Department of Planning, Housing and Infrastructure

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Sancrox Quarry Expansion Project

State Significant Development Assessment Report (SSD-7293)

August 2024

Acknowledgement of Country

The Department of Planning, Housing and Infrastructure acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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Preface

This assessment report provides a record of the Department of Planning, Housing and Infrastructure's (the Department) assessment and evaluation of the State significant development (SSD) application for the Sancrox Quarry Expansion Project located at Sancrox Road, Sancrox, lodged by Hanson Construction Materials Pty Ltd. The report includes:

- an explanation of why the project is considered SSD and who the consent authority is
- an assessment of the project against government policy and statutory requirements, including mandatory considerations
- a demonstration of how matters raised by the community and other stakeholders have been considered
- an explanation of any changes made to the project during the assessment process
- an assessment of the likely environmental, social and economic impacts of the project
- an evaluation which weighs up the likely impacts and benefits of the project, having regard to the proposed mitigations, offsets, community views and expert advice; and provides a view on whether the impacts are on balance, acceptable
- an opinion on whether the project is approvable or not, along with the reasons, to assist the Independent Planning Commission in making an informed decision about whether development consent for the project can be granted and any conditions that should be imposed.

Executive Summary

This report details the Department's assessment of the State significant development application SSD-7293 for the Sancrox Quarry Expansion Project.

This report will be provided to the Independent Planning Commission (IPC) for their consideration when deciding whether to grant consent to the SSD.

Project

Sancrox Quarry is an existing hard rock quarry located in the Port Macquarie-Hastings Local Government Area, approximately 8 kilometres west of Port Macquarie in the Mid North Coast region of New South Wales (NSW). The quarry has been owned and operated by Hanson Construction Materials Pty Ltd (Hanson) since 1998 and produces a range of hard rock aggregate products and fill materials that are used locally and regionally for construction of civil infrastructure.

On 10 July 2019, Hanson submitted a State significant development (SSD) application for the Sancrox Quarry Expansion Project (SSD-7293). The application sought approval for the consolidation of the existing development consents and expansion of the quarry into new areas to extract, process and transport up to 750,000 tonnes per annum (tpa) of hard rock material over a 30-year period. The application also sought approval to construct and operate concrete recycling and batching facilities that would recycle and produce up to 20,000 tpa, and an asphalt production plant that would produce up to 50,000 tpa. In response to government and community feedback, Hanson scaled-back several aspects of the proposal, reducing the proposed extraction rate (to 530,000 tpa), operating hours and disturbance area.

Strategic context

Land use surrounding the quarry site is dominated by industrial precincts, rural and residential areas, and remnant native vegetation. The quarry is the closest quarry to the Mid North Coast region's major population centre of Port Macquarie and is located directly adjacent to the Sancrox Interchange on the Pacific Highway. It produces a range of hard rock aggregate products that are used for construction purposes.

The population of the Port Macquarie area is expected to increase substantially over the coming decade, with an expected commensurate increase in housing and infrastructure projects and associated demand for construction materials.

The quarry is identified as being locally and regionally important to economic growth in the *Mid-North Coast Regional Strategy 2014 – 2034*. 19. Similarly, the *North Coast Regional Plan 2041* recognises the

importance of protecting significant extractive resources to support ongoing economic growth in the region.

Statutory context

The Project is classified as State significant development (SSD) under section 4.36 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) because it is an extractive industry development that would extract more than 500,000 tonnes of extractive materials per year from a total resource of more than 5 million tonnes.

The Independent Planning Commission is the consent authority for the Project under section 4.5(a) of the EP&A Act, as more than 50 unique public submissions objecting to the Project were received.

The application is permissible with consent.

Assessment process

The Department publicly exhibited the Project for a period of 42 days from 31 October 2019 until 11 December 2019. Hanson provided a Submissions Report in May 2021. The Submissions Report included several changes to the Project to address issues raised by Government agencies and the community, including reductions to the extraction rate, operating hours and disturbance footprint.

The Department's assessment report and recommended conditions will now be referred to the Independent Planning Commission (the Commission) to make a determination on the Project.

Engagement

The Department undertook a robust engagement process in accordance with the community participation requirements of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and associated EP&A Regulation.

During the public exhibition of the Project, the Department received 264 public submissions, including nine from special interest groups. One of these submissions supported, 259 objected, and four commented on the Project. Of the 259 objecting submissions, 140 were unique submissions. The remaining 119 objecting submissions were form letters that have not been counted as unique submissions. The Department also received advice from nine State government agencies and Port Macquarie-Hastings Council.

In recognition of the public interest in the Project, the Department participated in a community information session on 10 February 2020 and carried out site visits at the quarry on 10 February 2020, 15 February 2023 and 1 May 2023.

Assessment

Due to the proposed clearing of remnant vegetation and the relative proximity of the Project site to existing industrial and residential land uses, the Department considers that the key assessment issues relate to biodiversity, air quality, noise and vibration, and blasting impacts. Given it is an extractive industry proposal involving the ongoing establishment of voids in the landscape, the Department considers that potential water and rehabilitation and final landform impacts are also important assessment issues for the Project.

Biodiversity

Potential biodiversity impacts from the Project include loss of native vegetation and fauna habitats and habitat fragmentation or isolation, including impacts to Koala habitat.

Approximately 29.89 hectares (ha) of native vegetation would be cleared for the Project, comprising two Plant Community Types (PCTs), neither of which are commensurate with any threatened ecological communities (TECs). Both impacted PCTs are considered Koala habitat. Hanson proposes to implement a Biodiversity Offset Strategy to offset the Project's impacts on native vegetation and the Koala.

Following concerns raised by the Biodiversity Conservation and Science group within NSW Department of Climate Change, Energy, the Environment and Water (BCS) regarding impacts to Koala habitat, Hanson reduced the footprint of the proposed extraction area to avoid a total of 13.21 ha of Koala habitat compared with the originally proposed Project. However, BCS maintained that it did not support the Project's magnitude of impacts to Koala habitat, advising that, in its view, the Project would significantly impact the Port Macquarie Koala population, particularly given the impact of the 2019-2020 bushfires on Koala habitat in the area.

In response, Hanson provided further expert assessment of the impacts of the Project on the local Koala population, which was undertaken by Biolink Ecological Consultants (Biolink). The Biolink assessment concluded that the site's vegetation constituted secondary Koala habitat and that the Project would likely result in the displacement of 1 – 2 individual Koalas as a worst-case scenario.

The Department visited the site on three occasions, including once with BCS to gain an understanding of the biodiversity values of the site and commissioned Alex Cockerill of WSP to undertake an independent peer review of the Project's biodiversity assessment. This review concluded that the Project is not likely to significantly reduce the viability of the local Koala population, therefore the NSW Framework for Biodiversity Assessment provides that the impacts of the project must be offset and the consent authority is not required to consider refusal or modification of the project on these grounds.

Hanson has committed to implementing a range of measures to mitigate the Project's impacts on the Koala and to improve the quality and quantity of habitat available to the local Koala population, including staged vegetation clearing, revegetating existing cleared areas within the Project site prior to clearing areas of significant Koala activity and incorporating a local land-based approach into its offset strategy.

While the Department accepts that retention of unimpacted Koala habitat following the 2019-2020 bushfires is important for the recovery of the local population, the peer review of the biodiversity assessment concluded that the proportion of habitat that would be impacted by the Project is small compared to the extent of available habitat within the locality. Further, the impacts would be staged over the life of the Project, with clearing to be undertaken progressively over several decades. This would mitigate the direct loss of habitat on the Project site against the regeneration of extensive areas of available habitat, including those impacted by the 2019-2020 bushfires.

The Department considers that with the implementation of Hanson's proposed avoidance, mitigation and offsetting measures, the Project is not likely to significantly reduce the viability of the local Koala population and would result in an overall increase in available Koala habitat in the locality.

The Department accepts that the Project's ability to avoid impacts to biodiversity is restricted by the location of the hard rock resource and considers that Hanson has adequately demonstrated avoidance of impacts to Koalas and habitat for other threatened species through the reduction in the Project disturbance footprint, including maintaining a minimum 100 m wide biodiversity corridor to the west of the expanded pit throughout the Project and committing to expanding this corridor to 300 m during Project rehabilitation.

The Department considers that the Project's impacts on biodiversity values would be suitability mitigated, managed and/or offset under the proposed Biodiversity Offset Strategy and recommended conditions of consent. Subject to these conditions the Department considers the impacts of the Project on biodiversity, including Koalas, are acceptable.

Air quality

Potential adverse air quality impacts from the Project were raised as an issue in 45 objecting submissions. In response, Hanson reduced its proposed extraction rate from 750,000 tpa to 530,000 tpa. Under this reduced extraction rate, when the quarry is operating at maximum daily throughput under both normal and extended operating hours, the Environment Protection Authority's (EPA) air quality assessment criteria for 24-hour PM_{10} may be exceeded at the sites of future industrial developments located adjacent to the northern and eastern boundaries of the site. No other exceedances have been predicted at any sensitive receiver locations.

The Department and EPA are satisfied that these exceedances could be prevented through Hanson's proposed proactive and reactive air quality management system, informed by a meteorological forecasting system and real-time air quality monitoring network.

Hanson has proposed a range of mitigation and management measures to minimise the air quality impacts of the development. The Department has recommended a comprehensive range of air quality conditions to ensure that air quality impacts are appropriately mitigated and managed. Subject to these requirements, the Department considers the air quality impacts of the Project are acceptable.

Noise

The Project would involve noise generating activities that have the potential to cause adverse impacts to nearby sensitive receivers. Potential noise impacts were a key issue raised in objecting community submissions on the Project.

In response to community concerns, Hanson reduced its proposed extraction rate from 750,000 tpa to 530,000 tpa and reduced its proposed 24-hour operations to avoid operations during the Night period and only operate during the Evening period on up to 20 days per annum. Hanson also committed to implementing a range of noise mitigation measures, including construction of an earth bund along the southern boundary of the site and using enclosures and silencers on plant and equipment.

The Project is not predicted to exceed EPA's noise assessment criteria at any sensitive receiver during any operational stage. While EPA raised some technical concerns regarding the Project's noise assessment, it was ultimately satisfied that the potential noise impacts of the Project could be managed through strict operating conditions.

The Department has recommended a range of conditions to minimise the Project's operational noise impacts. These conditions would require Hanson to implement leading practice noise management measures. Subject to these conditions, the Department considers the noise impacts of the Project are acceptable.

Blasting

Concerns were raised by nearby residents and landowners in relation to blasting, particularly in respect of flyrock. Hanson's blasting assessments indicated that potential overpressure, vibration and flyrock impacts can be managed through appropriate blast design practices. Hanson has also reached an agreement with the most-affected landowner (an adjacent landowner to the north) to establish an exclusion zone on that property during the early stages of the Project to ensure the safety of people and property during blast events.

Hanson has also committed to implementing a Blast Management Plan to ensure blast design achieves compliance with the relevant criteria at all sensitive receivers and that all flyrock is contained within the required exclusion zone.

The Department has recommended strict conditions to manage the potential blasting impacts of the Project. Subject to these conditions, the Department considers the Project's blasting impacts are unlikely to result in material impacts to nearby sensitive receivers and are therefore acceptable.

Other issues

The Department has assessed the impacts of the Project on other values and issues including water resources, rehabilitation and final landform, traffic and transport, social and economic, greenhouse gases, visual amenity, Aboriginal cultural heritage, historic heritage and hazards and wastes. The Department considers that, following the implementation of reasonable and feasible mitigation measures, the residual impacts of the Project can be suitably managed via strict conditions of consent.

Evaluation

The Department has carried out a detailed assessment of the merits of the Project, having regard to all of Hanson's project documentation, advice from NSW government agencies and independent experts, and all public submissions. The Department has considered the objects of the EP&A Act and relevant considerations under Section 4.15(1) of the EP&A Act.

The Department acknowledges the considerable public interest in the Project. Key community concerns related to impacts on biodiversity, air quality, noise, blasting and water resources. The Department considers that Hanson has responded appropriately to these community concerns, to advice from other government agencies and to feedback from the Department and made substantial efforts to minimise impacts, while maintaining the economic viability of the Project.

The Department has recommended a comprehensive and precautionary suite of conditions to ensure the Project complies with contemporary criteria and standards, and that its residual impacts are effectively minimised, managed, offset and/or compensated for. The recommended conditions were provided to key NSW Government agencies and their comments taken into account in finalising conditions. Hanson has reviewed and accepted the recommended conditions. The Department considers that the conditions reflect current best practice for the regulation of hard rock quarrying projects in NSW.

The Department recognises that the proposed quarry expansion would contribute a range of high-quality construction materials to local and regional markets. It would contribute to the supply of materials for construction of housing and infrastructure projects in the Mid North Coast region of NSW.

The Department also recognises that the proximity of the Project's hard rock resource to the existing approved operations allows for the utilisation of existing infrastructure, avoiding the additional costs and environmental impacts that would be involved in establishing an alternative site. Additionally, the site's location adjacent to the Pacific Highway facilitates safe and efficient distribution of products to local and regional markets. The Department accepts there is a strategic need for hard rock quarry materials in the Mid North Coast region and considers the site to be well-suited for the Project.

The Department also considers that the Project would result in significant economic benefits to the region and to the State of NSW through the supply of materials critical to the construction industry and is therefore justified from an economic efficiency perspective.

The Department has carefully weighed the environmental impacts of the Project against the significance of the Project's identified hard rock resource and the wider socio-economic benefits associated with extending the operation of the quarry for a further 30 years under a contemporary development consent. On balance, the Department considers that the benefits of the Project outweigh its residual costs and that the Project is in the public interest and is approvable, subject to the recommended strict conditions of consent.

Contents

1 Introduction

1. Hanson Construction Materials Pty Ltd (Hanson) owns and operates Sancrox Quarry. The quarry is located approximately 8 kilometres (km) west of Port Macquarie in the Port Macquarie-Hastings local government area and Mid-North Coast region of New South Wales (see **Figure 1**).

2. The quarry produces a range of hard rock aggregate products and fill materials used locally and regionally for construction of civil infrastructure.

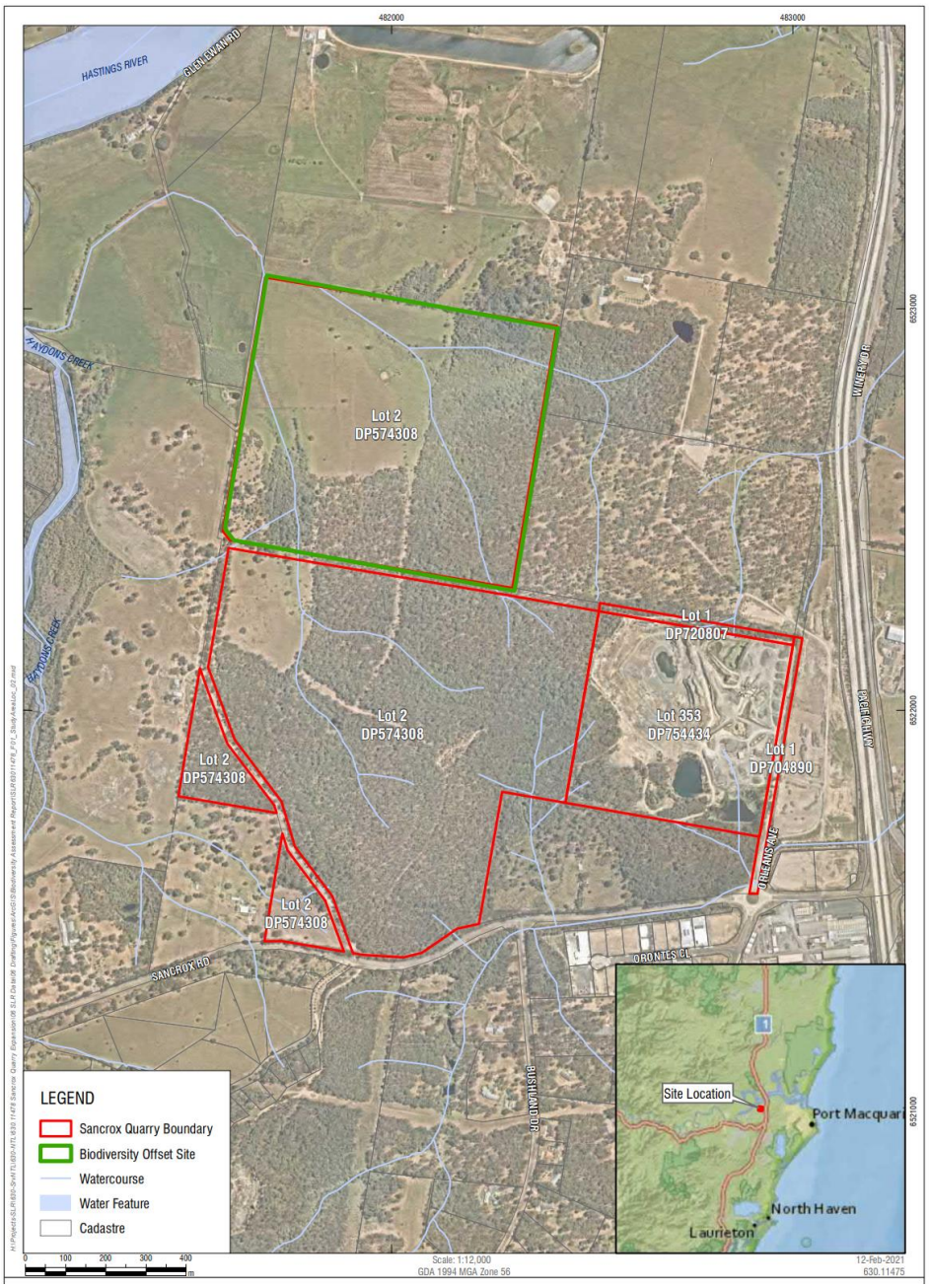

Figure 1 | Local context map

2 Project

3. The quarry currently operates under several development consents issued by predecessors to the current Port Macquarie-Hastings Council (Council). DA 1995/193 was approved on 19 November 1995, DA 2004/609 was approved on 10 January 2005 and DA 2006/497 was approved on 11 December 2006.

4. On 10 July 2019, Hanson submitted a State significant development (SSD) application and accompanying Environmental Impact Statement (EIS) for the Sancrox Quarry Expansion Project (the Project) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The application sought approval to expand the quarry into new areas to extract, process and transport up to 750,000 tonnes per annum (tpa) of hard rock material over a 30-year period. The application also sought approval to construct and operate concrete recycling and batching facilities that would recycle and produce up to 20,000 tpa, and an asphalt production plant that would produce up to 50,000 tpa.

5. Following exhibition of the Project (see **Section 5**) and subsequent consultation with government agencies and the community, Hanson scaled back several aspects of the proposal. Key changes included:

    - reducing the proposed annual production limit from 750,000 tpa to 530,000 tpa;
    - reducing the total development footprint from 60.60 ha to 47.38 ha to avoid an Aboriginal scarred tree and 13.21 ha of native vegetation clearing;
    - reducing the proposed hours of operation from 24 hours per day to 5 am to 10 pm, with evening hours (6 pm to 10 pm) to be utilised in response to market demand; and
    - reducing the number of extraction stages over the life of the Project from five to three.

6. A comparison of the key components of the existing and currently proposed development is provided in **Table 1**. The proposed site infrastructure layout and sequence of extraction is shown in **Figure 2** and **Figure 3** respectively. A detailed description of the Project is provided in the EIS (see **Appendix A**).

Table 1 | Key aspects of the existing and proposed development

Aspect	Existing development	Proposed Development
Operational workforce	15 full time equivalent (FTE) employees	25 FTE employees

Aspect	Existing development	Proposed Development
Quarry products	Hard rock aggregates	Hard rock aggregates, concrete and asphalt
Production limit	185,000 tpa with a temporary increase to 455,000 tpa between March 2014 and March 2019	530,000 tpa quarry products 20,000 tpa concrete 50,000 tpa asphalt
Imported materials	None	Up to 20,000 tpa concrete for recycling Bitumen for production of asphalt
Footprint	17.18 hectares	47.38 hectares
Depth of extraction	-14 m Australian Height Datum (AHD)	-40 m AHD
Quarry method	Open cut extraction methods including excavation, drill, blast, load and haul	No change
Processing method	Rock crushing, screening and washing on site	Relocation and ongoing operation of existing processing facilities New concrete batching plant to produce up to 20,000 tpa New concrete recycling facilities to process up to 20,000 tpa New asphalt production plant producing up to 50,000 tpa

Aspect	Existing development	Proposed Development
Hours of operation	Quarry Operations 7 am to 5 pm Monday to Friday 7 am to 1 pm Saturday Truck Movements and Equipment Loading 7 am to 11 pm Monday to Friday 7 am to 1 pm Saturdays, Sundays and Public Holidays Additional Operations Operations between 11 pm and 7 am on up to 20 days per year	Quarry Operations 5 am to 10 pm seven days per week Truck Movements and Equipment Loading 5 am to 10 pm seven days per week Additional Operations Processing and loading activities permitted between 10 pm and 5 am on a maximum of 20 days per year
Blasting	9 am to 3 pm Monday to Friday	No change
Product transport	42 laden truck movements per day	200 laden truck movements per day
Rehabilitation and final landform	Not specified.	Benched quarry walls and quarry floor at RL – 40 m AHD. Final void would be inundated naturally and benches above inundation level revegetated with endemic species.

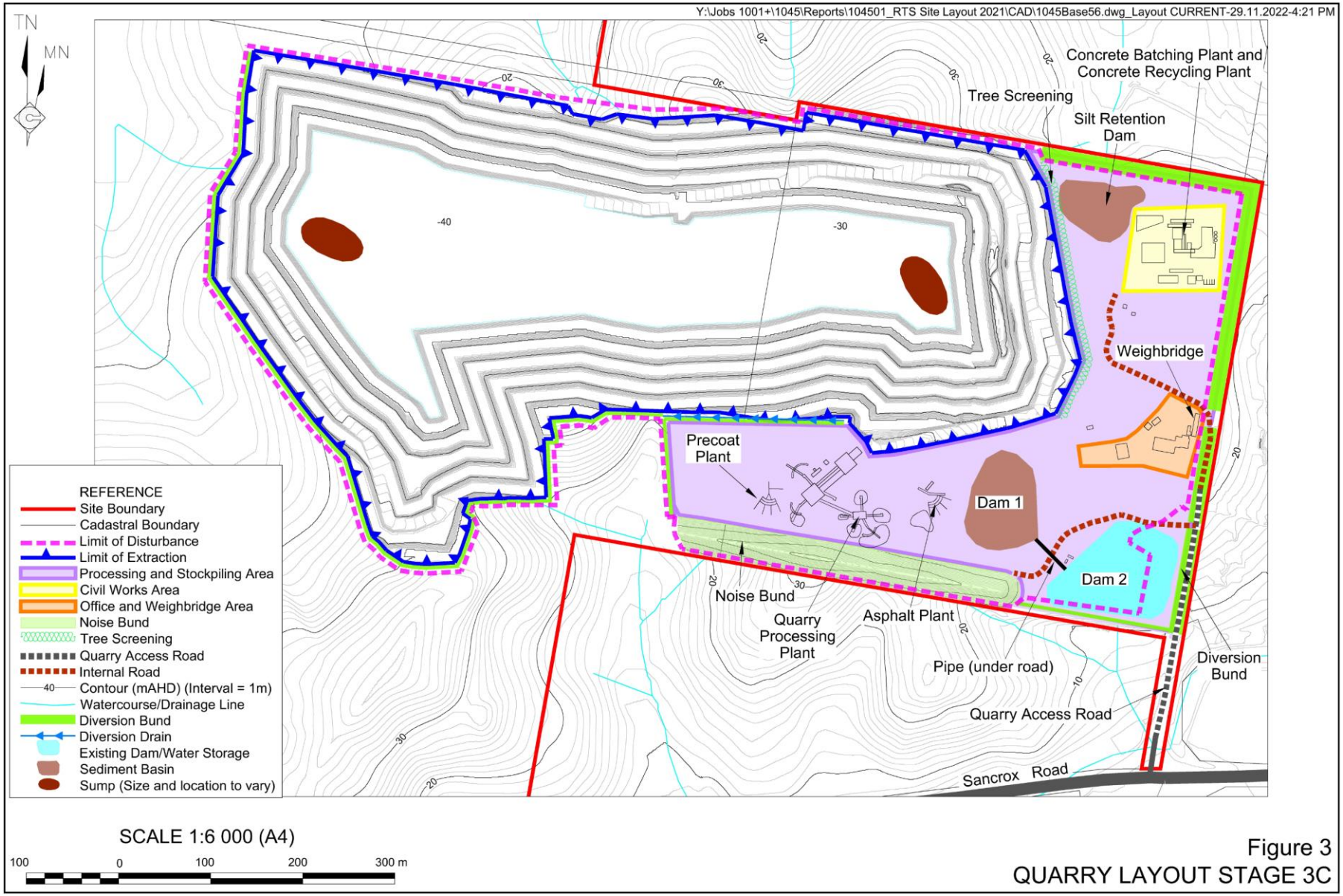

Figure 2 | Site infrastructure layout

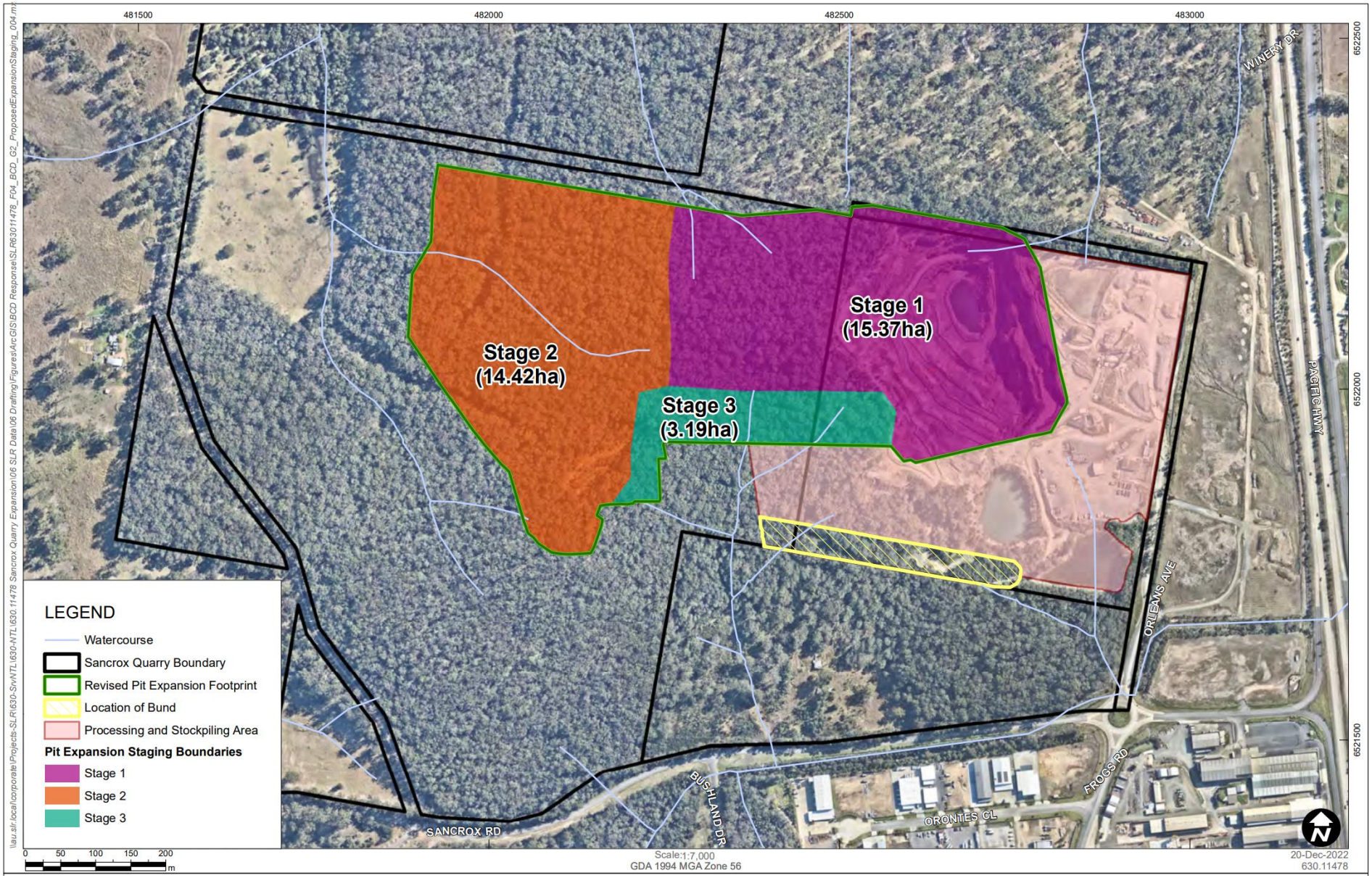

Figure 3 | Extraction staging

3 Strategic context

3.1 Project Setting

7. The site has been owned and operated by Hanson as a hard rock quarry since 1998.

8. Land to the north, east and south of the site has received Council approval for industrial development. Construction has commenced on an industrial estate adjoining the eastern quarry boundary and on the access roads to the approved industrial precinct to the north.

9. The Pacific Highway is located approximately 175 metres (m) to the east of the site, while Sancrox Road is located approximately 230 m to the south.

10. The land immediately to the west of the existing quarry contains remnant native vegetation.

11. The closest residence to the site is approximately 200 m to the southwest, along Sancrox Road. A number of rural residences are also located along Bushland Drive to the south, the closest being 500 m from the site.

12. To the south of the quarry, beyond Sancrox Road, is an industrial precinct consisting of various transportation, industrial and commercial businesses. A winery, horse-riding business and residential housing estate are also located further to the east of the Pacific Highway.

13. Directly south of the quarry is an environmental conservation area, Zoned E2 – Environmental Protection.

3.2 Resource and markets

14. Hanson has identified a range of hard rock resources within the proposed Project area. The resource is considered to be high quality hard rock aggregate, typically used for construction projects within the Port Macquarie and Mid-North Coast region.

15. The main markets serviced by the quarry are located to the east, north and south and are accessed via the Pacific Highway's Sancrox Interchange. Hanson advises that around 70% of product sales in 2019 supplied major infrastructure and commercial developments.

16. Population forecast data presented in the EIS indicates that the population of the Port Macquarie area is expected to increase significantly in the coming decades, driving demand for construction materials in the local area (see Section 6.7).

3.3 Strategic policy

17. The quarry is identified as being locally and regionally important to economic growth in the *Mid-North Coast Regional Strategy 2014 – 2034*. This strategy identifies that many industries in the region depend on environmental and natural resources such as extractive materials. The strategy goes on to highlight the importance of protecting lands which are identified as having extractive resources of regional significance from sterilisation through inappropriate land use.

18. The *North Coast Regional Plan 2041* similarly recognises the importance of protecting significant extractive resources to support ongoing economic growth in the region. The plan identifies the need to "plan for the ongoing productive use of lands with regionally significant construction material resources in locations with established infrastructure and resource accessibility".

19. The expansion and ongoing operation of the quarry, being a known regionally significant construction material resource in a location with established infrastructure and access to the Pacific Highway, would align with the principles and goals of these strategic plans to support projected growth in the region.

3.4 NSW Koala Strategy

20. The *NSW Koala Strategy 2022* sets out the actions that the NSW Government will undertake towards the goal of doubling Koala numbers in NSW by 2050. The strategy identifies the Port Macquarie Koala population as one of 19 focus populations for investment and conservation action. While the strategy primarily relates to targeted government action and investment rather than development assessment, it highlights the relative importance of the Port Macquarie Koala population and the need to invest in Koala habitat conservation initiatives in this area. While the quarry expansion would impact existing Koala habitat on the site, the Project incorporates measures that align with the koala recovery goals of the strategy, including a local land-based offset that protects existing koala habitat and revegetation of existing cleared areas of the site to create additional high quality koala habitat and food resources for the local koala population (see **Section 6.1**).

3.5 Urban land interactions and planning

21. The Project area is discussed within Council's *Greater Sancrox Area Structure Plan* dated 2015. This plan notes that Council is subject to a Ministerial Direction when considering plans prepared to re-zone lands to ensure that the future extraction of State or regionally significant reserves of coal, other minerals, petroleum or extractive materials are not compromised by inappropriate development. For this reason, the existing quarry and its proposed extension area

have not been included within the plan's study area for potential future rezoning for urban purposes.

22. The Project site is also located directly north of the planning investigation area identified in Council's *Draft Structure Plan for Fernbank Creek and Sancrox Villages* dated February 2021 (Draft Structure Plan, see **Figure 4**). Council is investigating the area to cater for the long-term growth of Port Macquarie and related demand for new urban land.

23. Council has excluded the quarry site from its proposed investigation areas for urban land. The Draft Structure Plan identifies the quarry as a "significant regional resource", particularly for the supply of aggregates and construction materials to the construction industry. The draft plan also includes an economic objective to "Ensure land use does not restrict or prohibit the development potential of important extractive resources".

24. Council has also prepared the Le Clos Sancrox Planning Proposal to rezone land south-west of the quarry site from rural to urban uses. The planning proposal specifically identifies potential land use conflict with the quarry and provides an additional undeveloped ecological corridor in the north-east corner to "provide a larger buffer to the existing quarry and any expansion, should it be approved."

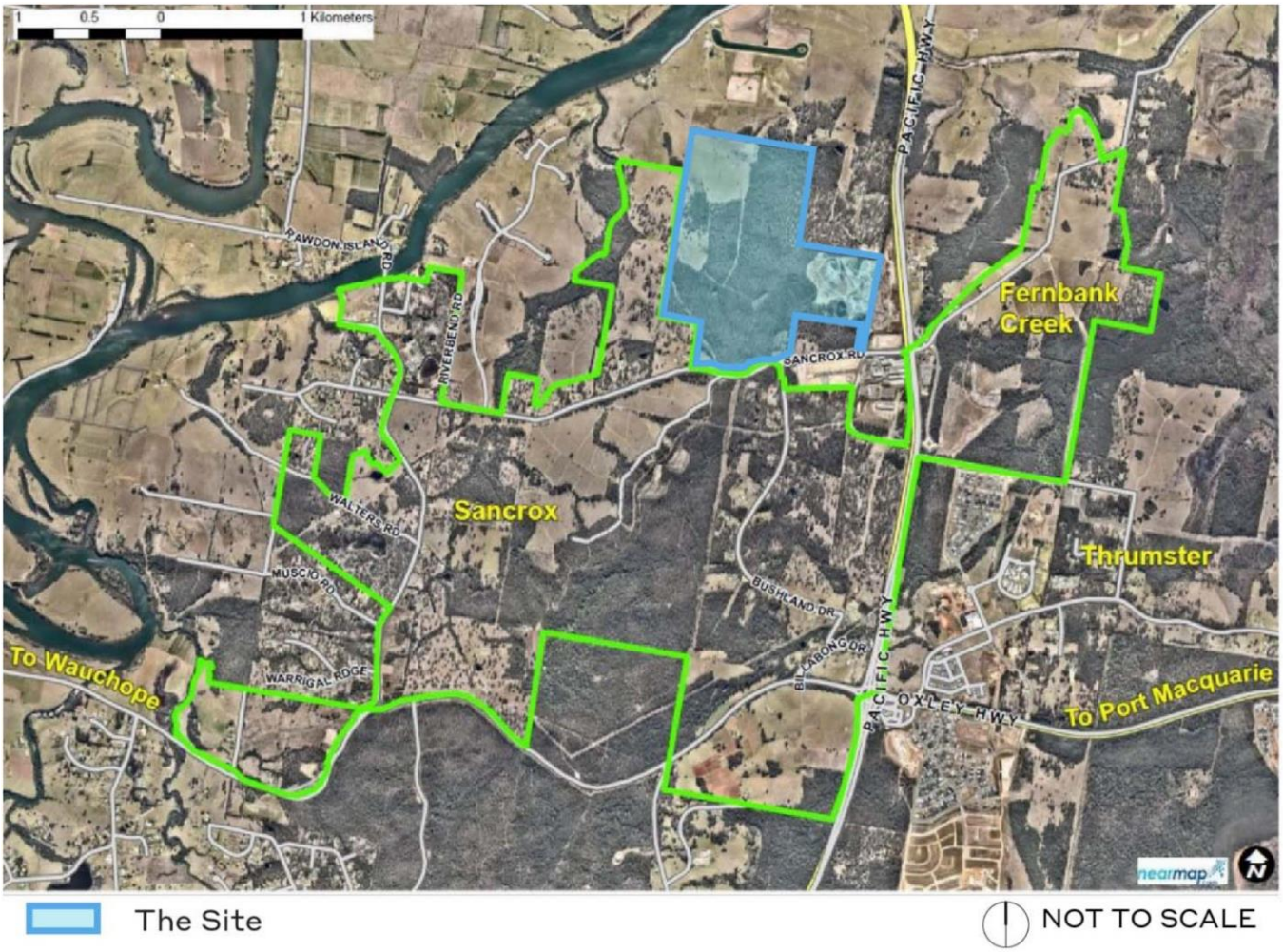

Figure 4 | Fernbank Creek and Sancrox Planning Investigation Area

4 Statutory context

4.1 Permissibility and assessment pathway

25. Details of the legal pathway under which consent is sought and the permissibility of the project are provided in Table 2 below.

Table 2| Permissibility and assessment pathway

Consideration	Description
Assessment pathway	State significant development The Project is an extractive industry development that would extract more than 500,000 tonnes of extractive materials per year from a total resource of more than 5 million tonnes. Accordingly, the Project is declared to be State significant development (SSD) under section 4.36 of the EP&A Act, as it meets the criteria specified in section 7 of Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP).
Consent authority	Independent Planning Commission (the Commission) The Commission is the declared consent authority under section 4.5(a) of the EP&A Act and section 2.7(1) of the Planning Systems SEPP as more than 50 unique public submissions objecting to the Project were received.
Permissibility	Permissible with consent Hanson owns the current quarry site and the proposed extension area to the west. The Project would be located on land zoned RU1 (Primary Production) under the *Port Macquarie-Hastings Local Environmental Plan 2011* (Port Macquarie-Hastings LEP). The Project is defined as development for the purpose of "Extractive industries" under the Port Macquarie-Hastings LEP, which is permitted with consent in the RU1 zone. Furthermore, section 2.9(b)(i) of the State Environmental Planning Policy (Resources and Energy) 2021 provides that development for the purpose of extractive industry is permissible with development consent on land on which development for the purpose of agriculture may be carried out, which includes the proposed Project site. Therefore, the Department considers that the Project is permissible with development consent

4.2 Integrated and other NSW approvals

26. Under section 4.41 of the EP&A Act, several approvals are integrated into the SSD approval process and consequently are not required to be separately obtained for the Project. These include:

    - approvals relating to heritage required under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977*; and
    - certain water approvals under the *Water Management Act* 2000 (WM Act).

27. Under section 4.42 of the EP&A Act, several other approvals (if required) cannot be refused and must be granted in terms substantially consistent with any consent granted for the Project. These include:

    - consents under the *Roads Act 1993*; and
    - an EPL under the *Protection of the Environment Operations Act 1997*.

28. The Department has consulted with the relevant government authorities responsible for these other approvals (see **Section 5**) and considered their advice in its assessment of the development (see **Section 6**).

4.2.1 Environment protection licence

29. Hanson holds an existing EPL for operations at the quarry (EPL 5289). A licence variation would be required, should development consent be granted for the Project.

4.2.2 Water licences

30. The Project is predicted to require up to 22 megalitres (ML) per year of licensed groundwater allocation from the New England Fold Belt Coast Groundwater Source to account for seepage into the quarry pit.

31. The Project may also require an additional 6.5 ML per year of licensed groundwater allocation to offset potential water deficits during Stage 1 in dry years. Hanson holds 38 ML per year of unutilised groundwater allocation from the Hastings River Coastal Floodplain Alluvial Groundwater Source under Water Access Licence (44557), which could be utilised if required. Alternatively, additional allocation could be obtained from the New England Fold Belt Coast Groundwater Source.

32. The majority of surface water runoff that would be captured by the quarry is excluded from the WM Act's licensing provisions, being dirty water from dams solely for the capture, containment and recirculation of drainage to prevent contamination of a water source. Additionally, the

existing Water Holding Dams comply with the Harvestable Rights provisions of the WM Act and do not require any additional licensing.

33. Hanson has committed to obtaining the required licensed surface water and groundwater entitlements for the Project.

4.3 Surrender of development consent

34. Section 4.63 of the EP&A Act provides that if a development consent is surrendered as a condition of a new development consent and the new consent includes continuation of development that was previously authorised, then the consent authority:

- is not required to re-assess the likely impact of the continued development to the extent that it could have been carried out but for the surrender of the consent;
- is not required to re-determine whether to authorise that continued development under the new development consent (or the manner in which it is to be carried out); and
- may modify the manner in which that continued development is to be carried out for the purpose of the consolidation of the development consents applying to the land concerned.

35. If the Project is approved, Hanson would surrender the existing three development consents for the quarry and operations at the site would be regulated under a single contemporary development consent.

36. The consent authority is not required to re-assess the impacts of the ongoing activities of an approved project, therefore some existing elements of the approved project have not been re-assessed, including existing site infrastructure such as access roads, processing and stockpile areas and water management features.

37. The Department's assessment has, however, considered worst-case impact scenarios to ensure the full range of impacts are considered, including the cumulative impacts of the ongoing operations of the approved project. For example, noise and air quality impacts were assessed based on the maximum production rate. This approach has been reflected in the recommended conditions of consent.

4.4 Mandatory matters for consideration

4.4.1 Matters of consideration required by the EP&A Act

38. Section 4.15 of the EP&A Act sets out matters to be considered by a consent authority when determining a development application. The Department's consideration of these matters is shown in Table 3 below.

Table 3| Matters for consideration

Matter for consideration	Department's assessment
Applicable environmental planning instruments	Appendix E
Issues raised in submissions	Section 5 - Engagement & Section 6 - Assessment
The likely environmental, social and economic impacts	Section 6 - Assessment
The suitability of the site for the development	Sections 3 - Strategic Context and Section 6 - Assessment
EP&A Regulation	Appendix E
The public interest	Section 5 - Engagement, Section 6 - Assessment & Section 7 - Evaluation

4.4.2 Objects of the EP&A Act

39. In determining the application, the consent authority should consider whether the project is consistent with the relevant objects of the EP&A Act (s 1.3) including the principles of ecologically sustainable development. Consideration of those factors is described in Appendix E.

40. As a result of the analyses in Appendix E, the Department is satisfied that the development is consistent with the objectives of the EP&A Act and the principles of ecologically sustainable development (ESD).

4.4.3 Biodiversity assessment

41. Section 7.9(2) of the *Biodiversity Conservation Act 2016* (BC Act) generally requires all applications for SSD to be accompanied by a Biodiversity Development Assessment Report (BDAR). However, clause 28(1) of the *Biodiversity Conservation (Savings and Transitional) Regulation 2017* provides that "The former planning provisions continue to apply … to the determination of a pending or interim planning application".

42. The Department notes that the Project is a "pending or interim planning application" under this regulation. As a result, although the *Threatened Species Conservation Act 1995* (TSC Act) was repealed by the BC Act, some provisions of the TSC Act that would be in force if it had not been repealed (such as assessment guidelines) continue to apply to the Project.

43. For this reason, the application was accompanied by a Biodiversity Assessment Report (BAR) and Biodiversity Offset Strategy (BOS) prepared in accordance with the *2014 Framework for Biodiversity Assessment – NSW Biodiversity Offsets Policy for Major Projects* (FBA), rather than a BDAR.

44. Because the development application was lodged before 1 March 2020, the Project must also be assessed under SEPP 44 (see **Section 6.1** and **Appendix E**) as it existed at the time of the application, despite more recent amendments to SEPPs governing impacts of developments on Koalas.

4.5 Commonwealth matters

45. Hanson considered in the EIS that the Project was not likely to have a significant impact on any Matters of National Environmental Significance listed under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Therefore, Hanson did not refer the application to the (now) Commonwealth Department of Climate Change, Energy, the Environment and Water (AG DCCEEW) to determine whether the Project was a 'controlled action' requiring approval under the EPBC Act.

46. However, following additional biodiversity assessment as part its Submissions Report, Hanson advised that it is intending to refer the Project to the Commonwealth based on potential impacts on the Koala (*Phascolarctos cinereus*), which is a listed threatened species under the EPBC Act.

47. Should the Project be declared a 'controlled action' by AG DCCEEW, it cannot be assessed for the Commonwealth by the NSW government in accordance with the Bilateral Agreement between the NSW and Commonwealth governments, because of Hanson's late referral. Hanson would be required to obtain approval under the EPBC Act from AG DCCEEW separately.

5 Engagement

5.1 Department's engagement

48. The Department publicly exhibited the Project from 31 October to 11 December 2019 (42 days). The Project was made available on the Department's website and in hardcopy at:

    - Service NSW Centres;
    - Port Macquarie-Hastings Council's main office; and
    - the Nature Conservation Council's office in Sydney;

49. The Department advertised the exhibition in the Port Macquarie Express and the Port Macquarie News on 30 October 2019. The Department also notified landholders in proximity to the quarry site and the Birpai Local Aboriginal Land Council and requested advice from key government agencies and public authorities, including Council.

50. The Department met with several nearby landowners and carried out site visits at the quarry on 10 February 2020, 15 February 2023 and 1 May 2023. Additionally, the Department participated in a community information session on 10 February 2020, at Rydges Hotel in Port Macquarie. At this meeting, the Department provided an overview of the assessment process and received feedback on the community's views about the Project. Presentation and meeting notes from the session have been previously made publicly available and are included in **Appendix B**.

51. In undertaking these activities, the Department considers that its notification processes met the requirements of the EP&A Act and *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation), and that related public participation statutory obligations have been satisfied.

5.2 Summary of submissions

52. During the exhibition period, the Department received a total of 264 public submissions, including 255 from individuals and 9 from special interest groups (see **Appendix B**). These submissions comprised:

    - one (less than 1%) expressing support for the Project;
    - 259 (98%) objecting to the Project, including 250 from individuals and nine from special interest groups; and
    - four (1.5%) providing comment on the Project, all from individuals.

53. Of the 259 objecting submissions, 140 were considered to be unique submissions. The remaining 119 were form letters that have not been counted as unique submissions.

54. A summary of the public submissions received on the Project is presented in Table 4. Copies of all submissions are included in Appendix B.

Table 4 | Key aspects of the existing and proposed development

Proximity	Submissions	Support	Object	Comment
Within approximately 5 km of the Project	117	0	113	4
Between approximately 5 km and 100 km of the Project	105	1	104	0
Greater than 100 km from the Project	42	0	42	0
Total	264	1	259	4

55. After the close of the exhibition period, the Department received several additional representations from members of the public objecting to the proposal. The issues raised in these representations were consistent with those raised in public submissions.

56. A summary of the issues raised in public submissions in provided in Section 5.4.

5.3 Agency advice

57. Council and several State government agencies raised issues or expressed concerns over specific aspects of the Project and/or provided recommendations relating to their administrative and regulatory responsibilities. A copy of all advice received from agencies is attached in Appendix D.

58. Table 5 below provides an overview of the key comments made by public authorities. Further consideration of agency advice is provided in Section 6.

Table 5 | Summary of agency advice

Agency	Summary of advice
Biodiversity Conservation and Science group within NSW Department of Climate Change, Energy,	• Objected to the magnitude of clearing proposed for the Project and expressed concerns over the impacts on biodiversity. • Requested:

Agency	Summary of advice
the Environment and Water (BCS)	– updates to the EIS's BAR to align with the requirements of the FBA; – further consideration of avoidance and minimisation of biodiversity impacts, including biodiversity connectivity, the development footprint, threatened species surveys and site rehabilitation efforts, and a number of minor corrections to the assumptions used to inform biodiversity credit calculations; – further engagement with Registered Aboriginal Parties; and – avoidance of an Aboriginal scarred tree. • Noted that it did not identify any issues with flooding or flood risk. • Provided several post-approval recommendations regarding biodiversity offsetting measures, a Rehabilitation Management Plan, and a Koala population monitoring program. • In its final advice, BCS maintained that it did not support the proposed level of biodiversity impacts and requested further avoidance of impacts to native vegetation. It also raised a number of concerns with technical aspects of Hanson's proposed mitigation measures.
Heritage Council of NSW	• Noted that there were no State Heritage listed items within the Project area. • Requested confirmation that a National Trust listed grave site identified in the Sancrox area would not be impacted by the Project.
Environment Protection Authority (EPA)	• Requested additional information on noise modelling used to assess potential impacts on nearby receivers, and proposed noise mitigation measures. • Requested further assessment of road noise impacts and sought clarification on the proposed noise bund's construction footprint and visual impacts. • Raised concerns over predicted air quality exceedances and the adequacy of potential impacts at adjacent approved but not yet constructed industrial receivers. • In its final advice, the EPA provided recommended conditions of consent related to noise and air quality.

Agency	Summary of advice
Mining, Exploration & Geosciences (MEG) Division of the Department of Regional NSW	• Requested a copy of the 2015 resource investigation report referenced in the EIS (see Appendix A)
NSW Rural Fire Service (RFS)	• Noted that the Project is located on land identified as bush fire prone land as mapped by Council. • Provided recommended conditions of consent requiring a Fire Management Plan to be prepared in consultation with RFS's Midcoast Fire Control Centre, adequate Asset Protection Zones be established and maintained, and installation of a 20,000 litre water tank for firefighting purposes.
Transport for NSW (TfNSW)	• Noted that it had considered potential future expansion of the quarry and other planned industrial development of the area when upgrading the Pacific Highway's Sancrox Interchange. • Noted Hanson's commitment to implement a Code of Conduct to manage road haulage.
Water Group within NSW Department of Climate Change, Energy, the Environment and Water (Water Group)	• Raised concerns over the EIS's Groundwater Assessment and requested a peer review of its groundwater model, a revised assessment in accordance with applicable modelling guidelines and the *Aquifer Interference Policy 2012* (AIP), and further details on the proposed acquisition and security of appropriate water access licences. • Requested further details on surface and groundwater entitlements including water access licences. • Made several recommendations on post approval matters. These matters are discussed further in Section 6.2.

5.4 Council submission and advice

59. Council made the following comments on the Project:

- Noted the economic benefits of the Project to the community;
- Raised concerns with the application process with regards to adequate community consultation;

- Requested that Council's strategic planning documents on the Fernbank Creek and Sancrox Planning Investigation Area be considered as part of the assessment process;
- Requested that Hanson agree to a number of developer contributions to Council, including for use of Council's reticulated water supply and heavy haulage on local roads, to which Hanson agreed;
- Raised issues with the BAR's methodology and impacts to the sub-regional biodiversity corridor that traverses the site;
- Requested that Hanson's proposed air quality mitigation measures are reflected in any conditions of consent;
- Noted that the Sancrox Employment Land and Quarry Planning Agreement requires dedication of the access road land to Council prior to any development consent being granted on the land; and
- Following review of Hanson's Submissions Report, Council requested a range of clarifications regarding the revised BAR, Air Quality Assessment and Noise Assessment, which Hanson subsequently provided.

60. A link to the submissions and advice provided by Council is provided in **Appendix B**.

61. The Department has considered Council's advice in **Section 6** and in the development of its recommended conditions (see **Appendix F**).

5.5 Community and special interest group submissions

62. The frequency with which issues were raised in objecting community and special interest group submissions, including a breakdown of total and unique submissions, is depicted in **Figure 5**. Full copies of all submissions are provided in **Appendix B**.

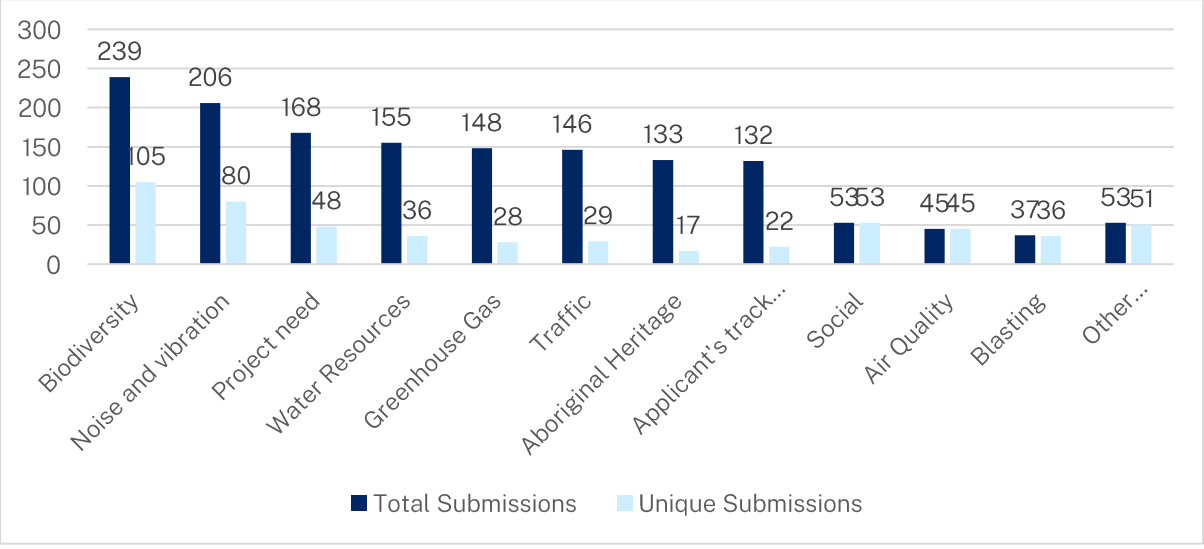

Figure 5 | Key issues raised in community and special interest group submissions

63. The dominant issues raised in submissions were concerns about biodiversity impacts, particularly in relation to impacts to Koalas from the proposed clearing of native vegetation. Closely following these were concerns about noise and vibration impacts, the need for the Project, and impacts to water resources, greenhouse gases, traffic and transport and Aboriginal heritage. The Applicant's track record was also consistently raised as a concern in submissions. Other issues raised included potential social, air quality, blasting, land use, and visual amenity impacts. Many submitters advised they did not object to the existing operation of the quarry but were opposed to the proposed increase in scale of operations.

64. The key issues raised in community and special interest group submissions have been given detailed consideration in the assessment of the Project's impacts, as set out in **Section 6**.

5.6 Submissions Report

65. On 18 December 2019, the Department requested that Hanson prepare a Submissions Report that responded to the issues raised in agency advice and public submissions received during exhibition of the Project.

66. On 21 May 2021, Hanson lodged its Submissions Report, which was published on the Department's website and is attached as **Appendix C**.

67. The Report provided Hanson's consideration of issues raised in submissions and agency advice and included several changes to the Project to address these issues. These included reductions (as set out in **Section 2**) to the:

- proposed annual extraction rate;
- proposed operating hours; and
- disturbance area.

68. In response to comments from the Department and other agencies, the Report also included additional assessment of the Project's air quality, noise, and water resource impacts. These assessments included clarification of the noise and air quality modelling and revised Project impacts, as well as a peer review of the groundwater model.

69. The Department also requested that Hanson consult further with BCS regarding the proposed vegetation clearing and assessment of Koala habitat. Hanson undertook further engagement with BCS, reduced the Project footprint and provided a revised assessment of biodiversity impacts. The Department also commissioned an independent peer review of the Project's BAR. The Department's consideration of the biodiversity impacts of the Project is provided in **Section 6.1**.

70. Additional advice on the Submissions Report was sought from key agencies and provided to Hanson in conjunction with several requests for additional information by the Department. Hanson's responses to these requests have been carefully considered in the Department's assessment and evaluation of the Project. Where necessary, they have also been provided to relevant agencies for comment. Copies of the Department's information requests, and Hanson's responses are available in Appendix C.

6 Assessment

71. Due to the proposed clearing of remnant vegetation and the relative proximity of the Project site to existing industrial and residential land uses, the Department considers that the key assessment issues relate to biodiversity, air quality, noise and vibration, and blasting impacts. Given it is an extractive industry proposal involving the ongoing establishment of voids in the landscape, the Department considers that potential water, and rehabilitation and final landform impacts are also important assessment issues for the Project. These issues are discussed in Sections 6.1 to 6.6 below.

72. The Department's assessment of other issues is provided in Section 6.8.

6.1 Biodiversity

6.1.1 Introduction

73. Approximately 29.89 ha of native vegetation would be cleared for the Project. Potential biodiversity impacts from the Project include loss of native vegetation and fauna habitats and habitat fragmentation or isolation, particularly in regard to Koala habitat. A total of 239 submissions raised impacts on biodiversity as a concern.

74. The EIS (see Appendix A) included a Biodiversity Assessment Report (BAR) and Biodiversity Offset Strategy (BOS) prepared by SLR Consulting in accordance with the *NSW Framework for Biodiversity Assessment* (FBA) and the *NSW Biodiversity Offsets Policy for Major Projects* (Offsets Policy).

75. The BAR was updated and revised on several occasions to reflect the amended quarry disturbance area and address technical issues raised by BCS (see Appendix C). Hanson also commissioned Biolink Ecological Consultants (Biolink) to undertake an additional assessment of potential Koala impacts (the Koala Assessment) in response to BCS concerns regarding the level of impacts to Koala habitat.

76. The Department visited the site on three occasions, including once with BCS to gain an understanding of the biodiversity values of the site, and commissioned an independent peer review of the Project's BAR, which was undertaken by Alex Cockerill of WSP. Mr Cockerill has expertise in biodiversity assessment for major infrastructure and mining projects and extensive experience undertaking peer reviews, preparing advice and providing expert witness services on biodiversity planning matters. Mr Cockerill is also a member of the Independent Expert Advisory Panels for both mining and energy transition, which were established to provide the

Department and the Commission access to specialist knowledge and expert advice when assessing such applications under the EP&A Act.

6.1.2 Predicted impacts

77. Two Plant Community Types (PCTs) were identified within the proposed disturbance area, neither of which align with any threatened ecological communities (TECs) under the *Biodiversity Conservation Act 2016* (BC Act) (see **Figure 6**).

78. These PCTs are in moderate to good condition and provide habitat for threatened species which generate ecosystem credits that would require offsetting. A third PCT, commensurate with the *Subtropical Coastal Floodplain Forest of the NSW North Coast Bioregion TEC* was recorded within the broader Project site. However, Hanson amended the Project design in response to feedback from the Department to avoid direct impacts to this ecological community.

79. Eight threatened species listed under the BC Act were recorded on site. Seven of these are bat species that utilise the site as foraging habitat and thereby generate ecosystem credits.

80. One species that generates species credits, the Koala (*Phascolarctos cinereus*), was recorded on site. Both impacted PCTs contain Koala feed trees and constitute habitat for this species.

81. The extent of impacts from the Project on vegetation communities and the associated biodiversity credits required to offset these impacts in accordance with the FBA and Offsets Policy are presented in **Table 6**.

Table 6 | Biodiversity impacts and offset credit liability

Ecological feature	Listing status (BC Act)	Direct impacts (ha)	Indirect impacts (ha)	Impact credits
Plant Community Type				
NR 247 ***Spotted Gum – Grey Ironbark open forest of the Macleay Valley lowlands of the NSW North Coast Bioregion***	Not listed	10.51	0.28	483
NR 263 ***Tallowwood – Small-fruited Grey Gum dry grassy open forest of the foothills of the NSW North Coast***	Not listed	19.38	2.50	1249
Species Credit Species				
Phascolarctos cinereus (Koala)	Endangered	29.89		777

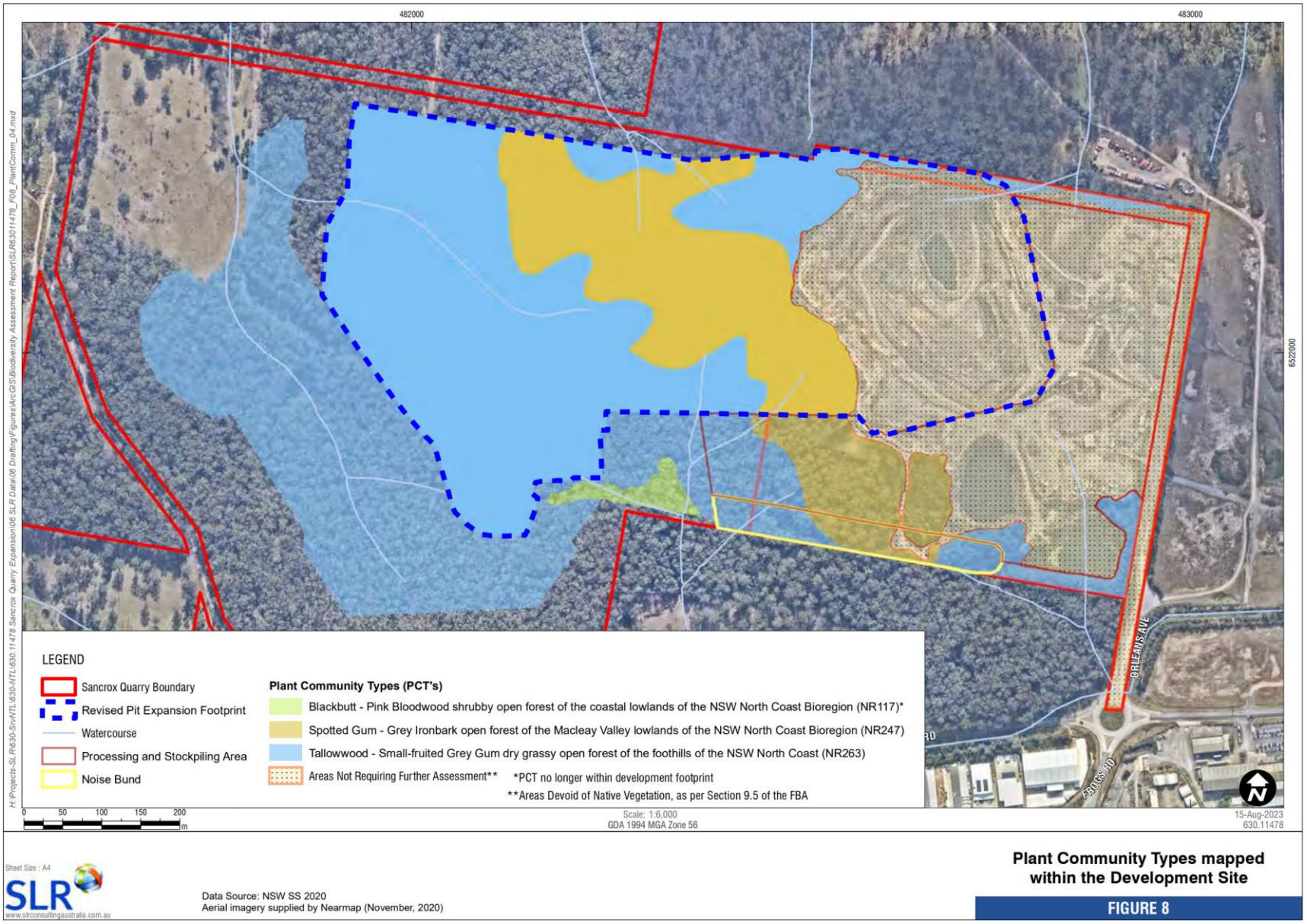

Figure 6 | Vegetation communities impacted by the Project

Impacts to Koalas

82. Targeted surveys identified evidence of resident Koalas within the Project site, including one individual recorded within the proposed disturbance area. The BAR identified that Koala food trees are distributed widely within all PCTs mapped across the Project site. All vegetation occurring on site is considered to constitute Koala habitat in accordance with the methods for identification of species credits in the FBA.

83. The Project proposes the removal of 29.89 ha of Koala habitat. The BAR identified that this would reduce the availability of foraging and breeding habitat for the local Koala population and increase barriers to movement and dispersal of Koalas in the locality, particularly in a north-south direction.

84. BCS considered that with regard to the originally proposed Project, which would have removed 43.10 ha of Koala habitat, Hanson had not sufficiently demonstrated avoidance of impacts to Koala habitat in accordance with Section 8.3 of the FBA. In response, Hanson reduced the footprint of the proposed extraction area on three separate occasions to avoid a total of 13.21 ha of Koala habitat compared with the originally proposed Project.

85. BCS maintained that, despite the reduction in the Project disturbance footprint, it did not support the Project's magnitude of impacts to Koala habitat. BCS advised that, based on its review of the available data, local, State and national Koala populations are in decline and that habitat removal is a key contributor to this decline. BCS therefore considered that the removal of 29.89 ha of known Koala habitat would significantly impact on the Port Macquarie Koala population.

86. BCS also advised that, given the impact of the 2019-2020 bushfires on Koala habitat in the area, unimpacted areas of Koala habitat (such as the Project site) hold increased importance in aiding the recovery of the local Koala population.

87. For these reasons, BCS considered that to satisfactorily meet the requirements of Section 8.3 of the FBA, the proposed quarry expansion should be substantially reduced to only impact areas of degraded vegetation with limited or no Koala food trees. In practical terms, this would equate to a negligible amount of allowed clearing.

88. In response to BCS's advice, Hanson provided further expert assessment (Biolink's Koala Assessment) of the impacts of the Project on the local Koala population. This assessment found that, while the Koala food trees present within the disturbance area are considered important high-use food trees, they are primarily categorised as secondary Koala food trees, indicating the carrying capacity of the site would be low relative to higher quality habitat in the general

area. As such, Biolink concluded that the Project would result in the displacement of 1 – 2 individual Koalas to nearby habitat as a worst-case scenario.

89. The Department acknowledges that retention of unimpacted Koala habitat following the 2019-2020 bushfires is important for the recovery of the local population. However, the peer review of the BAR concluded that the proportion of habitat that would be impacted by the Project is small compared to the extent of available habitat within the locality. Furthermore, the impacts would be staged over the life of the Project, with clearing to be undertaken progressively over several decades. This would mitigate the direct loss of the unburnt habitat on the Project site against the regeneration of the extensive areas of available habitat, including those impacted by the 2019-2020 bushfires.

90. The Department notes that Section 9.1 of the FBA establishes impact thresholds under which the assessment and offsetting of unavoidable impacts is considered. The highest impact threshold (threshold 1) relates to impacts that are considered "complicated or severe". This includes impacts that would cause the extinction of the species from an IBRA[1] subregion, or impacts that would significantly reduce the viability of the species or a species population.

91. For projects that would have threshold 1 impacts, the FBA requires the consent authority to consider whether to refuse the project, require modifications to the project to reduce the severity of the impact, or to require supplementary measures with respect to that impact. For unavoidable impacts that do not meet the threshold 1 criteria, the FBA requires offsets to be determined.

92. The Department considers that, based on the findings of the BAR, the Koala Assessment and the BAR's peer review, the Project would not significantly reduce the viability of the local Koala population and the Project's impacts are therefore not consistent with the threshold 1 impact criteria under the FBA. The Department considers that the Project's impacts on the Koala have been appropriately assessed under the lesser threshold 2 impact criteria. As such, the FBA provides that the impacts of the project must be offset and the consent authority is not required to consider refusal or modification of the project or the implementation of supplementary measures with respect to the impact.

93. Despite this, consistent with the requirements for threshold 1 impacts, Hanson have modified the project to reduce the severity of impacts by reducing the proposed disturbance area and

[1] *Interim Biogeographic Regionalisation for Australia (IBRA) represents a landscape-based approach to classifying the land surface of Australia. 89 biogeographic regions and 419 sub regions have been delineated across Australia, each reflecting a unifying set of major environmental influences which shape the occurrence of flora and fauna and their interaction with the physical environment.*

committed to implementing additional supplementary measures to mitigate the Project's impacts as described below.

94. Hanson have committed to implementing a range of measures to mitigate the Project's impacts on the Koala and to improve the quality and quantity of habitat available to the local Koala population, including:

- establishing a Biodiversity Stewardship Site in the north of the Project site to ensure a local land-based offset that both protects existing local Koala habitat and provides future habitat through revegetation of cleared lands;
- implementing a revegetation strategy for the Project site which is designed to provide an additional 25.6 ha of Koala habitat within existing cleared areas and to allow Koala movements around the expanded quarry between areas of habitat to the north and south;
- delaying clearing areas of significant Koala activity until appropriate benchmarks are met in the revegetation areas; and
- implementing a Koala population monitoring program.

95. BCS raised concerns about a number of aspects of Hanson's proposed mitigation measures, including that:

- around 8.2 ha of the areas identified for revegetation are low lying and prone to inundation, which may inhibit the growth of the higher use Koala food trees in these areas;
- the proposed revegetation benchmarks had not been adequately justified and do not require evidence of Koala utilisation of the revegetated areas; and
- the methodology for determining the areas of significant Koala activity was inadequate in that it relied on the most recent survey data on the site rather than incorporating older data collected in previous surveys.

96. The Department acknowledges that, given the concerns raised by BCS, there may be some uncertainty regarding the methodology and ultimate outcomes that will be achieved through the implementation of these supplementary mitigation measures. However, it is noted that these measures represent commitments to improve the quality and quantity of Koala habitat on the site that are in addition to the offsetting measures required under the FBA. As such, even if the effectiveness of these measures has been overestimated, the Department is satisfied that they would provide for suitable additional mitigation for the Project's impacts on Koala habitat.

97. The Department has recommended conditions requiring Hanson to implement these commitments and to also delay clearing beyond the equivalent of the stage 1 extraction area (12 ha) until appropriate benchmarks are met in the revegetation areas. The Department has also recommended a condition requiring Hanson to prepare and implement a Biodiversity and Rehabilitation Management Plan in consultation with BCS, which would establish final benchmarks for the revegetation areas.

98. Additionally, Hanson proposes to retire a total of 777 species credits to offset impacts to the Koala. The Department considers that the retirement of these credits and Hanson's local land-based offset approach would result in a net increase in securely conserved Koala habitat for the Port Macquarie Koala population.

99. Overall, the Department considers the Project's impacts on the Koala are acceptable, subject to the recommended management, mitigation and offset requirements.

Connectivity

100. The expanded extraction area would impact a 'sub-regional biodiversity corridor' mapped in the *Greater Sancrox Structure Plan 2015*, which traverses north-south through the site (see **Figure 7**). This corridor does not extend very far to the north, with connectivity limited by the Pacific Highway, cleared lands and the Hastings River. However, the corridor does provide direct connectivity with extensive areas of vegetation and Koala habitat south of the Project site.

101. Removal of vegetation for the Project would reduce the width of this corridor. The original disturbance footprint proposed in the EIS would have resulted in the removal of all remnant vegetation from this corridor in the northwest portion of the site. Following advice from BCS and WSP, the Department requested that a greater proportion of remnant vegetation be retained to improve the viability of the corridor. In response, Hanson revised the extraction area footprint to retain a north-south remnant vegetation corridor of around 100 m width. Hanson also committed to revegetating the cleared area in the northwest portion of the site, which would provide a corridor width of greater than 300 m following completion of rehabilitation. In its independent peer review, WSP advised that this width is considered acceptable for this type of secondary wildlife corridor.

102. WSP also recommended that Hanson stage its proposed clearing to maintain a minimum remnant vegetation corridor of 250 m width for the first 10 years of the Project and a minimum corridor of 200 m for at least 15 years. This would allow a minimum period of 15 years' growth in rehabilitation plantings to adequately establish Koala habitat within the existing cleared land west of the expanded pit. Hanson has adopted these recommendations and the Department has recommended conditions to this effect.

103. The Department considers that the Project's impacts on habitat connectivity are acceptable, subject to the recommended management and mitigation measures.

Indirect impacts

104. The Project has the potential to cause indirect impacts to areas of adjacent vegetation and habitat, through new and expanded edge effects associated with the expanded extraction area.

105. The BAR noted that the potential edge effects of the Project are likely to be similar to those of the existing operation, and that minimal evidence of edge effects occurring around the existing extraction area was recorded during field surveys. The BAR concluded that, while the Project would increase and relocate the zone of potential edge effects, any potential effects would be unlikely to adversely affect local populations of native flora and fauna.

106. BCS advised that the BAR had not provided sufficient information to substantiate this conclusion and considered that the Project would be likely to cause indirect impacts to retained vegetation and that these impacts should be offset. In response, Hanson has committed to retiring a total of 69 ecosystem credits (included in the totals in Table 6) to offset the potential permanent reduction in habitat quality within adjoining areas of retained vegetation. The Department and BCS are satisfied that the potential indirect impacts of the Project can be appropriately managed, and offset, through this approach.

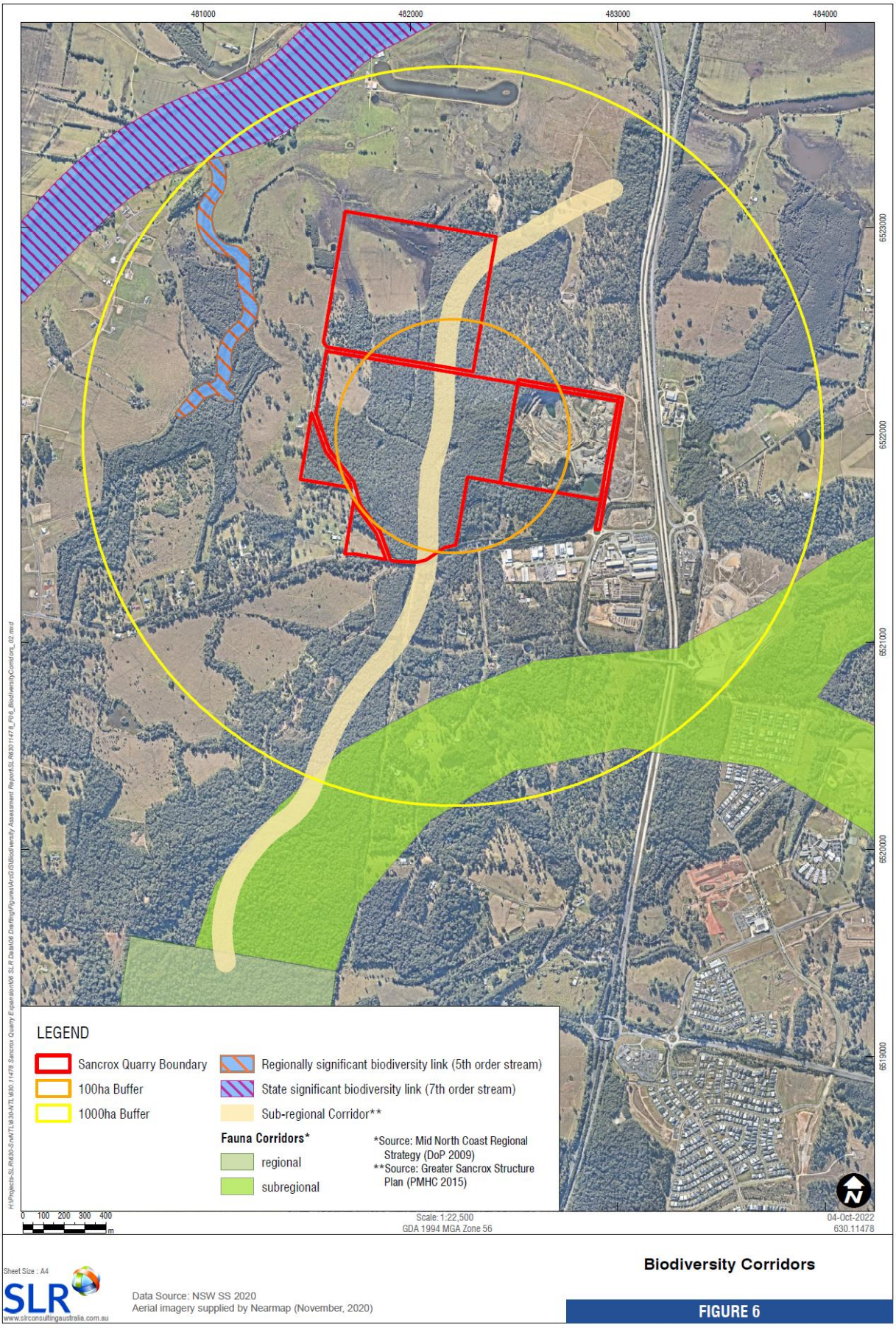

Figure 7 | Biodiversity corridors

6.1.3 Avoidance and mitigation

107. The Department acknowledges that the Project's ability to avoid impacts to biodiversity is restricted by the location of the resource and existing operation, resulting in complete avoidance being impractical. Notwithstanding this, the Department considers that Hanson has adequately demonstrated avoidance of impacts to Koalas and habitat for other threatened species through a reduction in the Project disturbance footprint which has:

- substantially reduced the proposed quantum of native vegetation clearing;
- avoided the removal of TEC vegetation; and
- allowed for retention of a north-south vegetated link and Koala habitat movement corridor across the site.

108. In response to BCS's concerns, Hanson has significantly amended the Project footprint to reduce clearing of native vegetation by approximately 13.21 ha, when compared with the originally proposed Project.

109. To mitigate impacts to Koalas, Hanson have committed to revegetating a total of 25.6 ha of existing cleared areas of the site with Koala feed trees at a planting density that would directly offset the quantity of Koala feed trees that would be lost through clearing for the project. Hanson have also committed to delaying clearing in areas of identified Koala activity, until appropriate benchmarks are achieved in these revegetation areas.

110. Hanson has also committed to mitigating biodiversity impacts by preparing and implementing a Biodiversity and Rehabilitation Management Plan (BRMP) that:

- describes the proposed short, medium, and long-term objectives and measures to implement the BOS, retain and manage remnant vegetation and fauna habitat, and rehabilitate the site;
- identifies potential risks to biodiversity and rehabilitation and contingency measures to mitigate these identified risks;
- includes a monitoring and reporting program and detailed performance and completion criteria for evaluating the performance of biodiversity and rehabilitation management, including triggers for remedial action; and
- includes a conceptual closure plan for the site.

111. The Department has recommended a condition requiring Hanson to prepare and implement a BRMP that incorporates these mitigation measures, as well as other contemporary biodiversity management practices.

6.1.4 Offsetting

112. To offset the residual biodiversity impacts of the Project, Hanson proposes to implement a BOS which includes retirement of 1,732 ecosystem credits for clearing of two native plant community types and 777 species credits for impacts on Koala habitat.

113. The BOS would be further developed in consultation with BCS, the Biodiversity Conservation Trust (BCT) and the Department and is proposed to reflect a combination of the following offset options available under the BC Act:

- land-based offsets, through establishing a new Biodiversity Stewardship Site;
- purchasing credits from the market, and/or
- paying into BCT's Biodiversity Conservation Fund.

114. Hanson proposes to establish a Biodiversity Stewardship Site on the northern portion of the site to satisfy a portion of the required offsets. Based on Council vegetation mapping, Hanson estimates that its proposed Stewardship Site would generate 191 Koala species credits and 135 ecosystem credits. The actual credit value would be confirmed through a Biodiversity Stewardship Agreement with the BCT.

115. The Department considers the proposed offset approach to be acceptable, so long as all credits associated with vegetation removal are retired prior to actual disturbance.

116. With the commencement of the BC Act on 25 August 2017, the NSW Government released a new Biodiversity Assessment Method which replaces the FBA methodology used for this Project. As a result, the credit requirements identified above may require a mathematical conversion to reasonably equivalent 'biodiversity credits' under the BC Act, so as to facilitate retirement under the new legislation. The Department has included a note in the recommended conditions to reflect these policy arrangements.

6.1.5 Summary

117. The Project proposes the removal of 29.89 ha of native vegetation which provides habitat for threatened species, including the local Koala population. The Department acknowledges that local, State and national Koala populations are in decline and that the impacts of the 2019-2020 bushfires has placed increased importance on unimpacted areas of habitat to the local Port Macquarie Koala population.

118. Recognising the sensitivity of the local Koala population and the concerns raised by BCS, Hanson commissioned additional expert assessment of potential Koala impacts of the project. Similarly, the Department commissioned an independent peer review of the biodiversity assessment for the Project.

119. The Department accepts that the Project's ability to avoid impacts to biodiversity is restricted by the location of the hard rock resource and considers that the Project has been designed to avoid biodiversity impacts where practicable. This has included maximising the use of the existing disturbed areas of the site and revising the disturbance footprint to reduce direct impacts to native vegetation and Koala habitat by 13.21 ha, when compared to the originally proposed Project. This included avoiding impacts to the *Subtropical Coastal Floodplain Forest of the NSW North Coast Bioregion TEC*, maintaining a minimum 100 m wide biodiversity corridor to the west of the expanded pit and committing to the re-establishment of a 300 m wide corridor.

120. Despite these avoidance measures, the Project would result in residual impacts on biodiversity values, including Koala habitat, through the disturbance of 29.89 ha of native vegetation.

121. While the Department accepts that retention of unimpacted Koala habitat following the 2019-2020 bushfires is important for the recovery of the local population, the peer review of the BAR concluded that the proportion of habitat that would be impacted by the Project is small compared to the extent of available habitat within the locality. Further, the impacts would be staged over the life of the Project, with clearing to be undertaken progressively over several decades. This would mitigate the direct loss of habitat on the Project site against the regeneration of extensive areas of available habitat, including those impacted by the 2019-2020 bushfires.

122. To further mitigate impacts to Koalas, Hanson have committed to revegetating a total of 25.6 ha of existing cleared areas of the site with Koala feed trees at a planting density that would directly offset the quantity of Koala feed trees that would be lost through clearing for the project. Hanson have also committed to delaying clearing in areas of identified Koala activity, until appropriate benchmarks are achieved in these revegetation areas.

123. To offset the residual biodiversity impacts of the Project, Hanson proposes to implement a BOS which includes retirement of 1,732 ecosystem credits for clearing of two native plant community types and 777 species credits for impacts on Koala habitat.

124. Hanson proposes to establish a Biodiversity Stewardship Site on the northern portion of the site to satisfy a portion of the required offsets. This would ensure a local land-based offset is provided that both protects existing local Koala habitat and provides future habitat through revegetation of cleared lands.

125. The Department considers that with the implementation of Hanson's proposed avoidance, mitigation and offsetting measures, the Project is not likely to significantly reduce the viability of the local Koala population and would result in an overall increase in available Koala habitat in the locality.

126. The Department has carefully considered the residual impacts on biodiversity values and considers that they would be suitably mitigated, managed and/or offset under the proposed Biodiversity Offset Strategy and retirement of ecosystem and species credits in accordance with the BC Act. Additionally, recommended conditions of consent would provide for sound management of retained biodiversity values on the site and assurance to the community and regulatory agencies over the management of the biodiversity impacts. Overall, the Department considers the impacts of the Project on biodiversity are acceptable, subject to the recommended conditions.

6.2 Air Quality

6.2.1 **Introduction**

127. Potential adverse air quality impacts from the Project were raised as an issue in 45 objecting submissions. This included concerns that the potential particulate matter and diesel exhaust emissions from the quarry could cause health impacts and that deposited dust would adversely impact the use of solar panels and drinking water tanks.

128. The EIS (see **Appendix A)** included an Air Quality Assessment (AQA) prepared by Environmental Resources Management Australia Pty Ltd (ERM) in accordance with the EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*. Hanson also commissioned a revised AQA and provided additional information in response to technical concerns raised in the advice received from the EPA (see **Appendix C**). The revised AQA reflected the reduced production limit of 530,000 tpa and forms the basis of the Department's assessment.

6.2.2 **Existing air quality environment**

129. Air quality in the vicinity of the Project site is influenced by particulate matter emissions from the existing quarry, combustion emissions from vehicles on local roads and the Pacific Highway, and agricultural and light industrial activities from the surrounding land uses. The AQA identified 48 representative sensitive receiver locations, including future industrial and residential developments, that would potentially experience air quality impacts from the Project (see **Figure 8**).

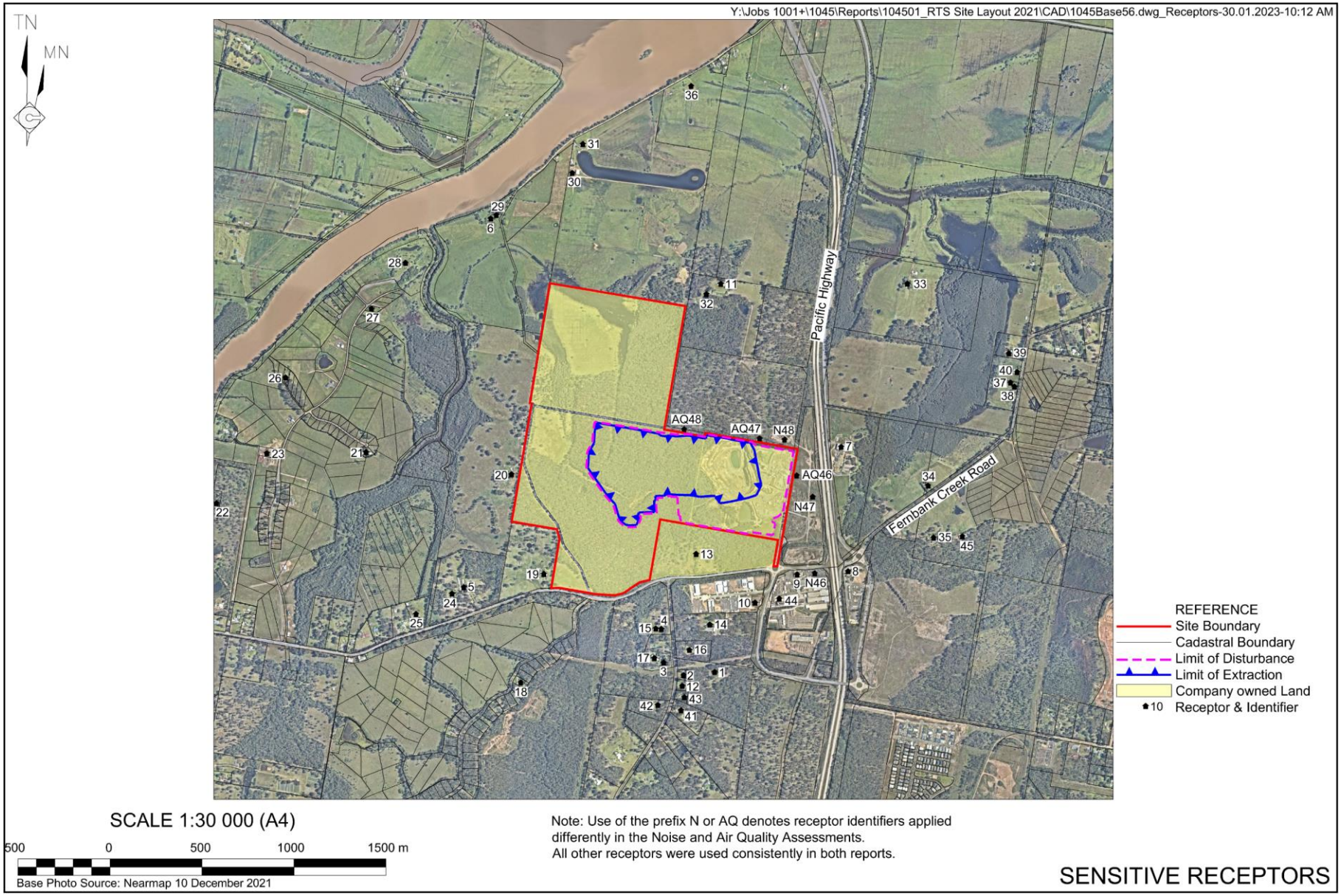

Figure 8 | Sensitive receptor locations

130. At the time of the original AQA, local ambient particulate monitoring data was not available to inform background air quality levels for the Project site. Data from the Department's air quality monitoring station at Wyong was used to define background concentrations of particulate matter. The monitoring station at Wyong was identified as being the nearest monitoring station that was representative of the Project site, being located near the coast and outside of major urban areas. Following completion of the original AQA, the Department installed an air quality monitoring station at Port Macquarie. Although sufficient data was not available from this monitoring station for a suitable background data set, the revised AQA compared the available data from Port Macquarie with that from the Wyong monitoring station, which confirmed that the Wyong data provided a suitably conservative background data set. The EPA did not raise any concerns with this approach.

6.2.3 Predicted impacts

131. The AQA modelled three scenarios considered to be representative of the Project's worst-case impacts under normal operating hours and extended operating hours (proposed by Hanson to apply on up to 20 days per year).

132. The AQA predicted both incremental (i.e. Project alone) and cumulative (i.e. project plus background) concentrations of Total Suspended Particulates (TSP), PM_{10}, $PM_{2.5}$ and deposited dust at sensitive receivers surrounding the quarry site.

133. Quarrying activities and operation of the batching plants would be the main sources of dust emissions from the Project. This would include drilling, blasting, product handling, rock processing, concrete crushing, wheel-generated dust and truck loading.

134. The air quality modelling predicted no exceedance of the annual average PM_{10}, $PM_{2.5}$, or TSP criteria, or the monthly and annual average dust deposition criteria, at any sensitive receiver. Similarly, no exceedance of the 24-hour average $PM_{2.5}$ criteria is predicted at any sensitive receiver.

135. However, air quality modelling predicted exceedances of the 24-hour PM_{10} criteria at four sensitive receiver locations when the quarry is operating at maximum daily throughput under both normal and extended operating hours (see Table 7).

Table 7 | Predicted maximum 24-hour average PM_{10} exceedances

Receiver ID	Normal operating hours		Extended operating hours (up to 20 days per year)	
	Cumulative (µg/m³)	Project contribution (µg/m³)	Cumulative (µg/m³)	Project contribution (µg/m³)
Criterion	*50*			
13	52.9	13.7	53.5	14.3
46	63.5	54.8	63.5	48.5
47	70.1	62.7	70.2	62.8
48	64.0	39.4	63.9	39.3

136. Of these four sensitive receiver locations, three (46, 47 and 48) represent future industrial developments located on currently vacant and vegetated land adjacent to the northern and eastern boundaries of the site, while receiver 13 is a residential property located to the south on land zoned for industrial development. However, Hanson purchased this property in September 2021 and it is therefore no longer considered to be a sensitive receiver.

137. As indicated in Table 7, the Project would contribute between approximately 60 and 90 percent of the applicable cumulative criteria at receivers 46, 47 and 48 where an exceedance is predicted, with the incremental (or Project-only) emissions exceeding the criteria of 50 µg/m³ at receivers 46 and 47.

138. The EPA raised concerns regarding the predicted exceedances at receivers 46, 47 and 48. In response, Hanson committed to implementing a proactive and reactive air quality management system to reduce dust emissions before an exceedance occurs. This would include onsite meteorological monitoring and real-time PM_{10} monitoring on the northern and eastern boundaries of the site. The EPA was satisfied, and the Department agrees, that this approach could appropriately manage the potential air quality impacts of the Project, provided PM_{10} monitoring is also conducted along the southern boundary of the site to manage impacts to future industrial developments and existing residential properties to the south. The Department has recommended conditions requiring Hanson to implement a Trigger Action Response Plan (TARP), which would require operations to be modified or stopped in response to predefined meteorological or air quality conditions to prevent exceedances of air quality criteria at any industrial premises developed to the north and east of the site.

139. The Department notes that, while the predicted PM_{10} concentrations at receivers 46 and 47 exceed both the mitigation and acquisition criteria under the Department's *Voluntary Land Acquisition and Mitigation Policy* (VLAMP) for existing workplaces on privately owned land, the VLAMP does not provide for acquisition or mitigation rights for vacant land such as that represented by receivers 46 and 47.

140. The AQA also predicted that maximum 1-hour average NO_2 concentrations, including emissions from the asphalt plant, would be around 70 $\mu g/m^3$ at all sensitive receivers, which is well below the EPA's assessment criterion of 246 $\mu g/m^3$. Similarly, predicted annual average NO_2 concentrations at all sensitive receivers were approximately 10 $\mu g/m^3$, which complies with the EPA's criterion of 62 $\mu g/m^3$.

141. The predicted maximum annual average respirable crystalline silica concentration at all sensitive receivers was less than 0.1 $\mu g/m^3$, well below the assessment criterion of 3 $\mu g/m^3$.

6.2.4 Mitigation and management

142. In addition to the real-time air quality monitoring and reactive management strategies, Hanson has committed to implementing a range of measures to mitigate and manage potential air quality impacts from the Project, including:

- sealing of roads that are likely to remain in the same location throughout the Project;
- using water sprays and mobile sprinkler systems on trucks, excavators, processing plants, conveyors, concrete storage bins, unsealed roads and stockpiles;
- enclosure of conveyors, the concrete batching loading point and the asphalt plant;
- partial enclosure of concrete and aggregate storage bins,
- vapour balancing and recovery systems to minimise emissions during transfers to and from the asphalt plant;
- delivery of cement pneumatically via sealed pipe transfer directly from delivery trucks;
- filter systems to capture emissions from the concrete batching and asphalt plants;
- modifying operations during adverse weather conditions;
- minimising vehicle speeds and travel distances onsite; and
- minimising the extent of exposed surfaces by avoiding unnecessary vegetation clearing.

143. Following its review of the EIS, Submissions Report and additional information provided by Hanson, the EPA advised that it was satisfied the proposed mitigation measures were appropriate and recommended they be incorporated into conditions of consent. The

Department has adopted the EPA's recommendations and incorporated the proposed management and mitigation measures into the recommended conditions of consent.

144. The Department has also recommended other robust and contemporary air quality management conditions requiring Hanson to:

- comply with strict air quality criteria;
- operate a network of real-time meteorological and air quality monitoring systems to:
  - guide the day-to-day planning of quarrying operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of consent; and
  - relocate, modify or stop operations on the site to ensure compliance with the air quality criteria.

145. Subject to these conditions, the Department considers that the air quality aspects of the Project are acceptable.

6.2.5 Summary

146. The AQA indicates that the applicable air quality criteria may be exceeded at future industrial developments located adjacent to the northern and eastern boundaries of the site when the quarry is operating at maximum daily throughput under both normal and extended operating hours. No other exceedances have been predicted at any sensitive receiver locations.

147. The Department and EPA are satisfied that these exceedances could be prevented through Hanson's proposed proactive and reactive air quality management system, informed by a meteorological forecasting system and real-time air quality monitoring network.

148. Hanson has proposed a range of mitigation and management measures to minimise the air quality impacts of the development. The Department has recommended a comprehensive range of air quality conditions to ensure that air quality impacts are appropriately mitigated and managed. On this basis, the Department considers the air quality impacts of the Project are acceptable.

6.3 Noise

6.3.1 Introduction

149. The Project would involve noise generating activities that have the potential to cause adverse impacts to nearby sensitive receivers, including:

- operation of plant and equipment during extraction and loading of trucks;
- construction of the concrete batching, asphalt and processing plants and construction of the earth bund on the southern edge of the quarry; and
- road traffic noise generated from road haulage activities, workforce transportation and material deliveries.

150. Potential noise impacts were a key issue raised in objecting submissions to the Project, including potential impacts to residents from the increased production rate and extended hours of operation, as well as road noise impacts from an increase in heavy vehicles travelling to and from the site.

151. The EIS included a Noise and Vibration Impact Assessment (NVIA) prepared by ERM. In response to several technical issues raised by the EPA, Hanson commissioned a revised NVIA as part of its Submissions Report and provided several addendums to this revised NVIA (see **Appendix C**). The revised NVIA and addendums reflected the reduced production limit of 530,000 tpa and forms the basis of the Department's assessment.

152. The NVIA was prepared in accordance with the *Industrial Noise Policy* (INP, EPA, 2000). In October 2017, the EPA released the Noise Policy for Industry (NPfI), which replaced the INP as the relevant NSW Government policy for the management and control of industrial noise sources. However, under transitional arrangements, the INP continues to apply as the relevant NSW Government policy for the Project.

6.3.2 Existing noise environment

153. The noise environment surrounding the quarry is primarily characterised by rural residential and agricultural activities, with traffic noise influence from the Pacific Highway. Future residential developments are proposed to the south and west of the quarry, while industrial developments are proposed to the south, east and north. The NVIA identified 25 representative sensitive receiver locations, including for the future industrial and residential developments, that would potentially be impacted by noise from the Project (see **Figure 8**).

154. Background noise levels (Rating Background Levels or RBLs) measured for the NVIA range between 32 and 48 dB(A) and are generally highest during the day and lowest during the night. The dominant background noise sources are traffic noise, wind-blown vegetation and birds and insects.

155. The EPA raised concerns that noise from the existing quarry had contributed to the background noise levels recorded in the NVIA, which could lead to an underestimation of the potential noise impacts of the Project. Hanson carried out additional noise monitoring in response to the EPA's concerns, however, could not demonstrate to the EPA's satisfaction that noise from the existing

quarry had not influenced the measured RBLs. The EPA considered that this uncertainty could be managed by taking this risk into account when setting noise limits for the Project.

6.3.3 Noise mitigation measures

156. In response to community concerns about potential noise impacts, Hanson amended the proposal to limit night-time operations to 20 nights per year and reduced the proposed extraction rate from 750,000 tpa to 530,000 tpa. To further mitigate the noise impacts of the Project, Hanson has committed to implementing a range of mitigation measures, including:

- construction of an earth bund along the southern edge of the quarry to shield sensitive receivers from noise emissions;
- limiting plant and equipment sound power levels through the use of enclosures and silencers;
- maintain all vehicles and equipment in correct working order;
- select quiet equipment and plant where practicable;
- utilise broadband reversing alarms on mobile plant and equipment; and
- prepare and implement a noise management plan.

157. The Department supports these measures and considers that they represent acceptable reasonable and feasible noise mitigation.

6.3.4 Predicted noise impacts

Operational noise

158. Project Specific Noise Levels (PSNLs) were calculated based on the more stringent of the Project's intrusiveness criteria (ie background noise environment + 5 dB) or the general amenity criteria (ie noise criteria specific to land use and associated activities). The Project's PSNLs (see Table 7) were predominantly based on intrusiveness criteria, except for those established for residential receivers 33, 34, 35 and 38 during the Night period, and non-residential receivers.

Table 8 | Project Specific Noise Levels for Representative Receiver Locations

Receivers	Period	Background (RBL) $L_{A90,\ 15\ min}$ dB(A)	PSNL $L_{Aeq,\ 15\ min}$ dB(A)	Sleep Disturbance Criteria $L_{Afmax,\ 15\ min}$ dB(A)
	Day	37	42	-

Receivers	Period	Background (RBL) $L_{A90,\ 15\ min}$ dB(A)	PSNL $L_{Aeq,\ 15\ min}$ dB(A)	Sleep Disturbance Criteria $L_{Afmax,\ 15\ min}$ dB(A)
1, 2, 4, 13, 14, 16, 17	Evening	36	41	-
	Night	32	37	47
	Morning Shoulder	34	39	49
6, 18, 19, 20, 24, 30	Day	35	40	-
	Evening	35	40	-
	Night	33	38	48
	Morning Shoulder	34	39	49
11	Day	41	46	-
	Evening	38	43	-
	Night	35	40	50
	Morning Shoulder	38	43	53
33, 34, 35, 38	Day	42	47	-
	Evening	42	45	-
	Night	41	40	56
	Morning Shoulder	41	45	56
7, 46	All	-	65	-
8, 9, 10, 47, 48	All	-	70	-

159. The NVIA modelled each stage of the quarry expansion to predict worst case noise levels at representative sensitive receiver locations during the life of the Project. The NVIA predicted

that noise levels would not exceed the PSNLs at any receiver during all operational stages of the Project.

160. The NVIA predicted that noise levels would be equal to or below 35 dB(A), which is the minimum noise limit under the INP, at all receivers, except for receivers 14, 16, 33, 34 and 35 during the Evening and Night periods under noise-enhancing meteorological conditions. The EPA recommended that, due to the potential for existing quarry noise to have influenced RBLs, noise limits for the Project be set based on the more stringent approach of adopting the predicted Evening or Night noise levels or INP minimum of 35 dB(A)[2], rather than the PSNLs. This approach is also consistent with the INP's application notes. The Department has adopted EPA's advice when setting recommended noise criteria (see **Table 9**). The Department and EPA consider that, subject to the recommended noise criteria and monitoring and management measures described below, the operational noise impacts of the Project can be managed and are acceptable.

Table 9 | Predicted noise levels and recommended noise limits

Receiver	Period					Recommended Noise Criteria	
	Morning Shoulder $L_{Aeq\ 15\ min}$ dB(A)	Day $L_{Aeq\ 15\ min}$ dB(A)	Evening $L_{Aeq\ 15\ min}$ dB(A)	Night			
				$L_{Aeq\ 15\ min}$ dB(A)	L_{Afmax} dB(A)	$L_{Aeq\ 15\ min}$ dB(A)	L_{Afmax} dB(A)
14	37	35	34	37	47	37	47
16	36	33	31	36	46	36	46
33	32	34	32	32	48	35	48
34	38	35	38	38	53	38	53
35	37	34	37	37	52	37	52
All other residential receivers	≤35	≤35	≤35	≤35	≤46	35	46

[2] The INP application notes state that where the proponent predicts that noise levels from the industrial development would be below the PSNLs, then the noise limits specified in the licence/consent conditions should reflect the noise levels that the proponent states would be achieved (that is, the predicted noise levels, however a minimum intrusive criterion of 35 dB(A) still applies).

Road noise

161. The Project would involve an increase in truck movements along the Pacific Highway and local roads near the quarry. The NVIA predicted that this would increase road traffic noise by up to 1.8 dB(A) at the closest sensitive receiver, which would comply with the relevant assessment criteria under the *NSW Road Noise Policy* (RNP, DECCW, 2011). The Department notes that noise level increases of 2 dB(A) or less are considered barely perceptible to the average person.

Construction noise

162. The Project would involve demolition of existing structures, construction of the concrete batching, asphalt and processing plants and construction of earth bunds on the southern and western edges of the quarry. Construction activities would take approximately 12 months to complete.

163. The NVIA predicted that construction noise levels would exceed the daytime Noise Management Levels (NMLs), established under the *Interim Construction Noise Guideline* (ICNG, EPA, 2013), at several residences to the south of the quarry by up to 9 dB(A) during construction of the asphalt plant, processing plant, and earth bund, which is expected to take approximately 12 months. The ICNG recommends that where NMLs are predicted to be exceeded, reasonable and feasible mitigation measures should be implemented to minimise noise impacts. Construction noise levels are predicted to be below the relevant NMLs for all other receivers during standard construction hours. Construction noise levels would exceed the evening, night and morning shoulder NMLs, as well as the sleep disturbance criteria, at residences to the south of the quarry for all construction activities.

164. Hanson has committed to undertaking attended noise monitoring in response to any noise complaints and implementing further mitigation and management measures where measured site noise levels are above the relevant NMLs. To minimise construction impacts, the Department's recommended conditions require that all construction activities are undertaken during standard construction hours.

165. The Department notes that construction noise impacts would be temporary and, once completed, would very substantially reduce the Project's ongoing operational noise impacts on most affected sensitive receivers.

6.3.5 Noise monitoring and management

166. The Department has recommended conditions requiring Hanson to employ best practice noise management and to take all reasonable steps to manage construction, operational and road noise generated by the Project. The recommended conditions also require Hanson to:

- construct the noise bund on the southern boundary of the site and relocate the processing plant prior to increasing the production rate above the existing approved rate of 185,000 tpa;
- undertake noise monitoring at least quarterly during operations to determine compliance with the applicable noise criteria;
- regularly assess the noise monitoring data, and modify or stop operations on the site to ensure noise compliance; and
- establish suitable protocols for receiving and handling community complaints and investigating any potential exceedances.

167. The Department considers that with the implementation of Hanson's proposed design mitigation measures and the recommended noise management and monitoring conditions, noise impacts on affected sensitive receivers can be appropriately mitigated and managed during both construction and operation of the Project.

6.3.6 Summary

168. Overall, the Department considers that noise associated with the Project can be managed through stringent conditions of consent, including strict noise limits and operating conditions, and regular noise monitoring.

169. While the EPA raised concerns about the background noise monitoring in the NVIA, it was ultimately satisfied that residual uncertainties could be addressed through strict operating conditions.

170. The Department considers that the recommended conditions strike a fair balance between protecting the amenity of the local community and providing for the continuation of an already existing quarry. Subject to these conditions, the Department considers the noise impacts of the Project are acceptable.

6.4 Blasting

6.4.1 Introduction

171. Blasting was raised as an issue of concern in 37 objecting submissions. The Department considers that the key issues related to blasting at the Project are potential blast vibration impacts on residences and other buildings and potential flyrock impacts on adjoining properties.

172. The NVIA included an assessment of the Project's potential ground vibration and airblast overpressure impacts as well as an assessment of flyrock throw and safe clearance distances for current blasting specifications at the quarry. Hanson also commissioned a Flyrock Exclusion Zone Analysis (Flyrock Assessment) prepared by Orica, in response to the Department's request that Hanson provide additional information to demonstrate that adequate exclusion zones could be provided to protect adjoining land.

6.4.2 Predicted impacts

Airblast overpressure and ground vibration

173. Airblast overpressure and ground vibration levels are predicted to comply with the relevant ANZEC (1990) criteria at the nearest sensitive receiver, for blasts with a Maximum Instantaneous Charge (MIC) of up to 270 kilograms. Hanson has committed to implementing a Blast Management Plan to ensure blast designs achieve compliance with the relevant blasting criteria, including selecting the appropriate MIC with consideration of the blast location in relation to sensitive receivers.

Flyrock

174. The proposed extraction area extends to the northern boundary of the site, which adjoins the site of an approved industrial development. The landowner of this property raised concerns regarding potential flyrock impacts to the property. At the Department's request, Hanson commissioned a Flyrock Assessment that calculated the required exclusion zones and blast design parameters to prevent flyrock impacts to the property (see **Table 10**). Hanson has also reached an agreement with the landowner to establish a blast exclusion zone of 90 m on that property for up to 10 years.

175. For blasts within 295 m of the 90 m exclusion zone boundary (**Figure 9**), increased stemming heights (ie depth of burial of the explosive) would be required to reduce flyrock impacts to an acceptable factor of safety. The Flyrock Assessment also determined that the free face of blasts within 121 m of the 90 m exclusion zone boundary must be oriented away from the boundary to contain flyrock from face burst within the exclusion zone. Hanson has committed to implementing the blast design measures set out in the Flyrock Assessment to ensure that flyrock is contained within the established exclusion zone.

    All other privately-owned residences would be situated more than 300 m from blasting activities and are therefore unlikely to be impacted by flyrock. The Department considers that, with the implementation of Hanson's proposed blast design measures, flyrock impacts from the Project can be managed appropriately.

Table 10 | Stemming heights and exclusion zones for flyrock management

Stemming height (m)	Exclusion zone (m)
2.2	295
2.5	212
3.5	88
4.0	62
4.4	49

Figure 9 | Flyrock management buffer zones

6.4.3 Mitigation and management

176. Hanson has committed to implementing blasting design and management measures to minimise blast impacts and monitoring of each blast to ensure compliance with blast criteria. Hanson would also calculate an appropriate exclusion zone for each blast to ensure the safety of people and property.

177. The Department has recommended strict operating and management conditions to ensure the blast impacts of the Project are managed appropriately. This includes procedures to notify the community of scheduled blasts and a monitoring program to evaluate compliance with the relevant blasting criteria. The Department has also recommended a condition allowing landowners to request an independent review of impacts at their property, should they consider the Project to be exceeding relevant blasting, noise, or air quality criteria.

6.4.4 Summary

178. The Department acknowledges concerns raised by nearby residents and landowners in relation to blasting. The Department considers that, with the implementation of the proposed mitigation measures, blasting associated with the Project would be unlikely to result in material impacts to nearby sensitive receivers.

The Department accepts that the potential blasting impacts of the Project, including from overpressure, vibration and flyrock, can be managed through appropriate blast design practices. The Department has recommended strict conditions of consent to manage the potential blast impacts of the Project. Subject to these conditions, the Department considers the blasting impacts of the Project are acceptable.

6.5 Water resources

6.5.1 Introduction

179. The Department considers that the key issues related to water resources for the Project are:

- **Surface water**: impacts from regular discharges of water from sediment dams to downstream waters, including on water quality and hydrology;
- **Groundwater**: groundwater inflows into the pit due to increasing extraction depth, with consequent requirements for management of excess pit water, water licensing and increased groundwater drawdown around the quarry; and
- **Final void**: hydrological impacts associated with the formation of a final void in the final rehabilitated landform (addressed in **Section 6.6**).

180. The EIS included an assessment of the Project's potential impacts on surface water and groundwater resources, including a Hydrology Assessment and a Groundwater Impact Assessment (GIA) prepared by ERM. The groundwater model was peer reviewed by REN Consulting Pty Ltd.

181. The peer review concluded that the confidence level of the groundwater model could be classified as "Class 1", as defined by the *Australian Groundwater Modelling Guidelines* (National Water Commission, 2012), indicating that the model may be used for predicting long-term impacts of proposed developments in low-value aquifers. The peer review also included several recommendations to strengthen the confidence-level of the model post approval.

6.5.2 Surface water

182. The Project site is within the catchments of Fernbank Creek and Haydons Creek, both of which flow north into the Hastings River. Surface water use in this area is regulated under the *Water Sharing Plan for the Hastings Unregulated and Alluvial Water Sources 2019*. Major surface water uses in the area include livestock grazing, viticulture, oyster farming, fishing and rural residential uses.

Water management system

183. The quarry's existing water management system comprises two water holding dams located in the southeast corner of the site which capture runoff from disturbed areas and water pumped from the quarry pit. Water from these dams is either reused on site or discharged into Fernbank Creek via a Licensed Discharge Point (LDP) in accordance with the site's EPL.

184. The water management system also includes a sediment basin in the northeast of the site that captures runoff from the northern stockpile area. Water from this sediment basin is pumped to one of the two water holding dams.

185. Potable water for the site's amenities is sourced from Council's reticulated mains water supply. Wastewater is treated onsite in a Council-approved septic system.

186. The existing water management system would be modified over the life of the Project to incorporate the additional catchment and pit inflows associated with the extended pit. Additional sediment basins would be established as the pit expanded. Hanson has developed a conceptual sediment basin design in accordance with the design criteria for basins with an operational lifetime of 1 to 3 years, discharging to a standard sensitivity environment (80^{th} percentile 5-day rainfall event), as set out in *Managing Urban Stormwater: Soils and construction – Volume 2E Mines and Quarries* (the 'Blue Book' Volume 2E) (DECC 2008).

187. The EPA recommended that the proposed sediment basins are designed to the more stringent criteria for basins with an operational life of more than 3 years, discharging to a 'sensitive' environment (95^{th} percentile 5-day rainfall event). Hanson accepted this recommendation and confirmed that there is sufficient area available to increase the size of the sediment basins accordingly.

Site water balance

188. The Hydrology Assessment included a detailed site water balance. Water would be required for product processing, dust suppression, plant maintenance, vehicle/machinery washdown, concrete batching and asphalt production. The total water demand for the Project at full production and maximum extent of the pit is predicted to be approximately 132 ML per year.

189. Water supply would be generated from surface water runoff and groundwater inflows. Groundwater inflows are predicted to be approximately 22 ML per year.

190. The Hydrology Assessment predicts that, when considering both predicted catchment yields and groundwater inflows, the Project would operate at a potential water deficit of approximately 6.5 ML per year during Stage 1 in dry years (10^{th} percentile rainfall). The Project is predicted to operate at a water surplus during Stage 2 and 3 in dry years and during all stages in median (50^{th} percentile rainfall) and wet (90^{th} percentile rainfall) years.

191. Hanson have identified that any potential water deficit during Stage 1 could be met through the installation of new production bores in either the Hastings River Coastal Floodplain Alluvial Groundwater Source or New England Fold Belt Coast Groundwater Source. Consistent with Water Group advice, the Department has recommended a condition requiring further assessment and approval of any production bores prior to their installation.

192. The Department is satisfied that there would be sufficient water available for the proposed operations under most climatic conditions and that any shortfalls could be offset through modified operations.

193. Surplus water would increase as the Project develops, due to the increase in extraction depth and area, with consequent increases in surface water inflows to the pit. Initially these inflows would be captured in the proposed sediment basins. The Hydrology Assessment predicted that controlled discharges from sediment basins would be required approximately 38 times per year, based on annual average rainfall data. Controlled discharges would only be undertaken when relevant water quality criteria are met in accordance with the site's EPL. Uncontrolled discharges from sediment basins would also occur following extreme rainfall events, with the Blue Book Volume 2E indicating that sediment basins sized for a 95^{th} percentile 5-day rainfall event are expected to overflow 1 to 2 times per year.

194. Hanson advised that the sediment basins associated with each stage of the development would only be operational during the early phases of quarrying in that stage. Once each stage is sufficiently advanced, dirty water would be directed away from the sediment basins and be collected in the pit void. From there, collected water would be reused or directed to the existing water holding dams for discharge via the LDP, subject to meeting the water quality criteria set in the EPL.

195. The Department considers that the proposed dirty water management system, including the design of sediment basins, is consistent with the requirements set out in the Blue Book Volume 2E, and accords with the EPA's recommendations, and is therefore acceptable.

Stream flow / hydrology

196. The Project would progressively reduce the catchment areas of Haydons Creek and Fernbank Creek by approximately 19 ha and 5 ha respectively, representing a 2 and 1 percent reduction in their total catchment areas. Flows in Haydons Creek and Fernbank Creek would reduce proportionally with the predicted loss of catchment area.

197. The loss of flows in Fernbank Creek would be partially offset by licenced discharges from the site. Additionally, any loss of downstream surface water flow would be limited due to the relatively small area of each impacted catchment and their location in the headwaters of relatively small first order streams.

198. On this basis, the Department considers that impacts to stream flow due to the expansion of the quarry are unlikely to result in a material impact to the flow regime of the receiving watercourses and are acceptable.

Surface water quality

199. The Project has the potential to impact downstream receiving waters through increased sediment loads, salinity and other pollutants. Hanson propose to manage surface water in a similar manner to its existing operation by capturing dirty water runoff in sediment basins and the water holding dams, reusing water for quarry operations, treating captured water to meet relevant water quality criteria, and discharging surplus water in accordance with the site's EPL.

200. The GIA found that groundwater inflows into the pit would be brackish and have potential to increase the salinity of surface water discharges from the site. However, the GIA also found that the average concentration of total dissolved solids (TDS) in water within the pit would be low (approximately 170 milligrams per litre (mg/L)). That is, due to the relatively low volumetric contribution of groundwater inflows, brackish groundwater seepage into the pit is unlikely to impact the overall quality of water discharged from the site.

201. The EPA raised concerns that expanding the quarry into areas of acidic soils would impact offsite water quality. In response, Hanson proposed measures to manage acidic soils and associated runoff, including separation and treatment of stockpiles to neutralise acidity and collection and treatment of runoff within the site's dirty water management system.

202. The EPA did not raise any further concerns regarding water quality impacts. The Department is satisfied that the potential water quality impacts of the Project can be appropriately managed, subject to the recommended conditions.

Seepage flows

203. The adjacent landowner to the east of the site raised concerns about historical and existing seepage flows from the base of batters on the eastern boundary of the site onto that landowner's property. The exact source of the seepage flow has not been determined by Hanson. They are assumed to either originate from stormwater flows in the eastern portion of the quarry infiltrating through fill material or from seeps or springs flowing through fractured bedrock. The flows were inspected as part of the Hydrology Assessment. This inspection confirmed that the seepages were of low volume and velocity, but relatively constant. The flows were also noted to be visibly clear having minimal entrained sediment.

204. Hanson has previously undertaken several measures to mitigate this seepage, including regrading and relining drainage features to direct flows away from this area and to minimise infiltration. Hanson has committed to developing an agreed approach with the landowner to manage the seepage flows to ensure they are directed to a stable down-gradient surface water system.

205. The Department's recommended conditions include requirements for ongoing surface water and groundwater management to be documented within a Water Management Plan for the Project. These requirements would help to mitigate potential risks to the receiving environment from seepage flows.

Surface water licensing

206. Under the *Water Management Act 2000* (WM Act), Hanson is required to hold a surface water access licence (WAL) for the interception of surface water flows within the Coastal Hastings Water Source in accordance with the *Water Sharing Plan for the Hastings Unregulated and Alluvial Water Sources 2019*. Hanson holds an existing WAL (42524) which allows for the use of 6 ML per year from this water source.

207. The majority of surface water runoff that would be captured by the quarry is excluded from the WM Act's licensing provisions, being dirty water from dams solely for the capture, containment and recirculation of drainage to prevent contamination of a water source. Additionally, the existing Water Holding Dams comply with the Harvestable Rights provisions of the WM Act and do not require any additional licensing.

208. Hanson's existing surface water Harvestable Rights and WAL entitlements are expected to be sufficient to account for any licensable surface water take associated with the Project. The Department has nevertheless recommended a condition requiring Hanson to obtain all required water licenses in accordance with the WM Act.

6.5.3 Groundwater

209. Groundwater resources at the site are regulated under the *Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources 2016*. Under this water sharing plan, the quarry is located within the New England Fold Belt Coast Groundwater Source. Within a 2 km radius of the quarry, there are 13 registered groundwater bores, all of which are used for stock watering or domestic purposes. The nearest licensed groundwater bore is located approximately 600 m south of the quarry.

210. Groundwater levels across the site range between approximately 33 m AHD in the south and 1 m AHD in the northwest of the site. Groundwater flow direction is generally towards the Hastings River to the northwest, reflecting the surface topography.

211. Groundwater quality at the site is generally brackish with electrical conductivity ranging from 1912 µS/cm to 4563 µS/cm, while pH ranges from 6.6 to 8.0. The fractured rock aquifer underlying the quarry has low hydraulic conductivity, with the existing quarry experiencing minimal groundwater inflows. The groundwater source is characterised as a 'less productive groundwater source' under the AIP as concentrations of total dissolved solids exceed the AIP's criterion of 1,500 mg/L.

212. There are no 'high priority' Groundwater Dependent Ecosystems (GDEs) identified in any water sharing plan in proximity to the quarry. The nearest GDE (not a 'high priority' GDE) is located approximately 500 m to the west.

Predicted groundwater impacts

213. The GIA predicts that groundwater seepage rates would range between 15 ML and 22 ML per year. These are relatively modest inflows for a pit void of the proposed size and align with observations at the existing quarry, which report minimal groundwater seepage into the pit.

    The GIA included two modelling scenarios to predict maximum drawdown at both nearby licensed bores and GDEs over the life of the Project. The 'base case' scenario represents the most accurate match with the available groundwater data, while the 'sensitivity case' represents a worst-case scenario to account for uncertainties in hydraulic conductivity values. The predicted drawdowns at nearby licensed bores and GDEs for each scenario are provided in **Table 11** and shown on **Figure 10** and **Figure 11**.

Table 11 | Predicted groundwater drawdown at nearby groundwater users

Bore ID	Drawdown from base case (m)	Drawdown from sensitivity case (m)
GW060512	0.08	0.11
GW060513	0.06	0.09
GW300120	0.001	0.001
GW301263	0.05	0.08
GW302376	0.05	0.08
GW303436	0.62	1.52
GW303749	2.90	7.23
GW306269	0.93	2.65
GDE	0.18	0.25

214. A drawdown of greater than 2 m is predicted at one licensed bore (GW303749) in the 'base case' and at two (GW303749 and GW306269) in the 'sensitivity case'. The GIA thereby predicts that the magnitude of drawdown may vary between approximately 3 m and 7 m at GW303749, and approximately 1 m to 3 m at GW306269.

215. A drawdown of 2 m exceeds the AIP's Level 2 minimal impact considerations for 'less productive' groundwater sources. In these circumstances, the AIP requires appropriate studies to demonstrate that the decline would not prevent the long-term viability of the affected water supply, unless make good provisions apply.

216. Hanson has committed to undertaking groundwater monitoring at the impacted licensed bores and implementing appropriate mitigation measures, including make good provisions, if required.

217. The Department's standard recommended conditions also include a requirement for Hanson to provide a compensatory water supply to any landowner of privately-owned land whose rightful water supply is adversely affected and directly impacted by the Project.

218. The predicted drawdown at the nearest GDE is considered negligible. No impacts to GDEs are expected from the Project.

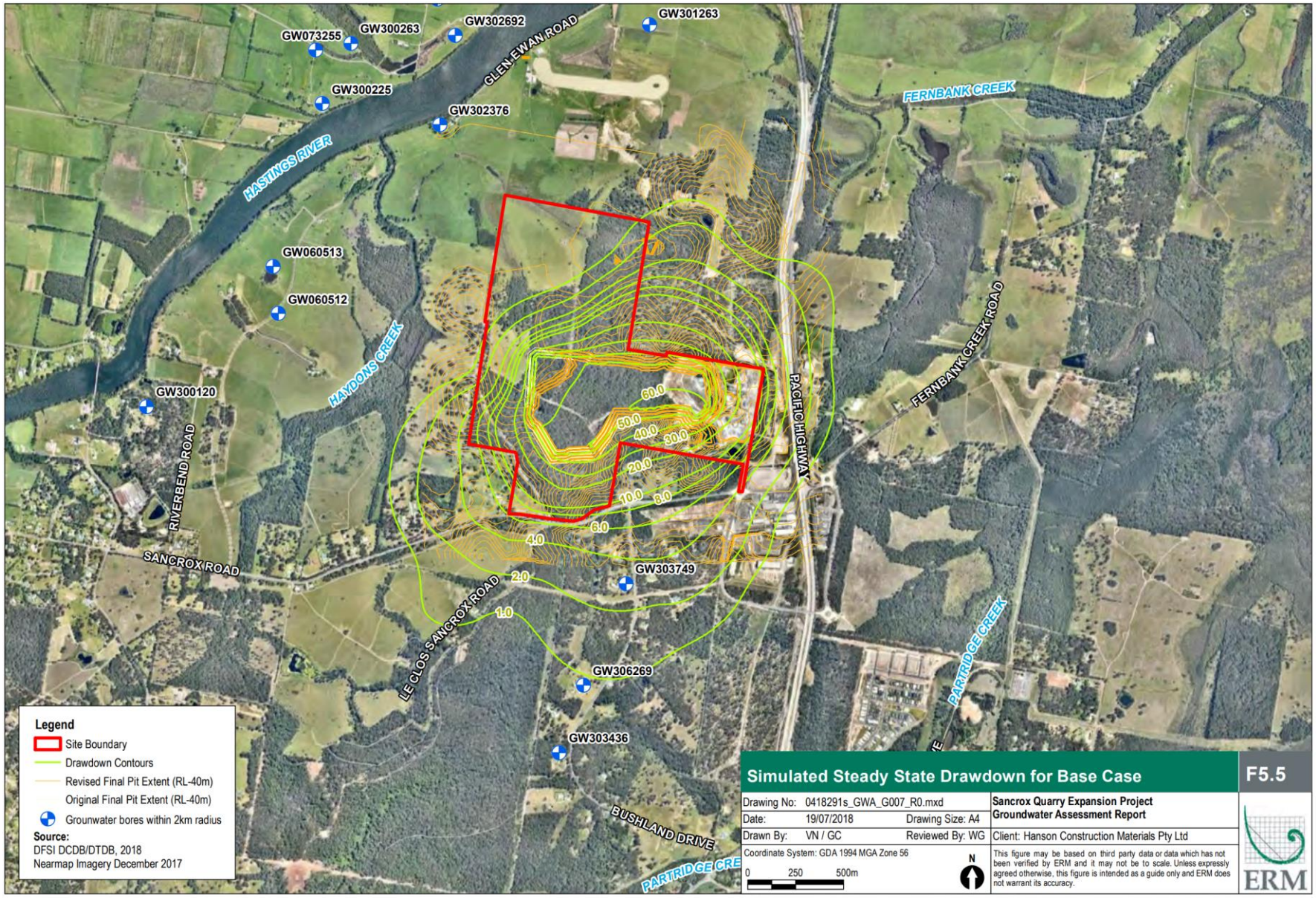

Figure 10 | Predicted groundwater drawdown (base case)

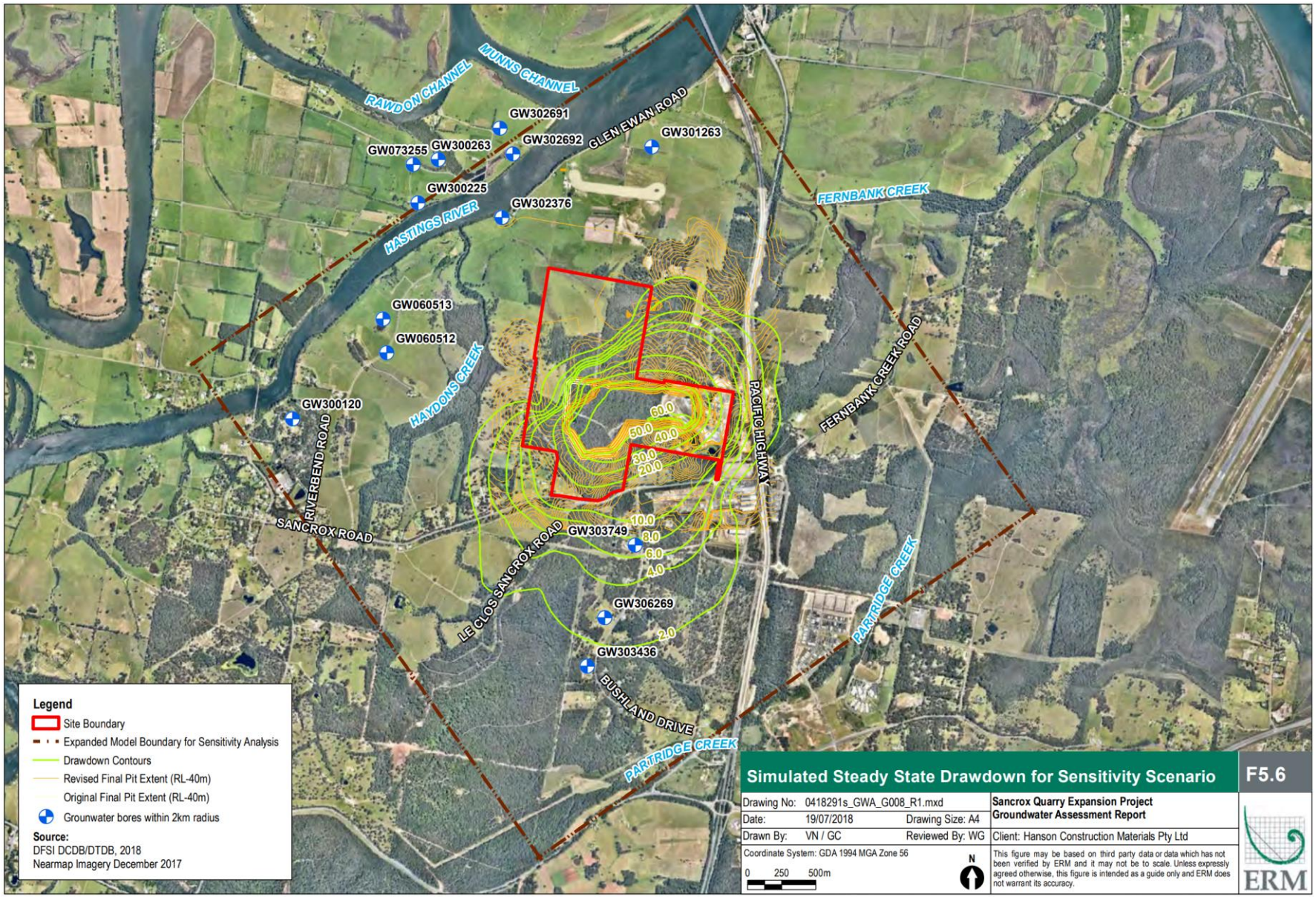

Figure 11 | Predicted groundwater drawdown (sensitivity case)

Groundwater licensing

219. The Project is predicted to require up to 22 ML per year of licensed groundwater allocation from the New England Fold Belt Coast Groundwater Source in accordance with the *Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources 2016* to account for seepage into the quarry pit.

220. The Project may also require an additional 6.5 ML per year of licensed groundwater allocation to offset potential water deficits during Stage 1 in dry years. Hanson holds 38 ML per year of unutilised groundwater allocation from the Hastings River Coastal Floodplain Alluvial Groundwater Source under Water Access Licence (44557), which could be utilised if required. Alternatively, additional allocation could be obtained from the New England Fold Belt Coast Groundwater Source.

221. Hanson has committed to obtaining the required licensed groundwater entitlements for the Project. The Department and Water Group are satisfied that there is adequate capacity within the water market for the necessary entitlements to be obtained.

6.5.4 Monitoring and management

222. Hanson has committed to implementing a range of measures to mitigate and manage the Project's impacts on water resources. These include:

- Surface water:
  - upgrading the surface water management system to meet all relevant design criteria set out in the Blue Book Volume 2E for a 95th percentile 5-day rainfall event;
  - managing discharges of water from the site in accordance with the site's EPL;
  - progressively rehabilitating the site to minimise exposed soils and associated erosion; and
  - pollution controls at the asphalt, concrete and processing plants, including bunding of chemical and fuel storages and 'first flush' systems to capture any contaminated stormwater.
- Groundwater:
  - a groundwater monitoring program, including monitoring of groundwater take, drawdown and quality. The monitoring program would include trigger values and contingency measures should performance criteria be exceeded; and
  - mitigation measures for impacted private bores, including make good provisions where required.

223. To ensure that these measures are implemented appropriately, and to minimise impacts to water resources, the Department has recommended conditions requiring Hanson to prepare a Water Management Plan in consultation with the (now) NSW Department of Climate Change, Energy, Environment and Water – Water Group and the EPA, which would include baseline data, performance criteria, triggers, monitoring requirements, and investigation, notification, reporting and review protocols.

6.5.5 Summary

224. The Department notes that the predicted groundwater impacts of the Project are largely unavoidable due to the location of the resource within the hard rock aquifer. However, the predicted impacts would be localised and limited to a 'less productive' aquifer. Two private bores are predicted to experience greater than 2 m drawdown over the life of the Project, exceeding the Level 2 minimal impact considerations set out in the AIP. The Department considers that these impacts can be appropriately managed through the recommended conditions, which require Hanson to monitor the impacts at these private bores and provide a compensatory water supply if required.

225. The Department considers that, subject to the implementation of Hanson's proposed mitigation and management measures and the Department's recommended conditions, the Project would not lead to significant surface or groundwater impacts.

    The Department considers that the risks of significant impact to surface water and groundwater resources are low and that the Project could be suitably managed, subject to its standard best practice conditions.

6.6 Rehabilitation and final landform

226. The EIS included a conceptual rehabilitation and final landform strategy for the Project that described the proposed objectives and processes for rehabilitating the quarry site and the conceptual final landform. The strategy was developed in accordance with the principles of the *Strategic Framework for Mine Closure* (ANZMEC & MCA, 2000).

6.6.1 Assessment of rehabilitation and final landform

227. Hanson's proposed rehabilitation strategy seeks to progressively rehabilitate the site to create a safe, stable and non-polluting landform. This would include revegetation with native endemic plant species and filling of the final void over time by surface and groundwater inflows.

228. The conceptual final landform (see **Figure 12**) would primarily consist of benched quarry walls and a quarry floor at RL – 40 m AHD. The void would eventually fill with water and spill to the

receiving environment. The benches above the inundated void would be revegetated with native endemic species and would drain to either stabilised areas or the quarry void, dependent on the topography. Diversions established during quarrying to prevent clean water from undisturbed upslope catchments from entering the quarry would remain in place, minimising erosion and surface water inflow into the void. The water holding dams would also remain for sediment control purposes.

229. The void would take approximately 82 years to fill after closure before spilling to the receiving environment. Runoff to the final voids would be from upstream undisturbed catchments and rehabilitated disturbed areas and hard rock surfaces. As such, final void water quality is expected to be similar to that of runoff from the surrounding catchment. Discharges from the void are expected to be representative of regional hydrological functioning.

230. The processing and stockpile areas are anticipated to be suitable for future industrial use, consistent with the planned land use for the surrounding Sancrox Employment Precinct. Quarry infrastructure and stockpiles would be removed and the area re-graded and revegetated in a manner suitable for its determined end use.

231. Hanson has identified the preferred final land use to be passive biodiversity conservation, including maintenance of an established vegetated buffer and amenity barrier to shield views to the final landform.

232. Hanson has commenced rehabilitation in several areas of the existing site, including along the northern edges of the existing pit and along the northern boundary of the site adjacent to the existing stockpile areas. Hanson would continue to undertake progressive rehabilitation throughout the life of the Project, with completed benches revegetated to ensure a stable landform and to minimise soil erosion. The Department acknowledges that the timing of rehabilitation would be dependent on the rate of resource extraction in each area.

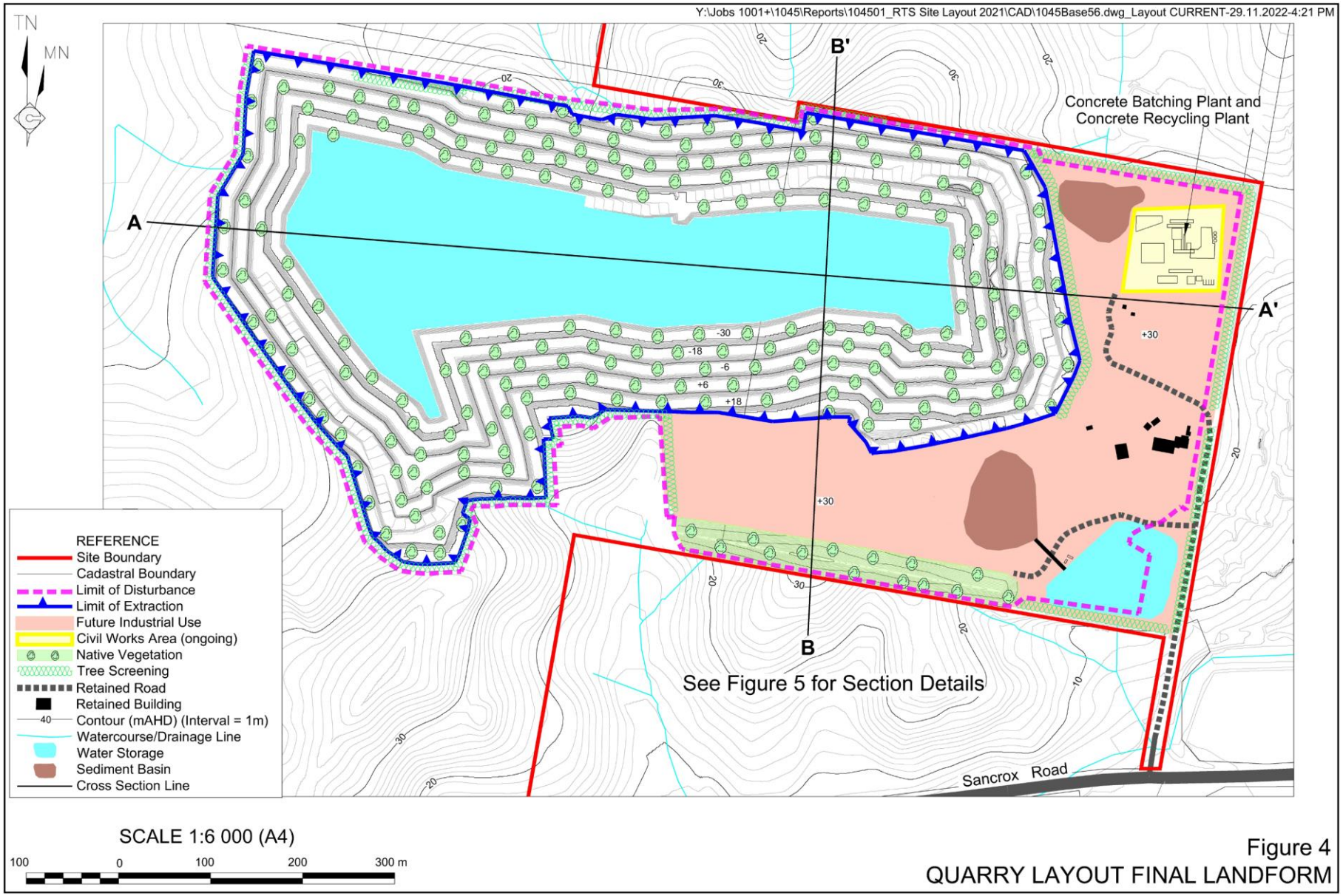

Figure 12 | Conceptual final landform

6.6.2 Mitigation and management

233. Hanson has committed to developing a Quarry Closure and Rehabilitation Plan to ensure that rehabilitation and closure outcomes align with relevant environmental and legal requirements and that community and stakeholder expectations are appropriately considered.

234. The Department has recommended that Hanson prepare a BRMP in consultation with BCS and Council that includes a conceptual closure plan that considers the hydrological and hydraulic impacts of the final void and details specific rehabilitation performance and completion criteria, measures to meet these criteria and a program to monitor, review and report on the effectiveness of these measures.

235. Additionally, the Department has recommended conditions requiring Hanson to lodge a rehabilitation bond to ensure accumulated and anticipated costs of rehabilitation are available until rehabilitation (including achievement of all completion criteria) has been completed to the satisfaction of the Secretary.

6.6.3 Summary

236. Overall, the Department notes that, even if the Project did not proceed, several changes to the landscape would remain as a result of existing operations, including a final void. The Department recognises that the Project would increase the size and depth of the remaining void, however, subject to the recommended conditions, the Department considers that the Project area could be rehabilitated to achieve a sustainable final landform and appropriate rehabilitation outcomes. On this basis, the Department considers the proposed rehabilitation and final landform to be acceptable.

237. In addition, a new SSD consent would provide greater certainty for final land use planning and apply consistent, contemporary rehabilitation performance standards and management practices, rather than the limited rehabilitation conditions included in the existing three consents. In this respect, the Project would lead to better rehabilitation outcomes than are required by the existing consents.

6.7 Economics

238. The EIS included an Economic Impact Assessment (EIA) for the Project which was prepared by Ethos Urban to assess the potential impact of the Project on the existing and likely economic environment.

239. The EIA identified that the Mid North Coast region is predicted to experience an increased demand for construction materials in the coming years, driven by strong population growth and an associated increase in residential development and major infrastructure projects.

240. Population forecast data presented in the EIA indicates that the population of the Port Macquarie area is expected to increase significantly, including a growth rate of up to 5.9% per annum in the Thrumster (Sancrox) area. This growth is estimated to require an additional 10,480 new dwellings by 2036 to meet housing demand. Hanson advises that construction of a typical new house requires approximately 110 tonnes of construction aggregates and 53 cubic metres of concrete, demonstrating the need for these materials in the local area within the next 15 years.

241. While there are several other quarries operating in the Mid North Coast region, Sancrox Quarry is the closest quarry to the region's major population centre of Port Macquarie. It is also located directly adjacent to the Sancrox Interchange and Pacific Highway. Given this proximity to urban growth areas and access to major road infrastructure, the Project would provide an efficient outcome in terms of transportation costs for construction materials to local developments.

242. The Project would provide a number of other economic benefits, including 80 jobs during construction and approximately 25 full time equivalent employees when the quarry is operating at full capacity. In addition to direct employment, the EIA predicts that the Project would support a further 130 jobs in the wider economy during construction and an additional 35 jobs during operation.

243. Investment of $12.5 million will be required to construct the project, with this investment likely to benefit the regional economy in terms of employment, business contracts and supply chain impacts.

244. The existing operational expenditure of the quarry is $2.1 million per year, which is predominantly retained in the Port Macquarie-Hastings economy through wages and use of local suppliers and services. In addition to the continuation of this ongoing expenditure, the Project is predicted to generate an additional $1.6 million per year in local stimulus during operation.

245. The Department recognises that a key economic benefit of the Project would be the continued supply of high-quality construction materials to facilitate housing and infrastructure development in the Mid North Coast region.

246. The Department considers that the Project would result in positive economic benefits to the local and regional areas and to the State of NSW and is therefore considered desirable and justified from an economic efficiency perspective.

6.8 Other issues

247. Other issues associated with the Project include traffic and transport, social and economic impacts, greenhouse gas emissions, visual amenity, Aboriginal cultural heritage, historic heritage, hazards and waste, and cumulative impacts. The Department's assessment of these issues is summarised in Table 12.

Table 12 | Assessment of other issues

Issue assessment	Recommended conditions
Traffic and transportation	
Potential traffic impacts were raised in 146 objecting submissions. The key issue of concern was reduced road safety due to increased truck movements. Heavy vehicles would access the site via the Sancrox Road interchange with the Pacific Highway, which was constructed in 2015 to modern highway design standards. The Oxley Highway interchange with the Pacific Highway (further to the south), would provide for eastern and western trucks movements, eliminating the need for truck travel on Sancrox Road. Projected traffic data presented in the EIS indicates that all roundabouts providing access to the Pacific Highway would remain well within their design capacity. TfNSW advised that the upgrade of the Sancrox Interchange accounted for the increased heavy vehicle traffic associated with the future expansion of the quarry and other planned industrial development in the area. TfNSW did not raise any issues with the Project. Hanson has committed to limiting use of local roads, including Sancrox Road and Fernbank Creek Road, to the supply of local customers within those areas, which Hanson estimates to comprise less than one percent of total truck movements. Hanson has committed to paying annual financial contributions to Council towards the maintenance of local roads used for haulage of quarry products and the Department has recommended a condition to this effect.	The Department has recommended a range of standard conditions to minimise road safety impacts and disruptions to local road users. These include requiring Hanson to develop and implement a detailed Traffic Management Plan in consultation with TfNSW and Council.

Issue assessment	Recommended conditions
The Department considers that the traffic and transport impacts of the Project are acceptable and can be appropriately managed under the recommended conditions.	
Social	
The EIS included a Social Impact Assessment (SIA) prepared by Ethos Urban in accordance with the Department's ***Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development*** (the SIA Guideline). Community engagement undertaken for the SIA identified noise, air quality, blasting, water quality and traffic as the key issues of concern for the local community. The Department has considered each of these issues in Section 6. The Department's assessment concluded that commitments from Hanson and the Department's recommended conditions would mitigate these impacts to an acceptable level and that the Project is unlikely to significantly impact the health, wellbeing or way of life of nearby residents. The Project is expected to have positive social benefits through the continued employment of the quarry's existing workforce and provision of 10 additional jobs. Overall, the Department considers that the social impacts of the Project are acceptable and could be suitably managed under the recommended conditions.	The Department has a recommended a range of conditions to manage the various social impacts of the Project. These conditions are discussed in Section 6. The Department's recommended conditions would also require Hanson to establish and operate a Community Consultative Committee for the life of the development.
Greenhouse gas emissions	
The Project would result in the generation of greenhouse gas emissions through the use of purchased electricity and natural gas, and combustion of fuels associated with machinery, processing equipment and transportation. The EIS's Greenhouse Gas Assessment estimated that the Project would generate Scope 1 emissions of up to 4,082 tonnes of carbon dioxide equivalent (t $CO_{2\text{-}e}$) annually and Scope 2 emissions of approximately 1,348 t $CO_{2\text{-}e}$ annually. This would equate to	The Department has recommended conditions requiring Hanson to maximise the energy efficiency and minimise the greenhouse gas emissions from the Project.

Issue assessment	Recommended conditions
approximately 162,900 t CO_{2-e} of Scope 1 and 2 emissions over the life of the Project. The predicted emissions would contribute approximately 0.0041 percent of NSW's emissions annually. The Department considers that the greenhouse gas emissions from the Project are minor and can be managed to acceptable standards.	
Visual amenity	
The EIS included assessment of the likely visual impacts of the Project on private landowners in the vicinity of the quarry site and key vantage points in the public domain. Views from the north, west and south would be screened by vegetation in the proposed offset site to the north and in the retained vegetation corridor in the western and southern areas of the site. Approved industrial developments to the north and east of the site would have views of the quarry. A 10 m wide vegetated buffer would remain along the northern boundary to provide visual screening. The facades of the adjoining lots would face away from the quarry and provide screening to more distant premises and road users on the Pacific Highway. Given the industrial setting of the locality, visual impacts at these viewpoints are considered minor. Lighting impacts were also considered, although these would largely be mitigated by directing lighting away from surrounding residences, commercial/industrial premises and adjacent vegetation and designing lighting in accordance with the relevant Australian Standard ***(AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting)***. Overall, the Department considers the visual amenity impacts of the Project to be acceptable, subject to the recommended conditions.	The Department has recommended standard conditions requiring Hanson to: • minimise the visual impacts of the development; • detail the proposed visual mitigation measures in the BRMP; and • integrate the final landform with surrounding natural landforms as far as is reasonable and feasible.
Aboriginal cultural heritage	
The EIS included an Aboriginal Cultural Heritage Assessment, prepared in consultation with Registered Aboriginal Parties (RAPs), which assessed the potential impacts of the Project on Aboriginal cultural heritage.	The Department has recommended standard conditions requiring Hanson to protect, monitor, record and

Issue assessment	Recommended conditions
A potential culturally modified tree was identified within the Project site, to the west of the proposed disturbance area. While the site would not be impacted by the Project, all site plans would identify the location of the tree and temporary fencing would be erected to prevent accidental damage to the tree and its surrounds. Previous archaeological investigations reported that a ceremonial site once existed on the site of the existing quarry, although no archaeological evidence of the site has been found and this site would have been destroyed during establishment of the existing quarry. The former ceremonial site is considered to have high cultural significance and recognition of its location within the Sancrox area will be displayed in the quarry's site office in consultation with the Birpai Local Aboriginal Land Council. No other Aboriginal sites or potential archaeological deposits were identified within the Project disturbance area and it was concluded that there was a low likelihood of impacts on Aboriginal cultural heritage. Hanson has committed to implementing a protocol to manage any unexpected Aboriginal heritage finds and to undertake cultural awareness training for all workers. Heritage NSW raised no concerns over impacts to Aboriginal cultural heritage and supported Hanson's proposed management measures. On this basis, the Department considers there is a low potential for adverse impacts to Aboriginal cultural heritage from the Project.	manage identified Aboriginal heritage items and ensure that the Project does not impact on any identified Aboriginal objects located outside proposed disturbance areas.
Historic heritage	
The EIS's Historic Heritage Assessment concluded that the Project would not impact any local or State listed heritage items and that it is unlikely that any sites of historical significance would be located within the Project site. The Heritage Council of NSW noted a historic National Trust grave site existed in the Sancrox area, 3 km southwest of the Project site, and would not be impacted by the Project.	The Department's recommended standard conditions would require Hanson to implement appropriate procedures if unexpected historic relics are discovered.

Issue assessment	Recommended conditions
The Heritage Council also advised that no items on the State Heritage Register are expected to be impacted by the Project and that its concerns had been adequately addressed. Hanson has committed to implementing procedures to appropriately manage the discovery of any historic relics during the Project. The Department considers there is low potential for adverse impacts to historic heritage from the Project.	
Hazards and risks	
The EIS included an assessment of hazards and risks associated with the Project, including dangerous goods storage, bushfires and waste. The Project would generate multiple waste streams including domestic waste, sewage, oil and grease, sediment and concrete washout. Hanson also proposes to receive and process solid concrete waste material, which is classified as General Solid Waste (non-putrescible) under the EPA's Waste Classification Guidelines. The assessment indicates that these wastes and other hazards would not present significant risk, subject to implementation of standard best practice risk and waste management measures. All waste streams would be managed in accordance with the quarry's existing waste management system, which aims to re-use, recycle and reprocess waste in accordance with the ***Waste Avoidance and Resource Recovery Act 2001***. The Department considers that hazards and waste associated with the Project can be effectively managed.	The Department has recommended standard conditions requiring Hanson to: • appropriately store, handle and dispose of any waste generated or received on site; • store, handle and transport dangerous goods in accordance with Australian Standards and the Australian Dangerous Goods Code; and • ensure the Project is suitably equipped to respond to fires and assist the NSW RFS and emergency services if there is a fire in the vicinity of the site.
Soil and land resources	
The EIS included an assessment of the Project's impacts on soil and land resources. The Project site predominantly comprises remnant native forest and has not previously been used for agriculture. The majority of land within the Project disturbance area is of low agricultural capability, with a Land and Soil Capability (LSC) of Class 5 to 6, which is	The Department's recommended conditions include a requirement for Hanson to prepare and implement a Water Management Plan that includes surface water and groundwater management provisions to minimise impacts to

Issue assessment	Recommended conditions
suitable only for light grazing. The Project site does not include Biophysical Strategic Agricultural Land. Due to the limited previous use of the site, the risk of encountering contaminated soils is considered low. There are no known or expected occurrences of acid sulphate soils within the proposed disturbance area, although the Project would involve quarrying in areas of acidic soils towards the western extent of the pit. Hanson has proposed measures to manage acidic soils and associated runoff as described in Section 6.5. The Department considers that the Project would not impact on agricultural land and that any impacts of the Project on soils and land resources would be minor and could be managed through the Department's recommended conditions of consent.	downstream agricultural land and other surrounding land.

7 Evaluation

248. The Department has carried out a detailed assessment of the merits of the Project, having regard to all of Hanson's project documentation, advice from NSW government agencies and independent experts, and all public submissions. The Department considered the objects of the EP&A Act and relevant considerations under Section 4.15(1) of the EP&A Act.

249. The Department acknowledges the considerable public interest in the Project. The key community concerns relate to impacts on biodiversity, air quality, noise, blasting and water resources.

250. The Project would require clearing 29.89 ha of native vegetation that constitutes Koala habitat. The Department acknowledges the concerns raised by BCS and the community regarding impacts to the local Koala population and accepts that loss of habitat is a key threat to the species. In response to these concerns, Hanson amended the Project design to avoid direct impacts to a total of 13.21 ha of Koala habitat when compared with the originally proposed Project. The Department acknowledges that the Project's ability to avoid impacts to Koala habitat is restricted by the location of the resource and that complete avoidance is impractical.

251. As part of its assessment, the Department sought independent advice from a biodiversity expert. The Department considers that this expert advice concurred with the conclusions of Hanson's BAR, which found that the Project's impacts on Koala habitat are not likely to significantly reduce the viability of the species or its local population. Hanson has committed

to implementing a range of measures to mitigate the Project's impacts on Koalas and to improve the quality and quantity of habitat available to the local Koala population, including revegetating existing cleared areas within the Project site and incorporating a local land-based approach into its offset strategy. The Department's recommended conditions require these measures to be incorporated into a BRMP, subject to which the Department considers the Project's impacts on biodiversity values (including Koalas) can be suitably mitigated, managed and/or offset.

252. Exceedances of the EPA's cumulative 24-hour PM_{10} air quality assessment criterion are predicted at future industrial developments located adjacent to the northern and eastern boundaries of the site, when the quarry is operating at maximum daily throughput. Both the Department and EPA accept that these exceedances can be eliminated through implementation of Hanson's proposed proactive and reactive air quality management system. This system would ensure activities onsite are modified in response to monitoring data to prevent exceedances of the air quality criteria. No other exceedances have been predicted at any sensitive receiver locations and Hanson has proposed a comprehensive suite of best practice mitigation and management measures to minimise the air quality impacts of the development. The Department has recommended a comprehensive range of air quality conditions to ensure that air quality impacts are appropriately mitigated and managed. Subject to these conditions, the Department considers the air quality impacts of the Project are acceptable.

253. The Department acknowledges that potential noise impacts are a key concern for the community. Hanson responded to these concerns by amending the Project to limit night-time operations and reduce its originally proposed extraction rate. Hanson has also committed to implementing a range of noise mitigation measures, including construction of an earth bund along the southern edge of the quarry and limiting plant and equipment sound power levels through use of enclosures and silencers.

254. While the Project is not predicted to exceed the EPA's noise assessment criteria, the Department has taken a precautionary approach in recommending strict noise limits and operating conditions for the Project. The Department considers that the recommended conditions strike a fair balance between protecting the amenity of the local community and providing for the continuation of an already existing quarry. Subject to these conditions, the Department considers the noise impacts of the Project are acceptable.

255. The Department acknowledges concerns raised by nearby residents and landowners in relation to blasting at the quarry. Hanson's blasting assessments indicated that potential overpressure, vibration and flyrock impacts can be managed through appropriate blast design practices. Hanson has also reached an agreement with the adjacent landowner to the north to establish

an exclusion zone on that property during the early stages of the Project to ensure the safety of people and property during blast events. The Department has recommended strict conditions to manage the potential blasting impacts of the Project. Subject to these conditions, the Department considers the blasting impacts of the Project are unlikely to result in material impacts to nearby land and land users.

256. The Department has assessed the impacts of the Project on other values including water resources, rehabilitation and final landform, traffic and transport, social and economic, greenhouse gas emissions, visual amenity, Aboriginal cultural heritage, historic heritage and hazards and waste impacts. The Department considers that the residual impacts of the Project can be suitably mitigated and managed.

257. The Department has recommended a comprehensive and precautionary suite of conditions to ensure that the Project complies with contemporary criteria and standards, and that residual impacts are effectively minimised, managed, offset and/or compensated for. The recommended conditions were provided to key NSW Government agencies and their comments taken into account in finalising the conditions. Hanson has reviewed and accepted the recommended conditions. The Department considers that the conditions reflect current best practice for the regulation of hard rock quarrying projects in NSW and would lead to better environmental outcomes than the continued operation the quarry under the more limited conditions in the three existing consents. A copy of the recommended consent is provided at Appendix F.

258. The Department recognises that the proposed quarry expansion would contribute a range of high-quality construction materials to local and regional markets in the Mid North Coast region of NSW. It would contribute significantly to the supply of materials for the construction of housing and major regional infrastructure projects. The Department also recognises that the proximity of the Project's hard rock resources to the existing approved quarry operation allows for the utilisation of existing infrastructure, avoiding the additional costs and environmental impacts that would be involved in establishing an alternative site. Additionally, the site's location adjacent to the Pacific Highway facilitates safe and efficient distribution of products to the market. The Department accepts there is a strategic need for hard rock quarry materials in the Mid North Coast region and considers the site to be well-suited for the Project.

259. The Department also considers that the Project would result in significant economic benefits to the region and to the State of NSW through the supply of materials critical to the construction industry and is therefore justified from an economic efficiency perspective.

260. The Department has carefully weighed the environmental impacts of the Project against the significance of the Project's identified hard rock resource and the wider socio-economic benefits associated with extending the operation of the quarry for a further 30 years under a contemporary development consent. On balance, the Department considers that the benefits

of the Project outweigh its residual costs and that the Project is in the public interest and is approvable, subject to the recommended strict conditions of consent.

Glossary

Abbreviation	Definition
AHD	Australian height datum
BCS	Biodiversity Conservation and Science group of the NSW Department of Climate Change, Energy, the Environment and Water (formerly the Office of Environment and Heritage (OEH))
CIV	Capital investment value
Council	Port Macquarie Hastings Council
AG DCCEEW	Australian Government Department of Climate Change, Energy, the Environment and Water
Department	Department of Planning, Housing and Infrastructure
DPI Fisheries	Fisheries Group of Department of Primary Industries within the Department of Regional NSW
EIS	Environmental impact statement
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2021*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPI	Environmental planning instrument
EPL	Environment protection licence
ESD	Ecologically sustainable development
FRNSW	Fire and Rescue NSW

Abbreviation	Definition
Heritage NSW	Heritage NSW, within the NSW Department of Climate Change, Energy, the Environment and Water, (formerly the Office of Environment and Heritage)
IPC	Independent Planning Commission
LEP	Local environmental plan
MEG	Mining, Exploration and Geoscience within the Department of Regional NSW (formerly Department of Resources and Geoscience, DRG)
Minister	Minister for Planning and Public Spaces
Planning Systems SEPP	*State Environmental Planning Policy (Planning Systems) 2021*
SEARs	Planning Secretary's Environmental Assessment Requirements
Secretary	Secretary of the Department of Planning, Housing and Infrastructure
SEPP	State environmental planning policy
SSD	State significant development
TfNSW	Transport for NSW (formerly NSW Roads and Maritime Services)
Water Group	Water Group within the NSW Department of Climate Change, Energy the Environment and Water (formerly DPE Water, within the Department of Planning and Infrastructure, and Crown Lands and Water Division (CLWD) within the NSW Department of Industry)

Appendices

Appendix A – Environmental Impact Statement

Appendix B – Submissions

Appendix C – Response to submissions and additional information

Appendix D – Agency Advice

Appendices A to D available at https://www.planningportal.nsw.gov.au/major-projects/project/9946

Appendix E – Statutory considerations

Objects of the EP&A Act

The objects of the EP&A Act are the underpinning principles for all decision-making under the Act. They must be considered by the consent authority when determining a development application under the Act. Table 13 summarises how the relevant objects of the EP&A Act have been considered in the Department's assessment of the Project.

Table 13 | Objects of the EP&A Act and how they have been considered

Object	Consideration
(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,	• The Project would provide ongoing socio-economic benefits to the people of NSW and ongoing employment opportunities for members of the regional community. • While the Project has the potential to result in both positive and negative social impacts, overall, the Department considers that any negative social impacts can be appropriately managed under recommended conditions. • The Project would facilitate efficient recovery of an important hard rock resource.

Object	Consideration
(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	• The Department's assessment has sought to integrate all significant environmental, social and economic considerations. • The Department considers that the Project can be carried out in a manner that is consistent with the principles of ESD.
(c) to promote the orderly and economic use and development of land,	• The Project involves the expansion of an existing hard rock quarry and can be largely carried out using existing site and transport infrastructure. • The Project involves a permissible land use on the subject site and would facilitate efficient recovery of an important and regionally significant hard rock resource.
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,	• The Department has assessed the biodiversity impacts of the Project in accordance with relevant State legislation, policies and guidelines. • The Department considers that the Project avoids and minimises, to the greatest extent practicable, impacts on threatened species and communities and key habitats. • The Department has recommended conditions to ensure that the residual biodiversity impacts of the Project would be appropriately managed and offset (see Section 6.1).
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),	• The Department has assessed the likely impacts of the Project on Aboriginal cultural heritage and historic heritage and considers any potential impacts would be negligible.
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,	• The Department has led a whole-of-government assessment of the Project in consultation with other NSW Government agencies. This consultation process is discussed in Section 5.

Object	Consideration
(j) to provide increased opportunity for community participation in environmental planning and assessment.	• The Department publicly exhibited the proposal and made the development application and accompanying documents publicly available on its website (see Section 5). • The Department held a community meeting. • The Department has carefully considered issues raised by the community during the public

EP&A Regulation

The EP&A Regulation requires the applicant to have regard to the *State Significant Development Guidelines* when preparing their application. The Department considers that the applicant prepared the environmental impact statement with adequate regard to the guidelines.

Environmental Planning Instruments (EPIs)

Under section 4.15 of the EP&A Act, the consent authority is required to consider, amongst other things, the provisions of the relevant EPIs, including any exhibited draft EPIs and development control plans. The Department notes Hanson's consideration of these instruments in its EIS and has undertaken its own consideration of the Project against the applicable provisions of relevant EPIs, including applicable State Environmental Planning Policies (SEPPs).

SEPP (Resources and Energy) 2021 (Resources and Energy SEPP)

Part 2.3 of the Resources and Energy SEPP lists a number of matters that a consent authority must consider before determining an application for consent for development for the purposes of an extractive industry. The Department has considered these matters in its assessment of the Project and has included a summary of these considerations in Table 14.

Table 14 | Mandatory matters for consideration under Part 2.3 of the Resources and Energy SEPP

Clause	Matters for Consideration	Consideration
2.16	Non-discretionary development standards for mining	• The Project is predicted to comply and has been assessed as complying with non-discretionary standards with respect to noise, air quality and blasting. • The Project is predicted to exceed the water non-discretionary standards with respect to aquifer interference due to a drawdown of greater than 2 m at up to two private bores. The Department's recommended conditions include a requirement for Hanson to provide a compensatory water supply to any landowner of privately-owned land whose rightful water supply is adversely affected and directly impacted by the Project.
2.17	Compatibility of proposed mine, petroleum production or extractive industry with other land uses	• The Department has carefully considered the merits of the Project, having regard to existing and approved land uses in the vicinity of the site. The Department has also considered what it understands to be the preferred uses of land in the area, having regard to relevant EPIs and strategic plans. • The Department is of the view that, subject to the recommended conditions of consent, the Project can be carried out in a manner that is compatible with surrounding industrial, rural-residential and rural land uses.
2.18	Consideration of Voluntary Land Acquisition and Mitigation Policy (VLAMP)	• The Department has considered the VLAMP in its assessment of noise and air quality impacts. Mitigation and acquisition rights do not apply in respect of the Project.
2.19	Compatibility of proposed development with mining, petroleum production or extractive industry	• The Project would not conflict with existing extractive industry in the locality.

Clause	Matters for Consideration	Consideration
2.20	Natural resource management and environmental management	• The Department has recommended a robust suite of conditions to ensure that the Project is undertaken in an environmentally responsible manner. These include conditions relating to the appropriate management of biodiversity, air quality and water resources.
2.21	Resource recovery	• The Department has considered resource recovery in respect of the Project's identified hard rock resource and is satisfied that the Project can be carried out in an efficient manner that optimises resource recovery subject to environmental constraints. • The Department has recommended conditions requiring Hanson to implement reasonable and feasible measures to minimise waste and maximise the salvage and re-use of resources within the disturbance area (including water, soil and vegetative resources).
2.22	Transport	• The Department consulted with Council and TfNSW during its assessment of the Project. • The Project would not significantly impact the safety and efficiency of the local road network. • The Department has recommended conditions requiring the payment of contributions for ongoing maintenance for Project-related use of local roads, and the preparation of a Traffic Management Plan for the Project in consultation with Council and TfNSW.
2.23	Rehabilitation	• The Department has recommended strict conditions to ensure that the site is rehabilitated in a timely and integrated manner and that the final landform is safe, stable and non-polluting.

SEPP 44 – Koala Habitat Protection

At the time the EIS was finalised, *SEPP 44 – Koala Habitat Protection* (SEPP 44) was in effect. Despite its replacement since 2019 by a series of SEPPs directed towards Koala habitat protection (most recently Chapters 3 and 4 of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (the 2021 SEPP)), the provisions of SEPP 44 continue to apply to the Project.

This is because clause 4.16 of the 2021 SEPP provides that *'a development application made, but not finally determined, before the commencement of this Policy in relation to land to which this Policy applies*

must be determined as if this Policy had not commenced.' Consequently, the Department has considered the provisions of SEPP 44.

SEPP 44 aims to conserve and manage Koala habitat to reverse the current trend of Koala population decline. In this respect, the Department undertook detailed consideration of impacts of the Project on the local Koala population (see **Section 6.1**).

The BAR indicated that the vegetation to be cleared within the Project Area is Core Koala Habitat under SEPP 44. Accordingly, the Department's recommended conditions would require Hanson to prepare a Koala Management Plan to manage impacts to the resident Koala population.

Overall, the Department is satisfied that the Project is generally consistent with the aims, objectives and requirements of SEPP 44.

SEPP (Resilience and Hazards) 2021

Chapter 3 of this SEPP regulates the development of 'hazardous and offensive' industry. It replaces the previous *SEPP No. 33 Hazardous and Offensive Development* (SEPP 33) which had application when the EIS was prepared. The EIS indicates that all hazardous substances used in the carrying out of the Project fall below the relevant screening thresholds under SEPP 33. The EIS also indicates that, subject to Hanson's existing and proposed management measures, the Project is unlikely to constitute an offensive industry.

The Department considers that the hazards and risks associated with the Project have been assessed in a manner consistent with the requirements of Chapter 3 of this SEPP and can be appropriately managed under the recommended conditions.

Chapter 4 of this SEPP regulates the remediation of contaminated land. It replaces the previous *SEPP No. 55 Remediation of Land* (SEPP 55) which had application when the EIS was prepared.

The Department considers that the Project area does not have a significant risk of contamination given its historical and current land uses, and that the development has been assessed in a manner consistent with the requirements of Chapter 4 of this SEPP

SEPP (Transport and Infrastructure) 2021

This SEPP requires the consent authority to notify relevant public authorities about development that may affect public infrastructure or land. The Department notified TfNSW and Port Macquarie-Hastings Council. The Department carefully considered the advice from these authorities, particularly in relation to the Project's proposed traffic generation on the road network and requirements for potable water supply, in its assessment of this application.

Port Macquarie-Hastings LEP

The Department considers that the Project is generally consistent with the aims, objectives and provisions of the Port Macquarie-Hastings LEP. The Project area is zoned RU1 Primary Production

under the Port Macquarie-Hastings LEP. Extractive industry development is permissible with consent in the RU1 zone. Accordingly, the Department is satisfied that the development is permissible with consent.

Appendix F – Recommended instrument of consent

https://www.planningportal.nsw.gov.au/major-projects/project/9946