has not been carried out.	The project's environmental science consultant has prepared a response to Tweed Shire Councils comment and has provided written response.	Attachment 1B – G&S Response Comments
5.7 Lighting The application indicates 24 hour operations are proposed. Lighting has the potential to adversely impact on off-site receptors. Any lighting should comply with applicable Australian Standards. It is currently unknown whether the application has appropriately addressed lighting and compliance with applicable Australian Standards.	As identified within the EIS all site lighting is to be designed and installed in accord with AS4282:2019 Control of the obtrusive effects of outdoor lighting. The proponent has no objection to the inclusion of a condition of consent regarding same.	N/A
5.8 Noise Construction, operations, haulage and rehabilitation activities have the potential to result in off-site noise impacts. The application included the below statement: *Noise Impact was identified as a Key Issue that would also require focused engagement. Consistent with current operations, extraction will occur via dredge unit that will change location throughout the phases of operation. The proposal would also result in additional heavy vehicle movements and loading of vehicles. All these activities may be heard at nearby dwellings subject to prevailing conditions and in particular S/SE winds that prevail. A Noise Impact Assessment would be prepared to assess all noise generating activities and ensure noise levels can achieve compliance with relevant legislative requirements.* It is noted noise assessments have been included in the application. Detailed reviews of these assessments have not been carried out. An Environment Protection Licence will be required to carry out works at the premises. Comments and potential conditions recommended by EPA will be critical.	We note the Council comments. No response is required. The project will require an Environment Protection Licence. It however noted the statement identified by Council appears to originate from the SEAR's request rather than the EIS.	N/A

5.9 On-Site Sewage Management Should toilet facilities and the like not be connected to a reticulated sewerage system, an on-site sewage management system/s will be required. S68 approval under the Local Government Act 1993 will be required. Any trade wastewater generated on-site needs to be appropriately managed.	We note the Council comments. The site currently has an approved onsite sewerage management system for staff amenities. This system will remain in place until Phase 7. A S68 approval under the Local Government Act will be obtained as required as part of the relocation of the site buildings and wash plant during phase 7.	N/A
5.10 Waste The below statement is included in the application: *The proposed HTSP expansion would access an available sand resource of approximately 30-35 million tonnes and provide production and transport of a maximum 950,000 tonnes of sand per annum (market driven). The proposed project life is 30 years (market driven) spanning several extraction phases. The project would increase the current approved operating hours of the HTSP to allow operations 24 hours, seven days a week.* *The project would include an allowance to import 60,000 tonnes per annum of Virgin Excavated Natural Material (VENM) for the purposes of backfilling, armoring lake edges, rehabilitation works, etc.* An Environment Protection Licence will be required to carry out works at the premises. Comments and potential conditions recommended by EPA will be critical.	We note the Council comments. No response is required. The project will require an Environment Protection Licence.	N/A
5.11 Water Pollution The below statement is included in the application: *The data set demonstrates that surface water quality within the current TSP dredge lake has remained mostly compliant with the site's water quality objectives since issue of the Development Consent in 2006. With respect to cyanobacteria, long-term results indicate the ongoing presence of a seasonal algal bloom with the potential to produce algal toxins. The characteristics of the lake's cyanobacteria population have been extensively analysed and expert advice sought to determine appropriate hazard and risk management techniques. Recent results have been encouraging with a significant reduction in algal cell numbers since 2017.* *Groundwater quality at the cessation of sand extraction, including any implications to the proposed end-use(s) of the site as informed by an assessment of risks to the environment and human health.* *The above suggests ongoing management of surface water will be required. An Environment Protection Licence will be required to carry out works at the premises. Comments and potential conditions recommended by EPA will be critical.* As stated, it is possible substantial resources will have to be allocated to maintaining water quality at a primary contact recreation standard. Correction of pH may be required due to acid sulfate soil conditions. Algae growth may need to be addressed. Further information is required regarding end use and long-term management/control/ownership of the lakes. It is recommended that the Department consider engaging the services of an experienced hydrogeologist to review the proposed development in terms of management of water quality in perpetuity.	The project's environmental science consultant has prepared a response to Tweed Shire Councils comment and has provided written response.	Attachment 1B – G&S Response Comments
5.12 Biting Midges and Mosquitoes The proposed development includes large areas of open water and wetland rehabilitation areas. The application is to address Tweed Development Control Plan 2008, Section A6 – Biting Midge and Mosquito Control.	We note that Section A6 of the TDCP 2008 provide 4 'guidelines and suggestions' in relation to new waterbodies close to residential areas. These are as follows: 1. *Tidal waterbodies should have a high percentage of their foreshore revetted to a level below that suitable for biting midge breeding. This will exclude the inter-tidal zone favoured by biting midge. Small areas may be left as sandy beach for recreation providing human recreational activities on these beaches is sufficient to keep the sand well trampled to deter midge breeding. Regular weekly raking of*	N/A

	these beaches throughout the warmer months of the year may also deter midge colonisation of the beaches. Consult Council's Entomological Control Officer for further details of this technique. 2. *Water quality of lakes and lagoons should be suitable for mosquito eating larvivorous fish to breed.* 3. *Water to be stocked with suitable native larvivorous fish. Council will advise and assist with this.* 4. *Waterway design to avoid the potential for extensive emergent aquatic plant growth. Generally this will require the majority of the water body to be deeper than 2m, though shallow ingress and egress points supporting aquatic growth to act as sediment and nutrient traps are favoured. If water-lillies colonise waterbodies extensively, regular removal may be necessary to reduce the breeding potential of several opportunistic mosquito species that spend their larval stages attached to the stems of these plants.* The proposal will require the future preparation of detailed Rehabilitation & Landscape Management Plan consistent with the Concept Rehabilitation & Landscape Management Plan. Measures to ensure habitat that would promote the colonisation by biting midge and mosquito can be incorporated.	

6. End Use / Open Space Council has reviewed the proposed development with regard to the end use and its alignment with Council's open space strategies. 6.1 Proposed End Use / End Use Concept Plan The subject application is currently proposing that the site owner will retain ownership of the site following completion of sand extraction and any proposed subsequent use of the site would be decided via the appropriate consultative, application and regulatory processes in place at that time – i.e. in approximately 30 years' time. However, the subject application also provides some limited information regarding the proposed end use of the area. Documentation provided mentions vague 'end use principles, and provides similarly vague options, however at this stage the proponent is not suggesting any handover of assets for open space to Council. However, some contradictory information is provided in Attachment 13 – Community Consultation Methodology and Scoping Report, Page 3, which states: *This proposal is based on the applicant's intention that as the project is developed in stages, and once it is completed, a series of large brackish (salt) clean water lakes will be created, shorelines embellished, and the area made available for public use. The applicant proposes to deliver staged landscaped areas surrounding the lakes that are suitable for public use and as listed below it is intended to consult with a wide range of community groups to seek their input and recommendations into the potential of making the lake and foreshore areas available to them and their members or supporters and what embellishments they would like to see included to support their specific uses.* Similarly, Attachment 02 – End Use Concept Plan suggests a range of passive and active recreation activities including: rowing; sailing; boating; canoeing; fishing or cable ski activities, as well as education infrastructure to support fauna & flora education and study at a community, school and/or tertiary research level. Additionally, the plan shows a range of infrastructure for the site including: Primary recreation nodes; shelters and rest stops; seating; beaches; pathways; a jetty; model yacht and boat racing course etc – refer to Figures 5 and 6 below. It is considered appropriate that further and more clear information as to the proposed end use of the site and any potential implications on Council be provided, to enable a more informed decision as to whether any proposed facility has any future benefit to the greater Tweed community. It is not accepted that planning for the end use of this site and any potential implications on Council be addressed at the end of extraction period (30 years into the future).	As outlined within the EIS, Hanson will retain ownership of the site following completion of sand extraction and any proposed subsequent use of the site would be decided via the appropriate consultative, application and regulatory processes in place at that time. It is also outlined that to ensure that the broadest range of potential use options would be available upon completion of sand extraction, the project proposes to achieve several performance criteria. These performance criteria will be implemented through the preparation of a Rehabilitation Management Plan. The EIS does not discuss or outline those areas onsite will be made available for public use, nor is it the intent to dedicate this land to Council. It will remain in the ownership of Hanson at the end of sand extraction. It appears Council have reviewed and referenced documentation that originate from the SEAR's request rather than the EIS. In summary, if an appropriate alternative use cannot be found for the site at the completion of sand extraction, the land will be left as a rehabilitated natural area to provide flora and fauna habitat.	N/A
6.2 Alignment to existing Tweed Shire Council Open Space or other relevant plans or strategies The proposed / end use concept plans do not appear to align to any existing Council strategies or plans including the 'Open Space Strategy 2019' or 'Sports Field Strategy' 2014, neither of which have identified the need through extensive community consultation for the proposed end use outcomes. Further to this, Council would like further information as to how the proposed end use of the site will potentially interact and relate to the proposed end use of the similar artificial lake proposed by the adjoining Gales Development.		
6.3 Feasibility & Demand Analysis and Impact of ongoing maintenance and financial implications of the Council and Tweed residents. Council will require appropriate feasibility and demand-analysis studies be completed for any proposed public end use of the site. Additionally, such studies and reports will need to identify any and all ongoing maintenance and financial implications for Tweed Shire Council if the subject application proposes any end use to be handed over to Council in the future.		

6.4 Zoning Zoning for the subject application is currently zoned RU1 Primary Production or RU2 Rural, therefore unsuitable to public recreation.		
7. Planning 7.1 Zone Objectives It is considered that the proponent has not adequately demonstrated that the proposed development is consistent with the objectives of the RU1 and RU2 zones applicable to the subject site.	The proponent respectfully disagrees. It is noted that by virtue of the permissibility of the 'extractive industries' land use in both the RU1 and RU2 zoning tables under the TLEP 2014 that there is a start presumption that the land use can be considered consistent with the objectives. It is also noted that a proposal does not need to be consistent with all the zone objectives to be appropriate on the site. The EIS has demonstrated that: • the land is not 'prime agricultural' land but rather marginal land that due to its location and the impact of climate change, will be subject to ongoing reduction its agricultural capacity. • The project does not fragment other agricultural land nor introduce a land use that conflicts with or would prevent the ongoing use of other Agricultural lands in the locality. • The project does not adversely impact the rural landscape character This is consistent with the objectives of the zones.	N/A
7.2 Loss of Agricultural Land Concern is raised with regard to the suitability of the proposed development and the impact of sterilizing the land for future uses and loss of agricultural land. The cumulative impact of the subject site and adjoining land being utilised for similar sand extraction industries has not been suitably addressed, in terms of the strategic importance of the land, given its identification as being regionally significant farmland. If the proposed development is granted approval, the agricultural use of the land will be lost in perpetuity.	The project's environmental science consultant has prepared a response to Tweed Shire Councils comment and has provided written response.	Attachment 1B – G&S Response Comments
7.3 Benefits to Tweed Shire Whilst the application has included assessment reports on the Social and Economic impacts associated with the development, it is considered that these reports do not clearly spell out the benefits of the proposed expansion to Tweed Shire. With the majority of the sand being extracted going to South East Queensland, concern is raised that little benefit will be forthcoming for the Tweed Shire.	The Economic Impact Assessment includes detailed analysis of both the benefits to Tweed LGA and NSW economies. This discussion is contained within Section 5.2 of the Economic Impact Assessment.	Attachment 18 – Revised Appendix Q – Economic Impact Assessment
7.4 End Use / Management in Perpetuity Initial discussions with the proponent identified that the resulting lakes were to be dedicated to Council. This raised many concerns with regard to appropriate end uses and the ability to fund the management of the lake system in perpetuity. Whilst the proponent now proposes to maintain ownership of the site during the lifetime of the sand extraction (30 years), the initial concerns of Council remain. The end use / management issues should be appropriately addressed now, as opposed to leaving it for the end of the life of the sand extraction. Although funding for the long-term management is not currently proposed by the proponent, Council is happy to discuss available options. This includes an option for the payment of a minimum dollar amount for every tonne removed from the site. It is considered that this type of funding option would provide a simple and acceptable solution for the long-term management of the lake system, should the application be granted approval.	As outlined within the EIS, Hanson will retain ownership of the site following completion of sand extraction and any proposed subsequent use of the site would be decided via the appropriate consultative, application and regulatory processes in place at that time. It is also outline that to ensure the broadest range of potential use options would be available upon completion of sand extraction, the project proposes to achieve several performance criteria. These performance criteria will be implemented through the preparation of a Rehabilitation Management Plan. In summary, if an appropriate alternative use cannot be found for the site at the completion of sand extraction, the land will be left as a rehabilitated natural area to provide flora and fauna habitat.	N/A
7.5 Aboriginal Cultural Heritage Assessment It is considered appropriate that the application is formally referred to the Tweed Byron Local Aboriginal Land Council (TBLALC) for comment. Subject to TBLALC comment, any recommendations of the ACHA should be reflected in the consent, should the SSD be granted approval.	We note that an Aboriginal Cultural Heritage Due Diligence Assessment was completed in consultation with the Tweed Byron Local Aboriginal Land Council. This report was provided within the EIS. In response to the Heritage NSW comments, further consultation has been undertaken with representatives of the Tweed Byron Local Aboriginal Land Council (TBLALC). This consultation was undertaken with the aim of demonstrating but no restricted sites were located within the project area.	Attachment 1C – TBLALC Response Comments

	This consultation has revealed as follows: *None of the restricted sites are located within the area of the Hanson Sand Quarry. In fact, there has only ever been one site registered within the area of the quarry, which stands to reason as the historical geomorphology of the site is an ancient embayment and swamp land – hence the deep, clean sand deposits. The one site that was registered is now positioned in deep man-made dam.* *For further background: we were engaged for a major, two week sampling program over the proposed extension area during which, from recollection, about 20 or 30 x 3 cubic meter pits were dug and sieved. There was not a skerrick of ACH present. In fact, there was only one stone and one pebble, in the multiple tons of pure sand that was sampled. This work was undertaken under an AHIP with full engagement of RAPS. I'm told that the local Bundjalung name for the area (which I can't recall) means 'wet foot', which I take to confirm that it was originally a salty water swampy bog.* *Subject to anything explicitly to the contrary in any of the submissions received (which, of course, I have not seen), the Cultural Heritage Unit of the Tweed Byron Local Aboriginal Land Council does not consider any additional Aboriginal community consultation to be necessary.* A copy of the correspondence and spreadsheet identifying the location of the restricted site received from the TBLALC is included within this submission response	
7.6 Impact upon Tweed River It is considered appropriate that the Department investigates any potential impacts upon the banks of the Tweed River, as a result of the proposed 20m deep dredging of the subject site.	It is noted this is a request from Council to the DPIE. In this regard, at its closes, sand extraction would be located at its closets, 380m from the banks of the Tweed River. Significant separation distance is provided between the site and the river.	
8. Request for Further Information 8.1 Flooding & Stormwater a. The proposed Southern lake is to be bunded to RL 1.3m AHD. The proponent's Flooding and Stormwater Assessment does not include this bunding in its flood model as it 'is considered negligible due to its low level compared to the overall flood levels experienced at the site'. The proposal will result in a bund approximately 0.8m high being placed directly downstream of the Pacific Highway Bridge which is a critical flow path for water entering the Chinderah/Kingscliff floodplain storage. Any obstruction to flow here is likely to have significant impacts upstream. It should also be noted that the area near the Pacific Highway Bridge is classified as "High Flow". Tweed Shire Development Control Plan section A3 – Development of Flood Liable Land strictly limits changes to ground levels in high flow areas in order to maintain flood conveyance in critical areas. Any significant bunding in this area is contrary to DCP-A3 and unlikely to be supported. This constraint has not been addressed and a proper assessment may reveal unacceptable flood impacts upstream that could have substantial implications for the proposal.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
b. The Flooding and Stormwater Assessment does not include any analysis of changes in the time of inundation in the surrounding floodplain due to the proposal. This is particularly relevant to nearby agriculture, development and environmental areas. Prolonged inundation can kill crops, increase nuisance and change environmental values. The proposal will have significant changes to the low-flow drainage regime of the area and therefore may effect time of inundation of surrounding floodplain areas. This should be evaluated.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
c. The Flooding and Stormwater Assessment predicts that 'for events lower than the 1% AEP, the development improves flooding in the area due to a large gain in flood storage'. These results are likely to be heavily dependent on the starting water level of the lakes input into the flood model runs, which are not defined in the Flooding and Stormwater Assessment. Flooding in the Tweed Valley generally follows multiple days of heavy rain, while the 2 x	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment

lakes are proposed to be bunded with overflow weirs at RL 1.0m AHD. It is likely that a large portion of the "gain in flood storage" would be consumed by this trapped 'pre-flood' rainfall. The proponent should define the starting water level and/or antecedent conditions applied to each flood model run so that the validity of this result can be assessed.		
d. The Flooding and Stormwater Assessment analyses the proposals impact on flooding in isolation but does not consider a cumulative development scenario. This not acceptable and a comprehensive cumulative development scenario must be investigated. If the latest plans for surrounding development cannot be sourced from the relevant landowners and their consultants the proponent can adopt the Tweed Valley Floodplain Risk Management Study 2014 cumulative development scenario and consult with Council to ensure any changes since 2014 are included.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
e. The Flooding and Stormwater Assessment repeatedly claims that afflux as a result of the proposal 'is within the allowable limits as set by the Tweed Council'. It should be noted that these thresholds were adopted for the Tweed Valley Floodplain Risk Management Study cumulative development scenario which included all anticipated fill/development of the floodplain. They are not applicable to an individual development assessment considered in isolation only. These precedents can only be considered relevant if a comprehensive cumulative development scenario is undertaken.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
f. The Flooding and Stormwater Assessment makes a general conclusion that 'the proposed lakes do allow flood waters to be conveyed across them with less resistance than the existing farm paddocks, creating a marginal change to the level of flooding in some areas of the model domain. This is specifically notable in extreme events including the 0.2% AEP and above events'. However, the PMF afflux maps depict the opposite result - a widespread reduction in peak water level to the east of the site and an area of increase to the south-east. This is inconsistent with the above commentary and the reason for it should be explained.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
g. The Flooding and Stormwater Assessment analyses local stormwater flooding and concludes that: 'an increase in water level outside the allowable increase for rural properties (100mm) is anticipated at interrogation locations B, D, E and F in various events. An increase in flooding is due to loss in conveyance area caused by the proposed lake bunds. It then goes on to claim that, as local stormwater peak flood levels are far lower than the regional peak flood levels, this is OK. It is not acceptable to dismiss increases in local stormwater flooding simply because regional flooding is worse. Local drainage efficiency and time of inundation is important for the nearby agricultural land uses, for the viability of nearby development areas and for the ecology of environmental areas. The proponent has not demonstrated that the expected increases in local stormwater flooding are acceptable.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
h. The Flooding and Stormwater Assessment predicts some significant changes to peak discharge and peak water level in local stormwater flooding scenarios. It does not propose any mitigation measures to manage these impacts. It is noted that Appendix C contains a map that outlines various drainage channel realignments/upgrades and the document text states that: 'If during the operation of the sand plant, channels are required to be reformed or realigned, required channel sizing has been indicated in Appendix C'. However, the document then goes on to state that 'no channel upgrades are proposed under this EIS submission. Pre-development channel sizing is matched in the proposed scenario and generally catchment areas draining to the channels have been maintained'. It appears the Flooding and Stormwater Assessment concludes that local stormwater afflux is not acceptable, suggests drain upgrades to offset these impacts, but then declines to include them in the proposal. This requires clarification.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
i. The Flooding and Stormwater Assessment local stormwater analysis does not include any assessment of changes in the time of inundation due to the proposal. The changes to the southern drain result in a longer flow path for low flow drainage to take to reach the outlet. The stormwater analysis should include consideration of low flow drainage and time of inundation.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment

j. The Altona Road and Julius (at the foot of Cudgen ridge) drains are known to flow in both directions depending on tail water levels, rainfall distribution and storage stages. The Flooding and Stormwater Assessment selects a catchment divide that routes stormwater from the east of the site to the north. A sensitivity analysis should be considered where a reasonable area of catchment east of the site is routed to the west, through and around the subject site.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
k. The Flooding and Stormwater Assessment predicts significant increase in peak discharge at the catchment outlets in more frequent events (tables 3.3 and 3.4). However, no justification as to why this is acceptable is provided. It should be noted that, for natural (unsealed) drains, peak discharge increases in frequent events can be related to erosion and related environmental problems (see Development Design Specification D7 – Stormwater Quality waterway stability objective). The proponent should either provide justification as to why these increases will not have any detrimental impact or propose mitigation measures.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
l. Table 3.3 of the Flooding and Stormwater Assessment contains typographical errors that should be corrected.	Burchills Engineering Solutions have undertaken detailed review of Council's comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Council's comments is contained within Section 1.3.1 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
8.2 Ecological impact and management		

a. 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. b. 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. c. 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. d. Further survey should be undertaken for Koala (Phascolarctos cinereus) given the presence of preferred habitat onsite. e. 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. f. 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. g. 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. h. 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.	The projects ecological consultant has reviewed the Tweed Shire Council ecological comments and has provided written response and as part of addressing comment from other public authorities has revised the Draft BDAR and Concept Rehabilitation & Landscape Management Plan. The project's ecologist has also prepared a written response to Tweed Shire Councils comment.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments Attachment 4– Revised Appendix H1 - BDAR Attachment 5 – Appendix H2 – Concept Rehabilitation & Landscape Management Plan
<u>8.3 Tweed Coast Comprehensive Koala Plan of Management</u> 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.	The projects ecological consultant has reviewed the Tweed Shire Council ecological comments and has provided written response and as part of addressing comment from other public authorities has revised the Draft BDAR and Concept Rehabilitation & Landscape Management Plan. The project's ecologist has also prepared a written response to Tweed Shire Councils comment.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments Attachment 4 – Revised Appendix H1 - BDAR Attachment 5 – Appendix H2 – Concept Rehabilitation & Landscape Management Plan
<u>8.4 Concept Rehabilitation and Landscape Management Plan</u>		

The Concept Rehabilitation & Landscape Management Plan dated March 2021 prepared by JWA Ecological Consultants should be amended to address the following fundamental matters: a. Capture areas of high ecological significance (i.e. Endangered Ecological Communities, Preferred Koala Habitat), associated buffer zones and any offset areas; b. In perpetuity maintenance arrangements should be reflected in the plan; c. Species densities should be increased within Riparian Rehabilitation Areas and expanded buffer zones to: i. Trees - 5 m spacing ii. Shrubs - 3 m spacing iii. Groundcover - 1 m spacing d. Increase maintenance rotations to quarterly per annum; and e. Identify Open Space Areas detailed in 2.7.3.4 on the Concept RLMP Phasing plan	The projects ecological consultant has reviewed the Tweed Shire Council ecological comments and has provided written response and as part of addressing comment from other public authorities has revised the Draft BDAR and Concept Rehabilitation & Landscape Management Plan. The project's ecologist has also prepared a written response to Tweed Shire Councils comment.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments Attachment 4 – Revised Appendix H1 - BDAR Attachment 5 – Appendix H2 – Concept Rehabilitation & Landscape Management Plan
8.5 Groundwater Dependent Ecosystems 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.	The project's environmental science consultant has prepared a response to Tweed Shire Councils comment and has provided written response.	Attachment 1B – G&S Response Comments
8.6 Long term management and protection 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.	The projects ecological consultant has reviewed the Tweed Shire Council ecological comments and has provided written response and as part of addressing comment from other public authorities has revised the Draft BDAR and Concept Rehabilitation & Landscape Management Plan.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments Attachment 4 – Revised Appendix H1 - BDAR Attachment 5 – Appendix H2 – Concept Rehabilitation & Landscape Management Plan
8.7 Traffic Impact The proposed upgrade (widened left turn out) of the existing access to the Australian Bay Lobster Producers site is not justified as no truck movements associated with this application will be required to turn left out of this access.	We note Tweed Shire Councils comments. As part of addressing TfNSW comments, access arrangements to the site have been amended. It is anticipated that the changes made render these comments void.	Attachment 6 – Revised Appendix J – Traffic Impact Assessment
8. Conclusion As noted by the comments above, a significant amount of issues have been raised, along with a substantial request for further information. Given the concerns raised, the proposed development is formally objected to by Council. It is envisaged that the above matters will be forwarded to the proponent for an appropriate response to be prepared. Council looks forward to reviewing such response and is happy to meet with the Department / proponent to further discuss any outstanding matters.	We note Council's comment and acknowledge and look forward to working with Tweed Shire Council further, should this be required.	N/A

<u>9. Additional Comments</u> In addition to endorsing the abovementioned Council officer comments (that were issued to the Department as a 'Draft Submission' on 20 May 2021), it was resolved by Council's Planning Committee on 3 June 2021 to include the following comments in the endorsed submission: • "Due to the close proximity of highly populated areas a risk analysis and management plan should be provided to consider the potential for catastrophic failure for all risk scenarios, such as significant drain blockage, weir or bund failure that may suddenly redirect waters to sensitive populated areas; • Due to the close proximity of highly populated areas and important farmlands, worst case scenarios should be considered for joint probability analysis of combined events for all potential flooding and storm water impacts, including with stormtides, wind driven waves, meteotsunamis and seiches; • Potential impacts on the Chinderah village should be examined in detail in regard to increased velocities in this area, and for the potential of waters and / or debris being redirected towards the northern side of the Tweed River to the Oxley Cove residential areas; • Further investigation and assessment should be undertaken in regard to the impact of the proposal on the marine ecology of the Tweed estuary from increased flows, increased velocity, poor or contaminated water quality, including on any key fish habitats associated with the drainage system, Boyds channel and the significant Lillies Island seagrass beds that are downstream and are the largest seagrass bed in the Tweed River; • Due to the close proximity of highly populated areas a geotechnical analysis should be undertaken on the ability of the landscape to withstand such large scale changes in structural forces and in light of the ongoing erosion processes of the Tweed Caldera; • Analysis should be undertaken by a suitably qualified expert on the significance of the site for the Tweed in regard to the wider geological landscape and in light of the Tweed being identified as a National Iconic Landscape, and any potential geological attributes that may be affected including ecosystem s.07e3rvices; and • As the water bodies and surrounding environment will require ongoing management at the end of life of the sand quarry operation that consideration be given to applying a royalty or some other form of arrangement to fund this work in perpetuity, if approved."	We acknowledge Councils additional comments. The proponent must note that the inclusion of additional comments requesting information that appears to originate from outside of that originally prepared by Councils staff, who are the qualified professionals in their respective fields is odd. The items raised within 9. Additional Comments of Council correspondence are so broad that they are rendered irrelevant to the proposal. It is noted the EIS and this Submission Report includes a significant body of specialist studies that address all relevant legislative and technical requirement relating to the range of key issues relevant to the project.	N/A
Biodiversity and Conservation Division		
1. 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.	As outlined within the EIS, Hanson will retain ownership of the site following completion of sand extraction and any proposed subsequent use of the site would be decided via the appropriate consultative, application and regulatory processes in place at that time. It is also outline that to ensure the broadest range of potential use options would be available upon completion of sand extraction, the project proposes to achieve several performance criteria. These performance criteria will be implemented through the preparation of a Rehabilitation Management Plan. In summary, if an appropriate alternative use cannot be found for the site at the completion of sand extraction, the land will be left as a rehabilitated natural area to provide flora and fauna habitat. The projects ecological consultant has reviewed the BCD comments and has provided written response. As part of addressing the comments a revised Draft BDAR and Concept Rehabilitation & Landscape Management Plan has been prepared.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments

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.	The projects ecological consultant has reviewed the BCD comments and has provided written response. As part of addressing the comments a revised Draft BDAR and Concept Rehabilitation & Landscape Management Plan has been prepared.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments
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.	The projects ecological consultant has reviewed the BCD comments and has provided written response. As part of addressing the comments a revised Draft BDAR and Concept Rehabilitation & Landscape Management Plan has been prepared.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments
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.	Gilbert & Sutherland have undertaken detail review of these request items and prepared three addendum reports, comprising 'Supplementary Groundwater Model Report', 'Supplementary Water Quality Report – Minimal Impact Considerations' and 'Revised Water Balance Modelling'	Attachment 1B – G&S Response Comments Attachment 12 - Supplementary Water Quality Report – Minimal Impact Considerations Attachment 13 - Supplementary Groundwater Model Report Attachment 14 – Supplementary Water Balance Modelling Report
5. 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.	The projects ecological consultant has reviewed the BCD comments and has provided written response. As part of addressing the comments a revised Draft BDAR and Concept Rehabilitation & Landscape Management Plan has been prepared.	Attachment 1D – JWA Biodiversity & Rehabilitation Response Comments
6. The EIS be expanded to provide a full response, detailing specifically how the EIS both addresses and satisfies the requirements of clauses 13 and 14 of the State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP).	The provisions of Clause 13 & 14 of the Coastal Management SEPP only apply to the orange (coastal environment area) or purple area (coastal use area) in the mapping extract below. The provisions do not apply to the majority of the site:  No extraction is proposed within the coastal environment area. Despite this a significant body of studies have been completed which address the considerations of Clause 13. In relation to Clause 14, the site is significantly separated from the foreshore and will not impact existing access to same. The proposal will not result in any shadow cast, result in adverse impact to visual amenity or impact Aboriginal, other cultural and building environment heritage. A significant body of studies have been completed which	N/A

	address the considerations of Clause 14.	
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 does not exist. c. Address the anomalies in areas identified as riparian restoration and open space/ public use areas in the EIS versus the CRLMP.	We note the cross-referencing discrepancies. The section references should be 6.1, 6.5.1 & 6.10. We note the cross-referencing discrepancy. The section references should be 6.13. The EIS and CRLMP have been reviewed and anomalies have not been located. It is noted that as part of addressing the comments a revised Draft BDAR, revised Concept Rehabilitation & Landscape Management Plan, Revised Conceptual Final Landform Plan and Revised Rehabilitation Phasing Plan. The revised rehabilitation area is 38.21ha (over 16% of the site area).	Attachment 5 – Revised Appendix H2 – Concept Rehabilitation & Landscape Management Plan Attachment 6 – Revised Appendix J – Traffic Impact Assessment Attachment 10 – Revised Appendix A15 - Conceptual Final Landform Plan Attachment 11 – Revised Appendix A16 - Rehabilitation Phasing Plan

Private Organisation

Australia Bay Lobster Producers		
Australian Bay Lobster Producers Australian Bay Lobster Producers (ABLP) is the operator of an aquaculture facility at 9484 Tweed Valley Way, Chinderah on lot 1 DP 1192506 (ABLP Site). The ABLP Site is accessible via the Transport for NSW (TfNSW) lot 51 DP1056966 (the Access Lot) which connects the ABLP Site to the Tweed Valley Way interchange at the M1 Pacific Motorway southbound. The Access Lot is currently utilised by the operational and construction traffic associated with activities at the ABLP Site, including heavy vehicle traffic importing fill material for the flood protection earthworks at the site. **Hanson Tweed Sand Plant Expansion** Hanson has nominated the Access Lot as the sole point of access for all incoming traffic associated with the Hanson Tweed Sand Plant Expansion (TSPE) and additionally has proposed to direct all incoming and outgoing vehicle movements associated with the TSPE via the Tweed Valley Way interchange. Considering the TSPE is projected to generate approximately 62,000 additional heavy vehicle movements at the interchange, of which 31,000 of these vehicles will utilise the Access Lot alongside ABLP traffic, ABLP has engaged with Hanson in a consultation process to address concerns around excessive heavy vehicle traffic at these locations. The primary focus of this process has been to identify a means of circumventing congestion at the Tweed Valley Way interchange and ensuring safe use of the Access Lot for all road users.	In response to the TfNSW comments the proponent has undertaken extensive further consultation with the TfNSW and have as a result altered the proposed access arrangement. The access to the Tweed Valley Way / M1 Interchange is now proposed as a roundabout rather than a merging slip lane. These changes address the ABLP concerns and provide a consolidated access and exit point for both ABLP and Hanson operations that comply with TfNSW requirements.	Attachment 6 – Revised Appendix J – Traffic Impact Assessment
Traffic Concerns ABLP met with Hanson on 7 May to table its concerns with Hanson's SSD-10398 application and discuss the impact of Hanson's proposed heavy vehicle traffic to the safety of road users on the interchange and Access Lot. The key concerns raised at the meeting included: 1. The operations of the TSPE are approximately four times the scope of Hanson's existing sand mining operations and will generate a commensurate increase in daily traffic movements to and from the site.		
2. Hanson heavy vehicles currently access its existing operations at DP1082435 via Tweed Coast Road and Altona Road, however the proposed TSPE proposes to divert all existing heavy vehicle traffic in addition to new traffic associated with the expansion via the Tweed Valley Way interchange. This will lead to an increase of heavy vehicle movements at the interchange by approximately 62,000 vehicles per year, not including light vehicles. This is approximately 64 two-way heavy vehicle movements at this location every hour, or approximately one every three minutes if vehicle movements are dispersed evenly over a 24-hour day.		
3. Hanson has nominated the Access Lot as the sole access point for vehicles entering the TSPE. This will generate an additional 31,000 heavy vehicle movements through the Access Lot each year. Considering the existing volume of ABLP traffic at this location and accounting for future traffic, the addition of a further 31,000 heavy vehicle movements per year will inundate the		

Access Lot. The existing road on the Access Lot is not capable of sustaining the proposed volume of heavy vehicle traffic or the opposing traffic streams (incoming/outgoing) of varying vehicle types (e.g. heavy vehicle, light vehicle, public vehicles) which would eventuate. 4. The additional traffic movements at the interchange, particularly the magnitude and type (heavy vehicle) of traffic, is expected to create congestion for road users exiting or entering the southbound lanes of the M1 Pacific Motorway via the Tweed Valley Way interchange. This congestion will likely be exacerbated by the addition of the proposed acceleration and deceleration lanes on the interchange. The addition of these lanes in conjunction with the proposed increase to traffic movements will result in multiple high-volume streams of varying traffic types converging in close proximity (i.e. bottleneck). 5. An increased collision risk may arise from the interaction of vehicles entering and exiting at the Access Lot with the high volume of TSPE heavy vehicle traffic on the Tweed Valley Way interchange. **Traffic Mitigation Proposals** As part of the consultation process Hanson and ABLP tabled potential traffic mitigation proposals to address the above concerns. This process included discussion of the below. <u>Upgrade of the Tweed Valley Way interchange and Access Lot</u> In line with Hanson's SSD-10398 application, Hanson propos7ed an upgrade of the Tweed Valley Way interchange to include a declaration lane for vehicles turning left onto the Access Lot along with an upgrade to the road of the Access Lot, including widening of the existing lanes, adding a separate delineated lane dedicated to Hanson traffic and adding a crossover point for misdirected traffic. ABLP notes that this proposal addresses ABLP's concerns in respect of ABLP and Hanson traffic interaction on the Access Lot, however it fails to address concerns around the increase in overall traffic movements passing through the Tweed Valley Way interchange. The addition of the deceleration lane (Refer to Figure 1 below) also adds another traffic stream to the interchange and due to its proximity to Hanson's proposed acceleration lane (Refer to Figure 5.8 of EIS Appendix J Traffic Impact Assessment), will create a convergence point for multiple streams of high-speed traffic. In particular, the addition of the deceleration lane in conjunction with the acceleration lane will result in the following traffic streams interacting between the M1 Pacific Motorway southbound exit and the overpass bridge of the Tweed Valley Way interchange: • Traffic exiting the M1 Pacific Motorway southbound and decelerating from 110km/hr to 80km/hr. • Heavy vehicles accelerating to 80km/hr from the Hanson acceleration lane travelling through the Tweed Valley Way interchange (one every three minutes). • Hanson heavy vehicles (one every three minutes) along with ABLP operations and • construction vehicles decelerating via the deceleration lane to enter the Access Lot. • ABLP vehicles exiting the Access Lot onto the Tweed Valley Way interchange and accelerating to 80km/hr to travel through the Tweed Valley Way interchange. • ABLP vehicles exiting the Access Lot by right hand turn onto the Tweed Valley Way interchange intending to travel south on the M1 Pacific Motorway. • ABLP traffic entering the Access Lot via right hand turn from the M1 Pacific Motorway southbound entrance lane of the interchange. The proximity of the termination/merge point of Hanson's proposed acceleration lane with the start of Hanson's proposed deceleration lane, and the interaction of heavy vehicles accelerating into the path of heavy vehicles decelerating at this juncture, gives rise to a heightened safety concern for road users in the vicinity. <u>Alternative TSPE access point to the south of the ABLP Site</u> ABLP proposes that Hanson relocate the TSPE access point to the M1 Pacific Motorway (southbound), south of the Tweed Valley Way interchange. In order to achieve this, it will be necessary to create a deceleration lane commencing at the M1 Pacific Motorway and extending along the western boundary of ABLP's lot 1 DP1192506 to Hanson's lot 1 DP1250570. To achieve this ABLP offers to grant an easement to Hanson over lots 708 and 709 DP1000580 for the purpose of creating the deceleration lane from the motorway through to Hanson's lot 1 DP1250570. If this access point were adopted it would reduce the additional heavy vehicle traffic at the Tweed Valley Way interchange by 31,000 movements (50%) whilst concurrently circumventing any interaction between ABLP and Hanson traffic on the Access Lot. Further, it would remove the proximity issue		

with the current acceleration and deceleration lanes proposed by Hanson and reduce the safety risk associated with having multiple streams of varying traffic types converge in close proximity. It is also expected to alleviate the long-term congestion pressures which are otherwise anticipated. Hanson has advised that this access point may not be favourable due the location of the access off the M1 Pacific Motorway, however, given the significant upside to the safety and function of the Tweed Valley Way interchange, ABLP hopes further consideration will be given to this type of access.		

The Public

Ms Josephine Macdougall		
I strongly object to this proposal! Should this go ahead there will be enormous HEALTH ramifications, due to noise, dust and pollution. Such disasters have happened in other areas with irreversible damage. In past years, dolphins have been seen here. As with the salmon industry in SE Tasmania, the water will be choked with inevitable spill transforming the blue harbour into brown/grey sludge eliminating all marine life. DO NOT PROCEED PLEASE!	We note Ms Macdougall's submission. The EIS documentation identify that there will be no adverse impacts due to noise, dust or pollution and that appropriate mitigation measure are proposed (many of which are currently employed successfully at Hanson's current operations) to ensure the proposal can operation without impact.	N/A
Ms Cheryl Cooper		
The proposed doubling of noxious Hanson extraction and haulage activities would complete the isolation of my rural property within a ring of non-agricultural enterprises permitted in recent years. Those boundary encroachments inside sand miners (Hanson and Gales), one landscape haulage depot (O'Keeffe), Tweed Sewerage works, a busy golf course and a proposed nationally televised greyhound racing venue. My right to exploit my holding in compliance with its current Rural 2 classification will be made meaningless by Hanson expansion, since my permitted options specify consistency with an "agricultural landscape." Clearly, there would be no agricultural landscape left to conform to. I am further hamstrung by the very opposite forces of industry – conservation- with recent flood mitigation plans prohibiting new building in areas of otherwise value-adding potential to me. My lifetime of sympathetic stewardship will be rewarded by my land becoming the local default carbon sink, assaulted from dawn to dusk by acoustic, olfactory and air-particle pollution for the next 30 years. Every boundary of my property will be impacted by non-agricultural enterprise if the Hanson expansion proceeds. Our residence fronting Tweed Coast Road is already impacted daily by Boral and Hanson trucks parking outside from 6.30am (photos available), with their jarring compression brakes and clang of trailer linkages. This is 500m before their Altona Road access turn-off. My property comprises two portions: a long thin section from Tweed Coast Road to the Tweed Sewerage works, and then a square portion of approximately 60 acres immediately beyond this. We use the front section for equine activities and other recreation, and the rear 60 acres for cattle agistment and proposed horse agistment. If a highway interchange link goes ahead, I foresee major impacts on my use of this adjacent rear 60 acres. If Altona Road is re-routed closer to my property as planned, it will vastly reduce my options for sympathetic development along its entire length. Yours sincerely, Cheryl L Cooper, Chinderah. Email cherycooper@hotmail.com Phone 0407747259	We note Ms Cooper's submission. It would appear Ms Cooper submission may at least in part be commenting on other proposals not related to the HTSP expansion. There are references to elements such as 're-routing' Altona Road and 'greyhound racing venue' which are separate items for other and do not form part of the project. The potential issues raised by this submitter that would relate to this proposal are summarised as follows: • Rural land fragmentation. • Meeting the objectives of the RU2 zone under the Tweed Local Environment Plan (LEP) 2014. • Noise, odour and dust concerns; and • Trucks parking outside the property – using compression brakes and noise from trailer linkages. The following comment is provided against each dop point: • In respect of rural land fragmentation, we note that, in accordance with relevant statutory requirements, a land use conflict risk assessment (LUCRA) was completed as part of the ALCA contained in Appendix M of the EIS. Drawing 12035_306 (in Appendix 1 of the ALCA) showed an aerial image of the subject site and surrounding lands including the land located at 200 Tweed Coast Road, Chinderah (formally described as Lot 1 DP1186419) referred to in this submission. That drawing indicated that Lot 1 DP1186419 was bordered by primary production (RU1), rural landscape (RU2) and infrastructure (SP2 – public utility undertaking) land use zones and that the proposed Hanson expansion did not alter the zoning on those adjacent properties. Regardless of the proposed expansion, Lot 1 DP1186419 would remain contiguous with other rural land uses including agricultural grazing land immediately to the north. • The objectives of the RU2 are to maintain a 'rural landscape character' and not an 'agricultural landscape' as mentioned in the submission. As identified within the Visual Impact Assessment the proposal while changing the landscape will not make it inconsistent with a 'rural landscape character'. • The EIS documentation identify that there will be no adverse impacts due to noise, dust or pollution and that appropriate mitigation measure are proposed (many of which are currently employed successfully at Hanson's current operations) to ensure the proposal can operation without impact.	N/A

	• The proposal will removal all Hanson vehicles from Altona Road. This will see a reduction on truck movements past Ms Coopers property rather than the increase her submission outlines. Finally, we note that the proposal will have no impact on Ms Coopers ability to use the 'rear 60 acres' as claimed. The proposal has not impact upon nor physical interface to the piece of road reserve which separate the two pieces of Ms Coopers land holding. Ms Cooper existing access between the two portions of land will remain as existing.	
Mr Stephen Segal (on behalf of Gales-Kingscliff Pty Limited)		

A. Cumulative Impacts The Secretary's Environmental Assessment Requirements (SEARs) requires the assessment of cumulative impacts. Section 6.13 of the Environmental Impact Statement (EIS) supporting the application addresses cumulative impacts and includes the following statement (emphasis added). "Despite the project being in proximity to other extractive land uses there will be no significant cumulative risks because of the proximity of the project to these operations. All technical assessments of the potential impacts of the project, have where relevant, considered the cumulative impacts of the development combined with existing activities in the area thereby assessing the cumulative impacts of the project." However, our review of the technical reports indicates that neither the existing approved nor proposed extended operations at the Cudgen Lakes Sand Quarry (CLSQ) have actually been incorporated into the cumulative outcomes assessed for the Hanson expansion. In particular, the air quality assessment (AQA), dated 12 February 2021, does not appear to include any emissions from existing approved or proposed operations at CLSQ. Section 5.4.1 of the AQA addresses the existing environment and states the following. "The existing environment in the Cudgen area is influenced by climatic conditions of the region and local natural and anthropogenic activities. Emission sources of dust (particulate matter) are mainly diffuse sources such as road transport (motor vehicles), intensive agriculture (sugar cane farming) and Tweed Sand Plant." There is no mention or recognition of the approved Cudgen Lakes Sand Quarry, nor the proposed 2,000,000m3 filling operations (to occur over at least 8 years) proposed in 2019 by the Australian Bay Lobster Producers (ABLP), both of which are significant. It also does not mention the less significant DA 20/0965 ('Altona DA') which was lodged on 19 November 2020 and subsequently approved by Council on 6 May 2021 and allows for the importation of 340,000m3 of uncompacted VENM/ENM onto the CLSQ site. Furthermore, Section 3.5.1 of the AQA explains the assessment methodology for cumulative impacts. It is stated that the "Cumulative concentrations of air pollutants have been assessed by adding the air pollutant concentrations associated with the Tweed Sand Plant expansion with an ambient background concentration". The ambient background concentration adopted, discussed in Section 5.4.3 of the AQA, is based upon data collected at the Queensland Department of Environment and Science air quality monitoring station located at Springwood, Queensland, 80km to the north. Whilst the utilisation of this data is appropriate for the general ambient air quality, it does not account for the adjacent CLSQ or ABLP filling operations. It is noted that, for emissions from the approved CLSQ, previous air quality assessments are publicly available from which appropriate emission estimates could have been included within the air quality model to provide a more accurate cumulative assessment. It is also noted that Hanson have been made aware of Gales intention to extend operations at the CLSQ since at least July 2020. Furthermore, in response to Hanson's consultation request on 18 January 2021, Gales provided Hanson a letter two weeks later, on 1 February 2021 (see attached), detailing the proposed extended operations and requesting Hanson to consider the cumulative impacts of the existing and proposed operations at the CLSQ, especially whilst the Hanson processing area remains adjacent the CLSQ. Gales also requested being provided with the preliminary outcomes of the assessments so any areas of concern and optimisation could be discussed prior to finalisation. Hanson did not further consult with Gales on these matters in preparing the reports that form part of the Hanson submission. In comparison, the 2008 air quality assessment for the CLSQ included specific emission sources within the model for the Hanson Tweed Sand Plant with modelled contours presented for these cumulative emissions. It is requested that the AQA submitted for the Hanson Tweed Sand Plant Expansion be revised to include the cumulative effects of both the CLSQ (current and proposed) and the ABLP filling operations and present the cumulative assessment contours. It is also requested that the modelling provide for the sealing of the "temporary internal haulage road" (discussed further below).	We note Mr Segal's submission. The project Air Quality Consultant has reviewed the comment and in response we note: • The Air Quality Assessment has been updated to include consideration of the current approved Cudgen Land Sand Quarry (CLSQ) and the ABLP filling operations. • The full extent of the haulage road will now be sealed. • Consideration of any future expansion of operations at CLSP which are not yet approved is inappropriate and a future matter for CLSQ to consider when preparing any relevant applications and assessments.	Attachment 3 – Revised Appendix G - Air Quality Assessment

B Stormwater / Agricultural Drainage System We believe that the depiction of the stormwater and agricultural drainage system within the EIS and supporting Flood & Stormwater Report (Burchills, 2021) is erroneous. Specifically on Figures 3.2 and 3.3 of Burchills (2021) report the drain along the south-east part of the existing Quarry lake is not shown as a drain and Catchment 10 shows flow from Cudgen Plateau draining towards the east and north across bunded areas of CLSQ rather than to this unmarked drain. This is incorrect and is inconsistent with previous correspondence between Hanson and Gales regarding inundation of Gales lands caused by blockage in the agricultural drainage system impeding drainage from CLSQ to the west and contributing to wetting up of Gales land to the east of the blockage. It is acknowledged and appreciated that, in response to Gales raising this matter, Hanson commissioned Gilbert & Sutherland to investigate and provide reporting on this matter. Whilst the drainage lines and blockage appears to be on land immediately south of the Hanson operation (and where not owned by Hanson not a Hanson responsibility), the G&S report correctly depicts a portion of the drainage line south of the Hanson Tweed Sand Plant and indicates that this is tidal to the west by presence of salt tolerant aquatic vegetation. This is not reflected within the Burchill (2021) report. Whilst Gales continues to consult with Council, EPA and relevant land owners regarding removal of blockage to the drainage, it is requested that the Flood & Stormwater Report be revised to account for the correct drainage. This is of particular relevance given that Hanson's proposed expansion would remove the tidal connection of this area to the west and north to the Tweed River and as such should account for and consider the correct catchments on the basis of the properly functioning drainage system. The Burchill (2021) report appears to omit the existing drainage channel along the south-east part of the Hanson lake and to substantially underestimate the catchment area that would drain into the Hanson extraction pond. Given that the Hanson proposed expansion would permanently change the local drainage, proper assessment of this matter is essential. In addition to the above, in the drainage schematics shown in Appendix C of Burchill (2021) it is noted that the drainage direction for the existing drain adjacent Altona Road is incorrectly depicted as flowing from west to east. This drain cannot drain towards the east but drains westwards (towards the Tweed River). Gales is extremely concerned about the local drainage. CLSQ and Gales land beyond has become wetted up and Gales is currently in discussions with Council, local landowners and the EPA to determine to causes of the wetting up and blockages to drainage west. It is requested that the Burchill (2021) Flood & Stormwater Report be revised to account for the correct existing drainage, the blocked drains preventing flow west, and the impact of Hanson's proposed changes.	Burchills Engineering Solutions have undertaken detailed review of Gales-Kingscliff comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Gales-Kingscliff comments is contained within Section 1.3.2 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment

C Flood Assessment Venant Solutions have also reviewed the Burchill (2021) Flood & Stormwater Report and have raised the following matters. • The assessment has not properly defined the external catchment influencing flood levels at the site (Figure 3.2). A local catchment flood assessment of the broader area undertaken for Gales by Venant Solutions established that during a 1% AEP event the drain along Altona Road flows from east to west towards the Hanson site. Further, this drain receives runoff from the catchment to the east of Tweed Coast Road. • There is no reporting of flood levels under existing and developed conditions at the eastern end of the site (western edge of Gales land) to demonstrate non-worsening. • For the regional flood assessment, the afflux limits in Section 4.1.1 of Burchill (2021) are taken from the BMT WBM report prepared for Tweed Shire Council's cumulative fill assessment. Hence these are limits for the cumulative fill scenario, not an individual assessment. To use these limits, the proposed Hanson development should have been tested in combination with Council's cumulative fill scenario and assessed against a no fill scenario. • The modelling did not include the proposed bund walls at 1.3 m AHD and 1.75 m AHD. A statement is made in Burchill (2021) that the bund walls were not included because they would have negligible effect, but the purposes of the modelling should have been to demonstrate that this is the case. If the bunds are included and the lakes are at 1.0 m AHD (the level of the weir outlet) when the main river flooding arrives this will represent a loss of flood storage which has not been included in Council's cumulative fill scenario as noted above. It is plausible that the lakes would be at 1.0 m AHD because of rainfall falling locally over the lakes prior to the main river flood arriving. **It is requested that the Burchill (2021) Flood & Stormwater Report be revised to account for these deficiencies.**	Burchills Engineering Solutions have undertaken detailed review of Gales-Kingscliff comments. An amended Flood & Stormwater Assessment has been prepared. Commentary against Gales-Kingscliff comments is contained within Section 1.3.2 of the revised Flood & Stormwater Assessment.	Attachment 2 – Revised Appendix D1 - Flood & Stormwater Assessment
D Hanson Truck Movements and the western route Private Haul Road to enable western egress and ingress to/from Tweed Valley Way The EIS states that the haul road to be constructed to enable western egress and ingress to/from Tweed Valley Way (the western access) will be a private road with no public access and no through connection with existing Altona Road. It is also stated that a "temporary" internal haulage route would be utilised from the existing processing plant entrance until the relocation of the processing area in Phase 7, i.e. from year 9 onwards. This 900m section of 'internal' haulage would occur within the public road reserve for Altona Road along an unsealed road. Given that the temporary portion of haul road is to be utilised for an approximately 9 year period and that wheel generated dust is a significant source of emissions (69% of total TSP emissions and 56% of PM10 emissions), it is unclear why the temporary portion of haul road is not proposed to be sealed (also refer above to cumulative impact considerations). The sealing of this section of road would provide quantifiable public benefit and represents best practice air quality management. It is requested that a commitment be included to seal the "temporary" internal haulage route. The EIS states that all Hanson traffic would utilise the western access and the existing Altona Road route would be "abandoned". The EIS states: The project will provide new private haulage road with connection to the Tweed Valley Way / M1 Interchange. The existing HTSP Phase 1 to 4 haulage route of Altona Road / Crescent Street / Tweed Coast Road will be abandoned, removing all HTSP vehicles from local roads. (Section 1.1); and Of the construction works identified within Section 3.17, the only activity considered an enabling work is the access and associated road upgrade construction. These works would be undertaken prior to commencing extraction. (Section 3.17) However the EIS does not explicitly state that the Hanson sand production increase requested	The projects Traffic Engineer has reviewed the comment from Mr Segal and has provided written response. In summary: • All internal haulage roads are located on private land and do not enter or utilise any part of the Altona Road Reserve in anyway. • All of the internal haulage road is now proposed to be sealed. • The EIS is clear that Hanson will continue to operate under their current Phase 4 approval until such time as all enabling works for the proposal are completed. Once the enable works are completed, Hanson's current approval would be surrendered. In any event, the proponent would anticipate appropriate condition regarding completion of enabling works prior to commencement of operations at the increased rates. • The site should approval be granted will be an operational sand plant operating on private land. Facilitating public road access through the site is inappropriate from an operational safety perspective and would result in capacity and other constraints at the western connection point. Public access will not be granted through the site.	Attachment 6 – Revised Appendix J – Traffic Impact Assessment

would not increase prior to construction of the western access. It is requested that a Statement of Commitment and/or Approval Condition be included to ensure that Hanson production levels will not increase prior to the western access being established. Gales support the establishment of the western access for industrial traffic from a holistic and overall public benefit perspective but submit that, should it have capacity, it should connect to the existing Altona Road to enable not only all traffic from Hanson, but also industrial traffic from CLSQ and Council's Depot and Wastewater Treatment Plant to ultimately use it to its capacity, in order to reduce such traffic from the future Kingscliff recreational precinct on Gales site and from Tweed Coast Road, the Shire's main coastal road. **Further information is requested on the specific obstacles to providing access to the private haul road / western access for both Council and Gales heavy vehicles and what would be required to enable this access.**		
E Matters for Which Clarification / Commitment Is Sought <u>In situ Bulk Density</u> Previous and current assessment reports specify an in situ bulk density of 1.95t/m3 for the sand resource. However, the basis for bulk density is not clear. It is requested that the report clarifies the basis for the sand resource in situ bulk density of 1.95t/m3.	The insitu bulk density for wet sand was adopted from the '*Field Geologists Manual*' (Fourth Edition, Monograph No. 9, published by The Australasian Institute of Mining and Metallurgy 2001). The reference can be found in Section 7.3.4 '*Bulking factors for expansion of common rock materials* (page 295)' of that text. The insitu bulk density is stated as 1.95g/cm3, which equates to 1.95t/m3.	Attachment 1B – G&S Response Comments
Real-Time Particulate Monitoring A real-time PM10 monitoring station is proposed to be located to the south / southeast of the existing Hanson wash plant. Given the existing Hanson processing area is adjacent the CLSQ processing area, it does not appear that the monitoring station could be located in a manner that enables emissions from the operations to be separated. As such, an integrated monitoring approach for both operations may be necessary. **Further information is requested on the intended location of the real-time PM10 monitoring station and confirmation of the utilisation of the station as an integrated monitoring point for both the Hanson and CLSQ operations.**	Hanson is proposing to install a real-time PM10 monitor with a wind speed / wind direction sensor to the south / southeast of the existing washplant. The purpose of the monitoring is so that Hanson can manage its own operations to effectively manage elevated PM10 levels. This will be done by: • Nomination of triggers (e.g. based on complaints and/or real-time dust and meteorological measurement and meteorological forecasts) and a range of additional measures which will be implemented, as necessary, for example when winds are from the plant to the monitor: o applying additional at-source dust controls o increasing the intensity of dust controls o limiting certain operations o ceasing operations The location of the monitor to the south /southeast of Hanson's washplant along with analysis of meteorological data will enable Hanson to manage its contribution to the cumulative dust in the area.	Attachment 3 – Revised Appendix G - Air Quality Assessment
Coverage of Matters Raised by Gales During Consultation In response to Hanson's consultation request 18 January 2021, Gales provided comments to Hanson on 1 February 2021, two weeks later. We are unable to locate within the EIS or supporting documentation acknowledgement of this consultation or consideration of the matters raised. **Confirmation is requested of where within the EIS and/or supporting documentation the consultation with Gales and the matters raised are acknowledged / addressed.**	All relevant and reasonable matters raised by Mr Segal have been incorporated into the relevant studies. Mr Segal's correspondence has been broadly grouped into the Community Consultation discussion within the EIS. The project SEAR's do not identify the need for the proponent to specifically include or summarise any such correspondence from Mr. Segal. We also note Mr Segal's email to numerous parties including staff members at DPIE and TSC which contained a copy of his letter. This email action has ensured all parties are aware of the correspondence. The proponent also provided written response separately to Mr. Segal.	N/A.