Panel Secretariat

Peer Review of Cedar Point Quarry Assessment Report

September 2011

Umwelt
Environmental Consultants

Peer Review of Cedar Point Quarry Assessment Report

Prepared by

Umwelt (Australia) Pty Limited

on behalf of

Panel Secretariat

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1.0 Introduction

Umwelt (Australia) Pty Ltd (Umwelt) has been commissioned by the Panel Secretariat to undertake an independent peer review of the planning assessment report for the proposed Cedar Point Quarry (the proposed development) prepared by Kyogle Council. The planning assessment report has been prepared by Kyogle Council for the Northern Joint Regional Planning Panel (JRPP) to consider in determination of the development application.

The development application and accompanying environmental impact statement (EIS) for the proposed development were submitted to Kyogle Council by Grahams Concrete on 5 October 2010. The land subject to development is owned by PA and RD Carlil. The development application is seeking to establish a new basalt quarry on Edenville Road, Cedar Point, NSW.

The proposed annual extraction rate is 47,000m^3 for a period of 43 years. The basalt to be extracted by the proposed development is considered to be suitable for road aggregate and after adding fines, as a road base. The agglomerate and weathered materials within the resource are considered suitable for use as road base. It is intended that the proposed development will supply aggregate material for use in the Grahams Concrete Plant in Kyogle. A smaller quantity of material may be used in local road maintenance and as railway ballast.

The proposed development is located within a steep sided, flat top basaltic plateau which is the result of an ancient lava flow. The proposed development is located within the Richmond River catchment and is located approximately 200 metres northwest of the Richmond River. A number of ephemeral creeks are located to the east and west of the site, a wetland is located on the southwest corner of the property boundary. The site has previously been used as grazing land, with the immediate vicinity of the site comprising grazing and rural residential land uses.

The EIS considers four residences as the most sensitive receptors for the project with these residences, located approximately 215 to 550 metres from the proposed development. Based on the information available in the EIS, there are approximately seven residences located within 1 kilometre of the proposed development.

The proposed development is accessed by Edenville Road, Omagh Road to the Summerland Way approximately 5 kilometres south of Kyogle. Edenville Road and Omagh Road are both maintained by Kyogle Council. Summerland Way is a state road managed by the Roads and Traffic Authority (RTA). All roads proposed to be used by the development are sealed, with Edenville and Omagh Roads having a width varying between 5 to 6 metres. Access to the proposed development requires the use of the Cedar Point bridge which crosses the Richmond River on Omagh Road. The bridge has a load limit of 20 tonnes and is a single lane bridge.

The development application was placed on public exhibition on two occasions from 9 October 2010 and 27 October 2010 until 29 November 2010. Submissions were received from both government agencies and the community, as described in **Section 2.0.**

Approval for the proposed development is being sought under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Under Part 4 of the EP&A Act, the development is designated development. In accordance with Clause 13B (1) and (2) of the Major Development State Environmental Planning Policy (Major Development SEPP), the determination of the proposed development has been referred by Kyogle Council to the Northern Joint Regional Planning Panel.

1.1 Scope of Work

The Panel Secretariat requested Umwelt (Australia) Pty Limited to undertake a peer review of the assessment undertaken by Kyogle Council's assessment officer of a proposed new basalt quarry at Edenville Road, Cedar Point (Kyogle Council). Specifically, the requested scope of work included:

- Review the following information:
  - Environmental Impact Statement (prepared by Greg Alderson and Associates Pty Ltd dated September 2010) submitted with the development application.
  - Submissions received by Council during the notification period.
  - Applicant's Addendum report (letter from Greg Alderson and Associated Pty Ltd, dated 31 March 2011) and minutes of further consultation undertaken by the applicant with adjoining landowners.
  - Council's interim assessment report to the Regional Panel (dated 10 March 2011)
  - Minute from public briefing meeting (dated 2 May 2011)
- Peer review the assessment report for the development application prepared by Kyogle Council's assessment officer (dated July 2011); and
- Prepare an independent peer review report which provides an independent assessment of the application and comments on the veracity of council's assessment and its recommendation.

This review has been completed by Barbara Crossley, Director, with assistance by Allison Sharp and Gabby Allan, Senior Environmental Scientists. The review has been conducted in accordance with the above scope of work, and has relied upon review of available documents, listed in **Section 1.2.**

1.2 Documents Reviewed

The following documents were provided by the Panel Secretariat for review as part of the preparation of this report.

- Director-General's Requirements for the EIS, issued by the Department of Planning on 23 November 2009.
- Environmental Impact Statement prepared by Greg Alderson and Associates Pty Ltd dated September 2010.
- Submissions received by Council and the Northern Joint Regional Planning Panel during the public exhibition and submission periods.
- Applicant's Addendum report (letter from Greg Alderson and Associates Pty Ltd dated 2 August 2011) and minutes of further consultation undertaken by the applicant with adjoining landowners.
- Council's interim assessment report to the Regional Panel (dated 10 March 2011).
- Minutes from public briefing meeting (dated 2 May 2011);

- Assessment report for the development application prepared by Kyogle Council's assessment officer (Director Planning and Environmental Services – not dated); and

- Kyogle Council's Section 94 Contributions Plan Urban and Rural Roads (2001 – amended 2008).

2.0 Overview of Submissions

Submissions for the proposed development have been received by both Kyogle Council and the Northern Joint Regional Planning Panel. An overview of the submission received is provided below.

2.1 Government Agencies Submissions

Three submissions were received from government agencies for the proposed development. A summary of each submission is provided below.

Office of Environment and Heritage (Formerly the Department of Environment, Climate Change and Water)

The Office of Environment and Heritage (OEH) did not object to the proposed development. OEH noted that the applicant will need to apply for an Environment Protection Licence (EPL) under the Protection of Environment Operations Act 1997. OEH identified a number of issues for Kyogle Council to consider during its assessment of the proposed development. These issues are outlined below:

- Given the proposed development is a new development, the noise criteria identified in Section 3.1.1 of the Alderson and Associates Noise Impact Assessment will apply to the proposed development.

- The applicant will need to specifically identify each point that discharges to the environment from the various stormwater sumps and ponds on the quarry premise. OEH will license these points and document a monitoring regime.

- The applicant will need to manage onsite sumps/basins/ponds to ensure there is sufficient capacity available to adequately manage on-site sediment and potential pollutant loads.

- Two groundwater bores are within approximately 1 kilometre of the proposed development. Monitoring of these bores outside the licensed area is considered appropriate to establish background data and provide ongoing sampling to monitor any potential effects the quarry operation may have on the groundwater at those bore sites.

- It appears that there is some uncertainty about the possibility of encountering groundwater which has resulted in the monitoring arrangement detailed in the EIS for the proposed development.

- The applicant should consult with the NSW Office of Water to determine any regulatory requirements that may be required under the *Water Management Act 2000*.

OEH provided General Terms of Approval which represent the likely conditions of the EPL required for the proposed development. The General Terms of Approval encompassed the following requirements:

- concentrations limits for surface water runoff;

- allowance for the processing of recovered aggregate waste that meets the requirements of 'The Recovered Aggregate Exemption 2010' for reuse onsite;

- noise limits;

- hours of operation;
- blasting limits for overpressure and vibration;
- hours and frequency for blasting;
- hours for drilling operations;
- prohibition of odour emissions;
- dust management;
- implementation of sediment and stormwater management during the construction and operational phases of the proposed development;
- preparation of a blast management protocol;
- monitoring records;
- blast monitoring; and
- rainfall monitoring.

Department of Trade, Investment, Regional Infrastructure and Services (DTIRIS) (Formerly NSW Industry and Investment)

DTIRIS noted that the only statutory involvement of the agency was in relation to the *Occupational Health and Safety Act 2000* and the *Mine Health and Safety Act 2004* and the associated regulations. DTIRIS did not object to the proposed development. However, DTIRIS recommended that an appropriate sub-surface assessment be carried out prior to commencement of any quarrying operations.

DTIRIS requested that annual production data for the proposed development be provided by the applicant throughout the life of the proposed development.

DTIRIS recommended that the design of the quarry, the soil and water management plan and the ongoing protection of the wetland within the Project Area should be consistent with the DTIRIS policy for the protection of key fish habitats.

DTIRIS also recommended that the site be managed in accordance with the DTIRIS Primefact titled '*Agricultural Issues for Extractive Industries on Rural Land'*.

Roads and Traffic Authority (RTA)

The RTA noted that Kyogle Council is the Road Authority for the proposed development as well as being the determining authority. Although the RTA is not the Roads Authority for the proposed development, the following comments were provided to Kyogle Council for consideration:

- traffic generated by the proposed development will have an impact on the safe operations of the existing junction of Summerland Way and Edenville Road. There are no provisions for right and left turning traffic at the junction.

- the sight distance to the south along Summerland Way is restricted by vegetation. Appropriate action is required;
- the AUSTROADS standards quoted in the EIS are outdated;
- based on the traffic data provided, Summerland Way at the junction of Edenville Road should be widened to provide an AUSTROADS CHR(S) for southbound right-turning traffic and a AUL left-turn treatment for northbound traffic;
- consideration needs to be given to the regulatory controls on the one-lane bridge, with normal practice restricting the approach that has the greatest sight distance;
- Edenville and Omagh Roads need to be upgraded to Council's standards;
- the junction of Edenville Road and Omagh Road needs to be upgraded to cater for the increase in turning traffic;
- in order to cater for right and left-turning traffic at the access point for the proposed development, Edenville Road should be widened to allow faster through traffic to negotiate stationary right turning rigid truck;
- hinged standard truck entering warning signs should be erected on each approach to the access on Edenville Road and displayed during operational hours;
- a contribution should be made towards the maintenance of the local road network based on haulage rates;
- should the proposed development be approved, the applicant will need to enter into a Works Authorisation Deed to carry out the road construction necessary for any improvements on Summerland Way;
- a number of prescribed requirements and conditions will need to be undertaken prior to the commencement of construction works. All works are to be undertaken by an RTA approved contractor and will not be at the cost of the RTA; and
- the RTA recommended that any identified road works be included in the initial environmental assessment to ensure that they can be undertaken and to reduce the need for further assessment for the Works Authorisation Deed.

It should be noted that the applicant has provided further commitments in relation to traffic and road requirements identified by the RTA as part of the response to submissions process. Details of the additional commitments are outlined in **Section 4.6.**

2.2 Community Submissions

Submissions have been received from the general community in relation to the proposed development. Initial submissions were received by Kyogle Council, with additional submissions having been received by the JRPP.

A total of 36 submissions objecting to the proposed development were received by Kyogle Council, with an additional 17 submissions objecting to the proposed development received by the JRPP. The submissions objecting to the proposal covered a wide range of issues, with some issues raised more frequently than others. Overall the key concerns of the community in relation to the proposed development centred around:

- health impacts of dust and diesel emissions;
- disturbance to rural lifestyle;
- the ability of local roads to cope with the proposed increases in traffic volumes as a result of the proposed development;
- the adequacy of the Cedar Point Bridge for use by the proposed number of heavy vehicles;
- noise generated by the proposed quarry and additional traffic movements;
- devaluation of land and properties;
- the risk of accidents due to the proposed presence of heavy vehicles on local roads and safe passing distances for vehicles;
- contamination of waterways;
- the lack of Aboriginal stakeholder consultation, the use of the previous archaeology assessment to support the proposed development and the general impact of the proposed development on cultural heritage;
- the level of consultation with the Public;
- the potential ecological impact of the proposed development;
- the potential impact of the proposed development on groundwater;
- the potential impact of the proposed quarry and traffic movements on air quality;
- the proposed operational hours of the proposed quarry;
- the potential impact of the proposed development on visual amenity;
- the potential impact of blasting including ground vibration and structural damage to buildings;
- the inadequacy of blasting data used in the blasting assessment;
- the frequency of auditing to determine compliance with development consent;
- inconsistencies throughout the EIS;
- the adequacy of the noise impact assessment and noise monitoring; and
- the adequacy of the meteorological data used in the EIS.

A number of other issues were identified throughout the submissions, these issues were identified in three or less submissions and included the impact of erosion, adequacy of fencing around the proposed development, the use of water from the existing Carlil dams which is ultimately sourced from the Richmond River, the impact of the proposed development on the Carlil's property if it was to be sold in the future, oversizing of the development, the potential for land slip along roadways, the actions of Kyogle Council during the public exhibition period, the lack of a climate change assessment, the potential for a

future rail siding, the importation of materials and the impact of the proposed development on tourism.

From an ecological perspective, the additional issues raised by the submissions included the destruction of koala feed trees, the lack of assessment of the potential impact on Endangered Ecological Communities and Groundwater Dependent Ecosystems.

It is also noted that one submission outlined that a sensitive receptor, 648 Omagh Road was considered to have been omitted from the EIS. The applicant's response to submissions identifies that this property is an additional 840 metres north of Receptor 3 and as a result, the potential impacts on the residence would be less than those identified for at Receptor 3.

A total of 49 submissions supporting the proposed development were received by Kyogle Council, with an additional three submissions being received by the JRPP. The submissions supporting the proposed development were received from the individual community members as well as local businesses. The main issues raised in the submissions supporting the proposed development were:

- the provision of local jobs;
- the provision of a local source for roadbase and concrete aggregate material;
- the potential for a local source of basalt to lower the cost of the product materials within the Kyogle Shire;
- a reduction in the cost of haulage for product materials if the material was to be sourced locally;
- the provision of a higher quality material than the material which is currently available;
- the likelihood that local roads will be upgraded due to the proposed development;
- a long term investment in the future of Kyogle Shire; and
- the operation of the proposed development in accordance with strict development approval conditions provides for suitable development in the area.

3.0 Review of Kyogle Council's Assessment Report

The EP&A Act requires that a consent authority take into consideration the matters listed in Section 79C when determining a development application. Council's assessment report has broadly considered the matters listed in section 79C, however we note the following:

- Council currently has a Draft Kyogle Local Environment Plan 2011 which should be addressed in accordance with section 79C(1)(a)(ii);

- the likely environmental impacts of the proposed development (section 79C(b)) have not been specifically considered by Council, with the report relying on responses to public submissions to address these issues; and

- the suitability of the site for the development (section 79C(c)) has not been specifically considered by Council, again with the report relying on responses to public submissions to broadly address this issue.

As noted above, Council's assessment report is largely focused on responding to the public submissions made during exhibition of the development application. Whilst the detailed consideration of the submissions provides for transparency of Council's assessment in relation to the matters raised in the submissions, this approach does not provide confidence that Council has robustly assessed each of the relevant merit issues for the proposed development.

Based on available information from the EIS and the assessment process, in the opinion of the reviewer, the key issues that warrant further consideration by Council and the JRPP prior any decision to approve the proposed development, include:

- Adequacy of noise, blast and air impact assessment and consequent implications for mitigation and management;

- Further resolution of approach to road safety, road/bridge condition matters;

- Aboriginal heritage assessment and consultation;

- Clarification of aspects of the ecology impact assessment and proposed offset and management; and

- Surface water – resolution of whether approval to discharge is sought as part of this application.

One of the key issues of concern in relation to Council's recommended approval of the proposed development is the acknowledgement by Council in Section 5.3 Conclusion, that:

…it is possible that some of the properties in close proximity will be adversely impacted upon by the proposed quarry, and that the limits proposed by DECCW and Council may not be met by the applicant. If this occurs and mitigation measures cannot be put in place to comply with the limits imposed, then the only way the quarrying activities could continue would be if the affected receptors were removed. This could be done by either purchasing the receptors and retaining them in the same ownership as the quarry land and/or quarry operator, or by relocating the affected dwelling/s. This is not something that can be conditioned under the EP&A Act, but may be the only way to resolve potential impacts on these receptors should the proposed mitigation measures fail to meet the required limits.

For Major Projects of state significance, there have been a number of precedents involving the approval of projects that are likely to have significant noise or dust impacts on private

residences or properties above the relevant criteria, with such development consents or project approvals conditions providing:

- Performance criteria required to be met to protect amenity of private residents;
- Clear and transparent processes for identification and verification of exceedances of relevant criteria; and
- Processes that are triggered upon exceedance of relevant criteria to provide for investigation; management and mitigation; and/or, on triggering of significant affect and at the request of the property owner, acquisition of the property at fair market value.

The adoption of such an approach for Major Projects of state significance has been justified on consideration of the balance of economic, social and environmental considerations, and in the knowledge of the reviewer has not been applied to proposed extractive industry developments that do not have a demonstrated state significant benefit. For the proposed Cedar Point Quarry, there is inadequate assessment to provide sufficient certainty that either there will be no significant impacts on private residences, or if there is such significant impact, the number and location of residences that are likely to experience a significant impact over the life of the proposed quarry. In addition, there is insufficient project justification for a state significant level of benefit that warrants approval of the project in the circumstance that significant impacts are likely on surrounding private properties, to the extent that warrants consideration of acquisition conditions.

On this basis, it is recommended that further assessment is required prior to the JRPP proceeding to any decision to approve the project. Whilst there is insufficient detail available to confirm this view, it is likely that there would need to be further consideration of the quarry design, management and monitoring measures, and possibly establishment of additional quarry buffer by applicant seeking agreement and/or acquisition of potentially significantly affected private properties, to be able to demonstrate with certainty that relevant criteria can be met, prior to determination of the project.

Further detailed assessment of the relevant key issues is provided in **Section 4.0.**

Council's assessment report has recommended that the proposed development is approved, subject to conditions. If the proposed development is approved, many of the recommended conditions are supported, however there is a need for many conditions to be refined or revised in consideration of the detail of the assessment and in order to ensure that the conditions provide clarity on compliance requirements and are auditable.

4.0 Assessment of Key Issues

4.1 Strategic Planning Context

The local and regional planning instruments, plans and strategies relevant to the proposed development include:

- Interim Development Order (IDO) No. 1 – Shire of Kyogle;
- Development Control Plan (DCP) No. 1 – Subdivision;
- DCP No. 2 – Development in Rural Areas;
- Draft Kyogle Local Environmental Plan (LEP) 2011;
- North Coast Regional Environmental Plan (REP);
- Far North Coast Regional Strategy.

A review of these planning instruments, plans and strategies identified the following key planning considerations relevant to the proposed development:

- The EIS identifies the site as being within the Non Urban 1(A) zone, while the Council report identifies the site as being within the 2(V) Village zone. It is recommended that clarification be sought as to the zoning of the land. Without access to the zoning maps for IDO No. 1, the zoning of the site is unclear.

- DCP No. 1 and DCP No. 2 require a buffer zone of 500 to 1000 metres, depending on the scale of the operation, between any extractive industry and residential dwelling or rural subdivision. This is, however, only applicable to land within the Non Urban 1(A), 1(B) and 1(C) zones. These controls do not apply to land within the 2(V) Village zone.

- A Draft Kyogle LEP is currently on public exhibition. Under the Draft LEP, the proposed development site is zoned RU1 (Primary Production) and E3 (Environmental Management). Extractive industry is a permissible land use within these zones, as are a range of conflicting land uses such as dwellings. The Draft LEP identifies the resource and a 1000 metre buffer zone on a Mineral Resource Buffer Map for the purpose of linking it to Clause 13 of SEPP (Mining, Petroleum Production and Extractive Industries) 2007. Clause 13 requires a consent authority to consider the compatibility of current or future extractive operations when considering a development application within the mapped zone.

- The North Coast REP highlights that draft LEP's should protect extractive resources by including these resources, and a sufficient buffer, within a suitable zone which prohibits conflicting land uses such as dwellings.

- The Far North Coast Regional Strategy identifies the resource within the proposed development site as an extractive resource of regional significance. Actions recommended as part of the Strategy include the protection of regionally significant extractive resources through LEPs and incorporation of buffers to avoid land use conflicts.

4.1.1 Discussion

The target resource has been identified to be of regional significance, and is, in fact, the only extractive resource of regional significance within the Kyogle LGA identified by the Far North Coast Regional Strategy. The North Coast REP and Regional Strategy both recommend that LEPs be used to protect extractive resources through appropriate zoning and incorporation of buffers on adjacent land to prevent conflicting land uses and sterilization of these resources.

While it is unclear whether the site is zoned Non Urban 1 (A) or 2(V) Village, the current and historical development controls applicable to these zones have failed to provide for the establishment or implementation of a suitable buffer zone around the site. This has resulted in the encroachment of rural and rural residential dwellings as close as approximately 200-300 metres from the proposed development site. As a consequence the proposed development presents land use conflict issues between the development of the extractive resource and existing rural residential land uses in the area. The Draft LEP is likely to provide for protection of this extractive resource from future development, however will not resolve conflicts associated with existing land uses.

4.2 Proposed Development Details

There are aspects of the proposed development that are inconsistently detailed in the EIS and associated documents. For example, the total resource is referred to in various ways, including:

- Extraction from a resource of over 5 million m^3 in the EIS Executive Summary, with acknowledgement that not all resource will be extracted by the proposed quarry operation;
- EIS Section 3.2.1 refers to volume of basalt in the whole site being 4 million m^3;
- Section 1 of the Operational Management Plan (OMP) (included as EIS Appendix) refers to the quarry resource estimated at 4 million m^3;
- Section 2.0 of the OMP refers to the anticipated life of the quarry expected to be in the order of 45 years …or upon the extraction of a total of 2 million m^3 or 5 million tonnes;
- Council's assessment report refers on page 30 to 'estimated volume of 4 million m^3 being procured depending on the final area and depth of extraction.' , but earlier in Section 4.2 referred to '4 million tonnes being extracted at a rate of 47000 cubic metres per annum.'

Clarification of the total resource proposed to be extracted is recommended. The proposed development in the EIS is most consistently described as an annual extraction rate of 47,000 m^3 over 43 years. Based on the applicants assumed bulk density of 2.2t/m^3, this would equate to 4.44 million tonnes, although it could be argued that a higher specific density may be warranted.

Council's assessment report recommends the production rate of the proposed development be halved until such time as the Edenville Road (Cedar Point) Bridge is replaced with a two lane bridge with no load limits, or the existing bridge is upgraded so as to no longer require load limits. In correspondence of the 2 August, 2011, Greg Alderson and Associates Pty Ltd, on behalf of the applicant, provided comment on Council's proposed development consent

conditions to the JRPP. In this correspondence, there is suggestion of acceptance of Council's approach to reducing the production rate (subject to reconsideration of other road improvement conditions), but in doing so, the applicant has not taken the opportunity to reduce the scale of the proposed quarry area or volume sought for approval, accordingly. Given the issues in relation to potentially significant impacts on surrounding private properties, consideration of the full implications of a reduction of production rate on environmental impact assessment outcomes is considered essential to the determination process.

Further it is noted that, a project life of in excess of 40 years is generally not adopted for current extractive industry development approvals, with a life in the order of 20-25 years being considered more appropriate, providing sufficient project life to provide confidence for project investment, but ensures the development consent must be revisited within a timeframe that is reasonable to expect that relevant technologies, regional planning, development requirements and community expectations may have evolved.

Given the above inconsistencies and the sensitivity in relation to potential land use conflicts, it is important that there is adequate definition of the project to provide certainty in relation to the nature of any approved development, and just as importantly to provide a sound basis for impact assessment.

4.3 Air Quality

The assessment of air quality undertaken for the proposed development is qualitative. The assessment focused on the measures which would be put in place to avoid, minimise or manage the potential dust emissions from the proposed development. The EIS states that the proposed development is not likely to generate levels of dust which will impact on the existing air quality environment.

The measures that are proposed to minimise air quality emissions are appropriate for the nature and scale of development but without a quantitative assessment, it is not possible to confirm whether the proposed development will have a significant impact on air quality at nearest private residences. Given the proximity of nearest private residences and therefore the risk of significant impacts, it is recommended that further air quality assessment, including predictive modelling be conducted by an appropriately qualified air quality specialist, in accordance with relevant guidelines (refer to EPA, 2001a and 2001b noted in the Department of Environment and Climate Change requirements for the preparation of the EIS).

Further, it is recommended that if the project is approved, specific conditions are required to ensure that the proposed development complies with relevant air quality criteria and appropriate management and monitoring is implemented.

It is recommended that the development consent conditions include:

- Specific air quality monitoring criteria which are consistent with the OEH criteria for:
    - depositional dust – a maximum total deposited dust level of 4g/m^2/month and a maximum increase in deposited dust level of 2g/m^2/month;
    - total suspended particulates (TSP) – a maximum annual average of 90µg/m^3;
    - particulate matter of less than 10µm (PM10) – a maximum annual average of 30µg/m^3 and a 24 hour maximum of 50µg/m^3.

- Inclusion of specific air quality management measures as part of the Operational Plan which include:
  - preparation in consultation with OEH and Kyogle Council;
  - description of the measures that would be implemented to ensure compliance with the relevant air quality criteria at nearest private residences;
  - implementation of an air quality monitoring program which includes at least six months of background air quality monitoring data prior to the commencement of quarry operations; and
  - a protocol for determining and responding to exceedances of the air quality criteria.

4.4 Noise

Potential noise impacts were noted as a key issue in the Council Assessment Report, and were raised as a concern in many community submissions. The EIS included a Noise Impact Assessment prepared by Greg Alderson & Associates Pty Ltd (2010). The report provides summary details of existing background noise levels, establishes noise criteria, identifies potential noise emission sources, provides results of noise modelling of potential noise levels that may be experienced at nearest residences, identifies the need for further noise mitigation, and provides brief analysis of the potential noise mitigation measures. The noise impact assessment concludes that the proposed quarry can proceed without adverse impacts on the neighbouring residences during normal hours of operation of the quarry, provided works are contained within the boundaries assumed in the report and noise mitigation (including acoustic barriers) are implemented as proposed. During drilling operations which occur on a few occasions during the year in preparation for blasting, exceedances are predicted at nearest residences.

Review of the noise assessment indicates that the reported achievement of relevant noise criteria in the assessment is marginal for a number of quarry stages and predictive modelling locations, and when the quarry operations are at or close to the surface relies upon the establishment of a barrier of between 4.5 to 6 metres height at specific locations. These barriers are proposed to be temporary in nature and constructed of hay bales or concrete blocks.

Given that a number of residences are located in close proximity to the site, and there is heavy reliance on noise mitigation techniques to achieve the relevant noise limits, it is important that the noise assessment is conducted in accordance with the relevant guidelines to provide confidence in the adequacy of the assessment. Review of the assessment reveals a number of deficiencies in the noise assessment, including:

- insufficient detail is provided in relation to the measurement of background noise levels to be able to verify that the identified data is representative of the existing noise environment;
- the lack of certainty regarding background noise levels places some uncertainty in relation to the identified noise criteria;
- a number of technical issues in relation to the noise modelling places doubt on the veracity of the noise predictions; and
- the reliance on noise mitigation by measures such as noise barriers is not supported by sufficiently robust analysis, or specification of required noise mitigation measures to

provide sufficient surety that the predicted noise levels, with mitigation, can be achieved.

It is recommended that further noise assessment is required, by an appropriately qualified noise specialist. Further details of issues in relation to the noise assessment are provided in the following sections.

4.4.1 Background Noise Data

The reported background noise levels seem relatively high for a predominantly rural/rural-residential environment. The veracity of the background noise data is essential as in accordance with the EPA (2001) Industrial Noise Policy, the relevant noise criteria is derived by consideration of background noise levels. From the available data in the noise assessment report, the following specific issues are of concern in relation to the establishment of background noise levels:

- No information was provided in the report as to when the background noise monitoring was undertaken and therefore it is unclear whether the data is representative of the existing environment. For example, was the data from within a few weeks, months, or years of the creation of the report? At what time of the day was the data recorded and is this representative of the proposed quarry operation hours?

- It is noted in the report that a dominant source of background noise during the day includes traffic. It is not clear from the report as to the influence of the road traffic noise. Depending on the location of noise measurements, this may inadvertently result in higher noise criteria if measurements were made in proximity to the roadways and particularly at monitoring locations 1 and 2 where access to private properties was not obtained.

- Insufficient detail on background noise measurement methodology raises doubt regarding the veracity of the data. It is not apparent as to whether long-term or short-term background noise monitoring was undertaken. It is not clear whether the appropriate methodology was adopted as per Section 3 of the Industrial Noise Policy, *Determining Existing Noise Levels.* The long-term background noise measurement procedure should be used during the planning and consent stage for developments that have the potential to cause significant noise nuisance, which is applicable for this project. The procedure for determining long-term background noise as outlined in Section B.1 'Long-term background noise' of Appendix B of the INP should be undertaken, including the monitoring of valid data of the background noise and meteorological conditions continuously for each day of the week the proposed development will be operating and over the proposed operating hours.

4.4.2 Noise Criteria

Based on the outcomes regarding the appropriateness of the background monitoring methodology discussed above, the Rating Background level (RBL) from Section 2.1 of the report is potentially non-representative and this has potential to influence the derivation of the relevant noise criteria.

4.4.3 Noise Modelling

Based on review of the information available in the noise impact assessment report, there are many issues that raise doubt in relation to the veracity of the noise model predictions relied upon for the EIS. These include:

- Clarification of the detail of noise source data (sound pressure levels versus sound power levels) and assumed source heights.

- Further consideration of the potential for wind enhancement of emitted site noise, given the proposed quarry site is located on the top of a plateau which has an elevation of about 80 metres above the valley floor.

- Clarification of the selected modelled receiver locations. These should be to all nearest surrounding residences, not just the noise monitoring locations. It is also noted that in addition to the nearest residences, there appear to be further residences located approximately 800 to 1200m from the site boundary and given the level of impact to nearest modelled receiver, modelling assessment to the locations is warranted.

- Clarification as to whether the noise sources are modelled as continuously operational over the assessment period or at a reduced emitted sound power level based on only a percentage period of use.

- In order to assess the predicted effectiveness of the proposed attenuation option, it would be preferable to see the results of noise modelling at each receiver prior to the application of the adopted noise attenuation methods (only mitigated results shown in Table 3.4.7) and for an assessment undertaken under specified meteorological conditions.

- Based on the report text it is assumed that the nominal density of the hay bales appears to equate to that of the modelled concrete blocks, with the barrier appearing to be modelled as perfect barriers (allowing no sound transmission through). It is recommended that specific material properties, thickness and effective transmission loss be taken into account the modelled attenuation. Hay bales are not an ideal material for long-term use as barriers due to material degradation. Hay bales are at best an interim measure with no longevity of structural and material integrity guaranteed through this barrier technique.

- The noise impact from the drills is modelled separately. It is not clear whether there is commitment to drilling operations only when other equipment is not operational on-site.

Further it is noted that one community submission included a preliminary analysis by a noise specialist who raised a reasonable scenario questioning the accuracy of the noise calculations. The response on behalf of the applicant did not include sufficient technical detail to provide any further confidence on the veracity of the noise modelling.

Further noise assessment, by a qualified noise specialist, is essential to provide adequate certainty in relation to the predicted affects on private residences, confidence in relation to the likely success of proposed noise attenuation and mitigation measures, and a sound basis for compliance monitoring if the proposed development is approved.

4.5 Blasting

The blast impact assessment in the EIS outlines the monitoring results from a trial blast conducted in 1996. Commonly such trial blast results are used to confirm a site specific relationship between site blast design and measured blast overpressure and vibration results. It is not clear whether such a process has been used to derive the blast design parameters specified in the EIS and as no other site blast prediction process has been reported, it is uncertain as to whether the proposed blast design will achieve the relevant criteria.

Further, the Council assessment report proposed development consent conditions (Conditions 32 (b) and (c)) seek to impose minimum buffer zones based on anticipated blast levels. Whilst the intent of these conditions is understood, the framing of these conditions is not clear and would be difficult to enforce. It is recommended that further clarification is required in relation to predicted blast levels, and that clear and enforceable development consent conditions are imposed, that place the onus on the applicant to design the blasts in a manner that meets the relevant blast criteria.

It is further noted that Council has recommended a condition that requires no flyrock to 'travel past the property boundary or more than 250 metres from the blast site.' In a practical sense, this is difficult to guarantee and given that flyrock can pose a safety hazard, often a 500 metre buffer is required from blasting operations to nearest private residences. If the project is approved, it is recommended that development consent conditions are imposed that require a process of notification and measures to ensure that there are no safety risks posed by flyrock on private properties or public roads within 500m of blasting operations.

4.6 Traffic

The EIS includes a Traffic Impact Assessment prepared by Greg Alderson & Associates Pty Ltd (2010). The proposed development would be accessed via Edenville Road and connect to the Summerland Way via Edenville Road and Omagh Road. Summerland Way is a State road, while Edenville and Omagh Roads are local roads for which Council is the roads authority.

Edenville and Omagh Roads are sealed roads, however have narrow sections where the road capacity drops to 0-150 Annual Average Daily Traffic (AADT). These roads currently have relatively low traffic volumes (150 and 251 vehicles per day respectively).

A single lane, load limited bridge is located on Omagh Road on the proposed haul route between Edenville Road and Summerland Way. In order to comply with the load limit at this bridge, haulage from the proposed development would be limited to 10 tonnes per vehicle. Council has identified that the load limit on this bridge is related to the design limitations of the bridge and not due to the deterioration of any components of the bridge, or the bridge being in "poor condition" or the "end of its structural life".

The proposed development as described in the EIS would generate in the order of 87 additional vehicles per day, 83 of which being heavy vehicles. Peak hour traffic generation is predicted to be in the order of 12 vehicles per hour, 10 of which being heavy vehicles.

The key impacts on the local traffic network associated with the proposed development include:

- safety impacts, in particular, the traffic generated by the proposed development would result in traffic flows exceeding the stated road capacity of sections of Edenville and Omagh Roads. The proposed development would also result in additional heavy vehicle movements at local intersections and result in impacts on road condition;

- intersection impacts, in particular, additional heavy vehicle movements associated with the proposed development would impact the level of service of local intersections and require upgrades to these intersections: and

- bridge impacts, in particular, additional heavy vehicle movements associated with the proposed development would impact the level of service of the Edenville Road (Cedar Point) Bridge. Analysis provided in the Traffic Impact Assessment states that the maximum queue length at the bridge is unlikely to change from the currently predicted 3

vehicles. Space is available for queuing of up to 4 heavy vehicles between the bridge and Summerland Way, however, the pavement width of the road would require widening to allow for vehicles to pass queuing heavy vehicles.

Council has also identified that the additional heavy vehicle movements are likely to cause a reduction in the remaining life of the bridge structure. Council currently has no contributions plan in place for the replacement of the Edenville Road (Cedar Point) Bridge, nor is there currently any plan to or timing for the replacement of the bridge. Council anticipate that the proposed development, at full production, could require the upgrade or replacement of the bridge within 5-10 years due to increased delays, queuing and a reduction in the life of the structure. The mechanism for how this upgrade or replacement would be funded is unresolved, with Council identifying the need to review possible cost sharing arrangements with the applicant and the community. It is our recommendation that the cost sharing mechanism for funding this upgrade or replacement be resolved and established by way of conditions of consent for the proposed development.

The following management measures have been proposed or agreed to by the applicant, following recommendations by Council and/or the RTA:

- upgrade of the Summerland Way and Omagh Road intersection to Council and RTA requirements;
- upgrade of the Edenville Road and Omagh Road intersection to Council and RTA to requirements;
- upgrade of Edenville Road and Omagh Road to 6 metre pavement width from Summerland Way to 150 metres west of the site;
- upgrade of the site access intersection on Edenville Road to Council requirements; and
- installation of truck warning signage along Edenville Road to Council requirements.

In addition to the management measures outlined above, Council has recommended that the production rate of the proposed development be halved until such time as the Edenville Road (Cedar Point) Bridge is replaced with a two lane bridge with no load limits, or the existing bridge is upgraded so as to no longer require load limits. The reasoning provided by Council is that the traffic generated by the proposed development at full production would cause the design limitations of the bridge to lead to possible delays, excessive queuing, and a reduction in the remaining life of the structure.

The findings of the Traffic Impact Assessment do not appear to support Council's reasoning in relation to increased delays and excessive queuing, with analysis suggesting there would be no change in maximum queue length as a result of the proposed development. There has been no assessment of the potential impacts of the reduced traffic generation recommended by Council.

The applicant has accepted Council's recommendation to halve production rates until such time as the bridge is upgraded, however, in this context, has questioned the need to undertake the upgrades to the intersection of Summerland Way and Omagh Road until such time as a production levels are permitted to increase. In order for a conclusion to be drawn on this proposition, the applicant would need to provide additional analysis of post development traffic volumes at this intersection based on the reduced volumes.

There is also some confusion regarding how the applicant and Council has referred to Omagh Road and Edenville Road, with the applicant referring to the section of road located

between Summerland Way and Edenville Road as Omagh Road and Council referring to this section of road as Edenville Road. This should be resolved for the purpose of clarity.

Finally, it is noted that in Council's recommended conditions, the applicant is required to pay $4792 per annum for heavy haulage contributions under Section 94 of the Environmental Planning and Assessment Act 1979. The condition references the Kyogle Council *Section 94 Contributions Plan – Urban and Rural Roads 2002 (as amended).* On request of the JRPP, Council provided a copy of the Plan, which for clarity we note is referenced as 2001 (as amended) but more importantly, the relevant heavy haulage contribution is referenced in this amended plan as being provided by the Kyogle Council Section 94 Contributions Plan, 2008, Residential, Rural Residential and Heavy Haulage Development. This plan should be appropriately referenced in the development consent conditions. Our review of the calculations in accordance with this plan also indicates a higher heavy haulage contribution would be required for this development, than that specified in the Council's recommended conditions. The detail of the calculation assumptions is not clear from Council's report and it is recommended that Council and the JRPP review the assumptions and the outcomes of the calculated contribution prior to any approval of the development.

4.7 Groundwater

The EIS identifies that the proposed development is unlikely to have a significant impact on groundwater. The EIS identifies two existing groundwater bores to the north west and south of the site. The Soil and Water Management Plan included as Appendix B of the EIS, identifies an additional groundwater bore to the north of the site.

Based on the review of the EIS and the OEH submission, Kyogle Council has sought further advice from the NSW Office of Water in relation to the potential impact of the proposed development on groundwater but no response had been received.

The groundwater bores located to the north east and south of the site are a minimum 20 mAHD below the proposed limit of extraction for the quarry. The groundwater bore located to the northwest of the site is located at a similar height to the proposed extraction limit, but does not occur within the same ridgeline. The EIS concludes that the proposed development is not likely to have a significant impact on the groundwater bores as a result.

The NSW Office of Water is the agency responsible for the implementation of the *Water Management Act 2000*, and Kyogle Council has provided advice to the applicant to obtain all relevant approvals for the proposed development. However it is recommended that a condition requiring groundwater monitoring of the three bores surrounding the proposed development be included in the development consent conditions.

The applicant has proposed to undertake groundwater monitoring as part of the ongoing operations for the site. The groundwater monitoring proposed included monitoring of:

- pH;
- conductivity;
- total dissolved solids;
- total suspended solids;
- BOD5;
- hydrocarbons; and

- flow rate.

Kyogle Council has included a condition requiring the monitoring of the groundwater bores to the north east and south of the proposed development. It is recommended that the condition require annual monitoring of the three groundwater bores and in addition to the above parameters, the monitoring should include the monitoring of the relative water level in the bores over time. The results should be reported in the annual environmental management report and provided to Kyogle Council, OEH and the NSW Office of Water.

4.8 Surface Water

The surface water assessment undertaken for the proposed development is qualitative, with the exception of modelling undertaken to determine dam sizing. The site is not traversed by any surface water bodies, however the EIS identified that a number of gullies are present to the east and west of the proposed quarry footprint. The Richmond River meanders generally to the southeast and east of the proposed quarry site, and at its nearest is approximately 200 metres from the site. Key surface water issues for the proposed quarry relate to the potential for off site discharge of surface water, and lack of clarity around the need or otherwise for water supply from the Richmond River.

4.8.1 Water Management and Surface Water Discharges

The EIS proposes the establishment of a series of sediment dams, sumps and clean water dams. Proposed diversion drains which will direct clean water away from the proposed quarry footprint and the haul road will provide for effective minimisation of impacts on surface water.

The EIS identifies that the surface water collected in the sumps and sediment ponds will be used for dust suppression and irrigation for rehabilitation areas as well as 'maintaining flows offsite' (Section 3.4 of EIS). A number of references within the EIS identify the potential for excess water to be discharged offsite but it is unclear as to the method or location of discharge. The Department of Environment, Climate Change and Water note that 'the applicant will need to specifically identify each point of discharge to the environment from the various stormwater sumps and ponds on the quarry premises'…to assist in licensing under the Protection of the Environment Operations Act. From a development consent perspective there is insufficient information available for assessment of the potential impacts of surface water discharge and further assessment of the need for and nature of any proposed off-site discharge, including further clarity on location, volume, impacts and proposed controls for such discharge, is recommended prior to any determination of the proposal.

In the absence of such further assessment, a condition could be imposed preventing the off-site discharge water from the site. There are quarries in other regions that operate as 'closed water management systems' recycling all site water and avoiding the need for off-site discharge. There is insufficient water balance information available to determine if this is feasible at this site, and given the relatively high rainfall in this area, without further information it cannot be assumed this is feasible.

There is reference in the EIS to potential future water supply from the Richmond River or other sources, and the appropriate licence for such water supply would be obtained at that time. It is important to note that as there is no current proposal for water supply sought as part of this development application, than any approval of this application would not provide development consent for water supply and any associated works.

4.8.2 Water Quality Monitoring

Background monitoring has not been undertaken to establish the existing water quality of the surrounding water bodies including the wetland located onsite. The EIS speculates that the health of the surrounding drainage lines and the Richmond River is good, however no data is provided to substantiate the existing background water quality.

Whilst background monitoring of surface water has not been undertaken to support the surface water assessment, the applicant has proposed to undertake background monitoring of surface water prior to the commencement of quarry operations. The applicant has proposed to undertake fortnightly monitoring for a period of two months. It is recommended that this monitoring is extended to provide a more representative sample of varying rainfall conditions.

In addition to undertaking background surface water quality monitoring, the applicant has proposed to undertake an ongoing surface water monitoring program of the onsite water storages. It is recommended that a condition requiring the implementation of a surface water quality monitoring program for onsite water storages and natural water bodies including the onsite wetland and surrounding gullies be included.

4.8.3 Maintaining water quality of the Onsite Wetland

The EIS does not identify whether the proposed development will have an impact on the surface water quality of the onsite wetland which contains the 'Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions' EEC. Given the uncertainty in relation to the potential for off-site discharge, further assessment is recommended in relation to this matter.

4.8.4 Soil and Water Management Plan

The Applicant submitted a soil and water management plan as part of the EIS for the Proposed Development. It is recommended that a condition be included in any development consent requiring the soil and water management plan to be:

- prepared in consultation with OEH, NSW Office of Water, DTIRIS and Kyogle Council;
- be submitted to Kyogle Council for approval prior to the commencement of construction;
- include a site water balance, an erosion and sediment and control plan, measures to protect the on-site wetland, and a surface water monitoring program.

4.9 Heritage

4.9.1 Aboriginal Heritage

The EIS for the proposed development includes an Archaeological Survey Reports prepared by Huw Barton in 1996 and 1998. The report was prepared for the original application for the development of a quarry at the site by Kyogle Council.

The survey conducted as part of the report identified two scarred trees located at the southern end of the proposed development. The survey did not identify any further archaeological sites. The report was originally prepared in consultation with the representatives of Gugin Gudduba Local Aboriginal Land Council (GGLALC). The survey for the report was undertaken with the GGLALC representatives over one day. The study area had restricted visibility due to grass coverage. The report noted that the site has limited

topsoil due to the nature of the basalt deposit. The ground surface had been disturbed in three locations for growing vegetables, no artefacts were discovered at any of these locations.

The scarred trees which were identified during the survey have been excluded from the proposed quarry footprint and are planned for protection. The EIS does not provide a map showing the location of the scarred trees.

A number of community submissions identified Aboriginal heritage as a key issue. The primary issues raised by the submissions were the age of the assessment and the level of consultation with Aboriginal stakeholders provided for in the EIS. One submission discussed issues raised by a member of the Aboriginal community at the Kyogle Council meeting in November 2010 relating to cultural significance of the proposed site

The Council assessment report mentions that the Archaeological survey report lacked an assessment of cultural significance from the GGLALC. In response, Council contacted the GGLALC and a site visit was undertaken. Details relating to the site visit are not provided within the Council assessment report. A submission provided for the JRPP by the property owner outlines that a further site inspection was undertaken in November 2010. The submission details that the site inspection was undertaken by representatives from the GGLALC, Kyogle Council and the property owners. The submission outlines that discussions were held regarding the preservation of the scarred trees and a plateau area which may have been used as a site area.

The Council assessment report also details that a site inspection was undertaken by the Aboriginal Heritage Conservation Officer – Northern of the OEH in association with the GGLALC on 24 May 2011 (refer to Section 4.6, point 2). The outcome of the site inspection was that the two trees identified as having cultural significance to the GGLALC should be entered into the Aboriginal Heritage Information Management System. A record of this site visit detailing the discussions held between OEH and the GGLALC has not been provided by Council or the OEH.

In response to the identification of the scarred trees in the southern area of the site, the proposed quarry footprint has been reduced to avoid the destruction of the culturally significance site.

The key issues for discussion in relation to the Aboriginal archaeology assessment are consultation in accordance with the relevant OEH guidelines and the assessment of cultural significance in addition to archaeological significance.

4.9.2 Consultation with Aboriginal Stakeholders

Since the completion of the archaeological survey report in 1996, the OEH has released a number of consultation guidelines for projects involving Aboriginal heritage assessments. The current guidelines, Aboriginal Cultural Heritage Consultation Requirements for Applicants (OEH Guidelines) were released in April 2010 and require all project applications after 12 April 2010 to comply with the guidelines. The OEH Guidelines require applicants to consult with Aboriginal people about the Aboriginal cultural heritage values (cultural significance) of Aboriginal objects and/or places within a proposed project area in order to provide for the Department's responsibilities under Part 6 of the *National Parks and Wildlife Act 1974*.

Consultation in accordance with the OEH Guidelines has not been undertaken as part of the EIS. As a result Aboriginal stakeholders with an interest in the proposed development may not have been provided with the opportunity to participate in consultation relating to the

proposed development. The consultation process detailed by the OEH guidelines aims to improve assessment outcomes by ensuring Aboriginal people have the opportunity to:

- provide relevant information about cultural significance and values of the Aboriginal object(s) and/or place(s)
- influence the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s);
- actively contribute the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or places within the site; and
- comment on draft assessment reports before they are used as part of a project application.

Whilst there was more recent involvement of the GGLALC in the site inspections held in 2010 and 2011, there is still a lack of opportunity for broader involvement from the Aboriginal community. It is recommended that further consultation is conducted in accordance with the relevant guideline.

4.9.2.1 Consideration of Cultural Significance

The archaeology assessment prepared for the proposed development in 1996/98 does provide for consideration of cultural significance. Whilst the contribution of the GGLALC in relation to cultural significance is important under the OEH Guidelines, it is also important to note that knowledge about the cultural significance of the site may be held by additional members of the Aboriginal community.

In accordance with the OEH Guidelines, the applicant must afford Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects(s) and/or place(s) in the area of the proposed development the opportunity to be involved in consultation so that information about cultural significance can be provided to inform the OEHs consideration of the proposed development.

The OEH guidelines identify that the relevant LALC is one component of the consultation process for Aboriginal heritage assessments. The applicant is required to identify potential Aboriginal stakeholders using a number of sources, including the relevant LALC which may be able to assist the applicant in identifying Aboriginal people who may have an interest in the proposed development and who hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or places. If the LALC holds knowledge relevant to the project, the LALC is required to register as an interested party in addition to other Aboriginal people which may have an interest in the project.

The lack of consultation with the broader Aboriginal community in relation to the proposed development has resulted in limited cultural significance assessment. The broader Aboriginal community may hold knowledge relating to the cultural significance to the site which should be considered in the determination of the development application.

It is further noted that the Department of Environment, Climate Change and Water provided no comment on cultural heritage matters in their submission on the EIS. It is recommended that in addition to further consultation by the applicant with relevant Aboriginal stakeholders, in accordance with the relevant guideline, that the Council seek specific advice from OEH in relation to the Aboriginal Heritage Assessment for the proposed development.

4.9.3 Non-Aboriginal Heritage

The Director General's Requirements issued on 23 November 2009 require the EIS to assess the potential impacts of the proposed development on non-Aboriginal heritage. The EIS and Council's assessment report do not address non-Aboriginal heritage. It is recommended that additional information be sought from the application to enable adequate assessment of this issue.

4.10 Ecology

The EIS included a flora and fauna assessment prepared by Landpartners Limited. The flora and fauna assessment was based on the review of historical assessments associated with the site, searches of the OEH NSW Threatened Species Atlas and the Environment Protection and Biodiversity Conservation (EPBC) Protection Matters Database and a one day flora and fauna survey of the site. The flora and fauna assessment identified the following threatened species and endangered ecological communities within the site or as having the potential to occur within the site:

- one threatened flora species (*Hydrocharis dubia* (Frogbit, listed as vulnerable under the EPBC Act and a listed Rare or Threatened Australian Plant (ROTAP));
- 11 threatened fauna species
  - *Calyptorhynchus lathami (*Glossy Black Cockatoo, vulnerable)
  - *Circus assimilis* (Spotted Harrier, vulnerable)
  - *Daphoenositta chrysoptera (*Varied Sittella, vulnerable)
  - *Ephippiorhynchus asiaticus* (Black necked stork, endangered)
  - *Glossopsitta pusilla (*Little Lorikeet, vunerable)
  - *Grus rubicunda (*Brolga,)
  - *Irediparra gallinacea (*Comb-crested Jacana, vulnerable)
  - *Phascolarctos cinereus* (Koala, vulnerable)
  - *Pteropus poliocephalus (*Grey-headed flying fox, vulnerable, EPBC listed as vulnerable)
  - *Tyto capensis* (Grass Owl, vulnerable)
  - *Tyto novaehollandiae (*Masked Owl, vulnerable)
- Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions EEC
- Subtropical coastal floodplain forest of the NSW North Coast Bioregion EEC
- Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions EEC
- Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions EEC.

The recorded EECs do not occur directly within the proposed quarry footprint. The vegetation community which occurs within the proposed quarry footprint is identified by the flora and fauna assessment as being loosely analogous with Forest Ecosystem 73 – Lowland Red Gum, with Forest Red Gum largely absent. The Draft Richmond Regional Vegetation

Management Plan (2002) identifies the community as being of high conservation value, with 60% of the community having been historically cleared. The flora and fauna assessment concludes that the community within the proposed quarry footprint has been previously impacted by historical clearing and pasture improvement, lowering its conservation value. The proposed development will require the removal of approximately 257 trees and 12 stags (although estimates of the numbers of trees are inconsistent throughout the EIS documentation).

Key issues for discussion in relation to the flora and fauna assessment include survey methodology, the assessment of potential koala habitat in accordance with State Environmental Planning Policy (SEPP) 44 and the lack of threatened species Assessment of Significance under Section 5A of the EP&A Act.

4.10.1 Survey Methodology

The flora and fauna assessment survey methodology included a one day survey undertaken on 6 June 2010. The survey involved meandering transects and a single 20m by 20m quadrat. The quadrat was undertaken within the Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions EEC located outside of the proposed quarry footprint.

The OEH Draft Guidelines for Threatened Biodiversity Survey and Assessment 2005 outline that a minimum of one quadrat per stratification unit (vegetation and topographic unit) should be conducted, increasing this rate to 2 quadrats for areas of 2 – 50 hectares. Based on the presence of four EECs within the site, it is considered that the single quadrat conducted for the assessment is not adequate. A quadrat was not conducted within the vegetation community to be directly impacted by the proposed development. I

The flora and fauna assessment identifies that meandering transects were undertaken during the field survey. The flora and fauna assessment does not provide a map detailing the location of these transects, as a result it is not possible to determine whether the extent and locations of the meandering transects are in accordance with the OEH Draft Guidelines for Threatened Biodiversity Survey and Assessment 2005. It is recommended that further detail is required in order to determine whether the survey methodology met the requirements of the relevant guideline.

4.10.2 SEPP 44 Assessment of Potential Koala Habitat

The flora and fauna assessment outlines that 44 randomly selected Koala feed trees within the proposed quarry footprint and a further 12 randomly selected Koala feed trees outside the proposed quarry footprint were surveyed as part of the flora and fauna assessment. The SEPP 44 assessment undertaken as part of the flora and fauna assessment concluded that the koala feed trees accounted for less than 15% of the canopy at the site.

A key issue with the SEPP 44 assessment is the lack of information supporting the conclusion that the site is not classified as potential koala habitat. Given there is potential for the koala to occur within the site (NSW Atlas search), the presence of three types of koala feed trees within the proposed quarry footprint and the reported presence of koalas at neighbouring properties in the area, it is considered that a more detailed SEPP 44 assessment is required.

4.10.3 Assessment of Significance under Section 5A of the EP&A Act

The flora and fauna assessment does not include an assessment of significance in accordance with Section 5A of the EP&A Act. The flora and fauna assessment notes that the DGRs provided by the Department of Planning requested that the EIS take into account

the *Draft Guidelines for Threatened Species Assessment under Part 3A of the Environmental Planning and Assessment Act.*

As the proposed development is being assessed under Part 4 of the EP&A Act and the flora and fauna assessment has determined that threatened species, communities or their habitats exist on and within proximity to the proposed development, the effect of the proposed development should be determined in accordance with the Assessment of Significance described in Section 5A of the EP&A Act.

The Assessment of Significance should consider all known and potentially occurring species, populations, communities and habitats which occur within the proposed quarry footprint as well as within proximity of the proposed quarry footprint. In particular, assessment of potential indirect impacts of the proposed development on the EECs recorded within the site should be undertaken. The Assessment of Significance should be undertaken in accordance with the OEH Threatened Species Assessment Guidelines: The Assessment of Significance (August, 2007).

Following the completion of the Assessment of Significance for the proposed development, it can be determined whether a species impact statement will be required for the proposed development.

4.10.4 Ecological Offsets

The flora and fauna assessment proposes to establish a restoration area adjacent to the access road for the proposed development. The restoration area is intended to be a 'like for like' replacement of the trees which would be removed as part of the proposed development. The particular location is identified as being suitable for providing a visual screen, assisting in the capture of dust and fines and providing habitat linkage to the swamp forest in the north-east corner of the site. The trees which would be planted within the restoration area are expected to include: Grey Ironbark, Broad-leaved Apple, Pink Bloodwood, Forest Red Gum and Swamp Box. Overall the restoration area would include approximately 340 trees.

The flora and fauna assessment identifies vegetation community 3 as occurring within the proposed quarry footprint. Vegetation community 3 is described by the flora and fauna assessment as comprising of:

'open woodland dominated by Swamp Box (Lophostemon suaveolens) with occasional Broad-leaved Apple and Pink Bloodwood. Grey Ironbark and Forest Red Gum occur infrequently. The midstorey is absent and the ground layer is dominated by Setaria'.

The flora and fauna assessment notes that the community occurring within the proposed quarry footprint has been fragmented and disturbed by historical clearing, grazing and pasture improvement.

Based on review of the flora and fauna assessment and the proposed ecological restoration area, the proposed offset area does not meet the requirement to improve or maintain the ecological values of the proposed quarry footprint.

Although the proposed restoration area would contain flora species which occur within the proposed quarry footprint, the area does not provide for the consideration of the structure, function and composition of the ecological community which will be impacted by the proposed development. In addition to the flora species which occur within the proposed quarry footprint, a biodiversity offset area for the proposed development should consider the ecological community as a whole, including habitat for threatened species, the conservation status of the vegetation community and the opportunities to enhance areas of existing habitat with the same or similar values within the site.

The location of the restoration area is also a key issue. It appears that the proposed restoration area is intended to first act as a vegetation screen for the proposed access road. The proposed restoration area design is such that it is likely to be subject to significant edge effects. The location of the restoration area also has the potential to put the fauna species at risk of vehicle strike as they travel to the area or across to the lowland rainforest community on the opposite side of the proposed access road.

The Council assessment report does not discuss the adequacy of the proposed restoration area in detail but does note that approvals which may be required under the *Native Vegetation Act 2003* may require the applicant to provide for further biodiversity offsets. The recommended conditions of approval do provide a condition (condition 13) for the establishment of compensatory plantings of the open woodland community prior to clearing being undertaken. The recommended condition does provide for some important aspects of biodiversity offsetting including:

- use of locally sourced seed for plantings;
- a minimum offset ratio;
- a focus on the enhancement of the similar vegetation community located within the northeast of the site; and
- relevant land management measures for the area.

However it is recommended that the biodiversity offset package is reviewed by a suitably qualified ecologist prior to any determination of the proposed development. The biodiversity offset package should be developed in accordance with the OEH's Principles for the Use of Biodiversity Offsets in NSW.

4.11 Rehabilitation and Final Land Use

The EIS includes a Quarry Operational Management Plan prepared by Greg Alderson and Associates Pty Ltd (2010) which includes details of the proposed rehabilitation and intended final landuse for the quarry. A Rehabilitation Plan is presented as Figure 8 of the Operational Management Plan.

Rehabilitation will be undertaken progressively at the completion of each cell and will comprise the following:

- benching of final faces;
- spreading overburden and topsoil across the quarry floor and faces; and
- re-planting with a mix of local species.

The intended final land use is to return the site to grazing. This appears justified as the site is currently used for grazing and is consistent with the current strategic land use objectives of the area.

Council has recommended a condition requiring rehabilitation to occur in accordance with the approved Site Rehabilitation Management Plan, however, no such plan has been presented in the EIS and there is no condition requiring such a plan be prepared. We recommend the condition be modified to refer to the Rehabilitation Plan presented in the EIS. We also recommend a condition requiring progressive rehabilitation.

4.12 Visual

A specialist visual impact assessment has not been completed as part of the EIS, however a general assessment of the visual landscape and required management controls has been completed by Greg Alderson and Associates Pty Ltd. The assessment concludes that the visual exposure of the site is limited due to topography and existing vegetation provides reasonable screening. Additional controls are recommended, including earth bunds and tree planting.

Given the elevation of the site compared to surrounding land and the design of the quarry within a pit, the conclusions and recommendations of the visual assessment appear reasonable.

Council has recommended condition 12 requiring vegetation screening between the development and any public place. As nearest private residences represent a more sensitive receiver than public places, it is recommended that this condition be amended to require vegetation screening between the development and nearest private residences with views of the site, or public place.

4.13 Socio Economic

The proposed development represents an important source of good quality construction materials within the region and would provide economic benefits to the local community through employment, capital expenditure and ready access to a supply of aggregate.

The impacts of the proposed development on the local community include traffic impacts and amenity impacts associated with noise, dust and visual amenity. The applicant would be required to make a Section 94 contribution to Council in relation to haulage impacts on local roads, however this contribution would not account for the broader traffic and amenity impacts of the proposed development. In particular, the implications of the proposed development in relation to Edenville Road (Cedar Point) Bridge, as discussed in **Section 4.4**, should be considered further and an appropriate contributions mechanism defined.

4.14 Justification for the Proposal

While it is acknowledged that the resource has been identified as being regionally significant, we consider that the need for the proposed development has not been well justified. The EIS provides a list of other quarries within the region and identifies that the proposed development may reduce haulage distances for some locations. However, the EIS does not undertake a review of the existing or future demand and supply within the proposed development's service area in order to demonstrate a need for the proposed development.

5.0 Conclusion

Review of Council's assessment report (refer to **Section 3.0**) and detailed consideration of the information provided in the EIS and associated documents, has determined that there are a number of issues that have not been adequately assessed or require further clarification in relation to the development application for the Cedar Point Quarry (refer to **Section 4.0**). In summary, it is recommended that the following matters require further consideration:

1. Confirmation of proposed development details, including the total resource to be extracted, production rate, quarry design and staging, in light of the assessment to date and outcomes of the further assessment outlined below.

2. Further noise assessment, by a qualified noise specialist, in accordance with relevant guidelines, to provide adequate certainty in relation to the predicted affects on private residences, confidence in relation to the likely success of proposed noise attenuation and mitigation measures, and a sound basis for compliance monitoring if the proposed development is approved.

3. Additional air quality assessment, including predictive modelling by an appropriately qualified air quality specialist, in accordance with relevant guidelines.

4. Provision of further detail in relation to the assessment conducted in relation to the proposed blast design, and confirmation of the quarry and blast design that ensures that relevant criteria can be met at each of the nearest surrounding private residences. Confirmation of the proposed approach to avoiding safety hazard from blast flyrock.

5. Resolution of the trigger for, and funding of, the upgrade or replacement of Edenville Road (Cedar Point) Bridge. Further traffic assessment in relation to Council's proposed reduction in production until such time the bridge is upgraded or replaced, and confirmation of the road upgrades that are required at such a reduced level of traffic, if this approach is adopted. Clarification of heavy vehicle haulage contributions.

6. Further assessment of the need for, and nature of, any proposed off-site water discharge, including further clarity on location, volume, impacts and proposed controls for such discharge.

7. Further consultation with relevant Aboriginal stakeholders in accordance with the OEH (2010) Aboriginal Cultural Heritage Consultation Requirements for Applicants, and assessment of cultural significance of the site.

8. Assessment of non-Aboriginal heritage of the site.

9. Clarification of the detail of ecology survey methodology, further assessment of potential koala habitat, and completion of 'tests of significance' in accordance with Section 5A of the Environmental Planning and Assessment Act. Review of the biodiversity offset package and confirmation that it meets the relevant OEH principles for ecological offsets.

10. Further project justification in terms of existing and future demand and supply for quarry products.

In addition, there are a number of other matters outlined in **Section 4.0** of this report that do not require further studies but are recommended for clarification or revision to Council's assessment report and proposed development consent conditions.

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