Department of Industry

OUT19/5046

Lauren Evans
Senior Planning Officer
Resource Assessments
NSW Department of Planning and Environment

Lauren.Evans@planning.nsw.gov.au

Dear Ms Evans

Marulan Quarry (SSD-9750)
Comment on the Secretary's Environmental Assessment Requirements (SEARs)

I refer to your email of 12 April 2019 to the Department of Industry (DoI) in respect to the above matter.

The following advice for you to consider is from relevant branches of DoI Lands & Water and Department of Primary Industries.

The SEARs should include:

DoI -– Water and Natural Resources Access Regulator

- The identification of an adequate and secure water supply for the life of the project. This includes confirmation that water can be sourced from an appropriately authorised and reliable supply. This is also to include an assessment of the current market depth where water entitlement is required to be purchased.
- A detailed and consolidated site water balance.
- Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.
- Proposed surface and groundwater monitoring activities and methodologies.
- Consideration of relevant legislation, policies and guidelines, including the NSW Aquifer Interference Policy (2012), the Guidelines for Controlled Activities on Waterfront Land (2018) and the relevant Water Sharing Plans (available at https://www.industry.nsw.gov.au/water).

DPI – Agriculture

- Assessment of impacts to agricultural resources and land including surrounding agricultural landuses and industries, important agricultural land, land capability and agricultural productivity. This would include demonstration that all significant impacts on current and potential agricultural developments and resources can be reasonably avoided or adequately mitigated.
- Detail that the quarry is consistent with strategic plans and zone requirements.

- Complete a Land Use Conflict Risk Assessment including:
    - Identification of potential land use conflict, in particular relating to separation distances and management practices to minimise dust, noise and visual impacts from sensitive receptors.
    - Consultation and negotiation with owners/managers of affected adjoining agricultural operations.
- Include a biosecurity (pests, weeds and livestock disease) risk assessment outlining the likely plant, animal and community risks.
- A biosecurity response plan to manage identified weed/pest animal risks.

Attachment A provides the relevant guidelines for assessment.

DPI – Fisheries

The project should be designed to:

- Protect vegetated riparian buffer zone and water quality of adjacent waterways.
- Protect fish passage through design of fish friendly waterway crossing over key fish habitat (if proposed).

The EIS should provide a clear assessment of the:

- Status of local waterway and riparian buffer zones.
- The impact of surface water flows on the quality of adjacent waterways.
- Effectiveness of proposed surface water treatment measures and erosion and sediment control treatment measures.

The mine site should be rehabilitated and revegetated following completion of the mining activity.

Any further referrals to Department of Industry can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

Yours sincerely

Liz Rogers
Manager, Assessments
Lands and Water – Strategic Relations
1 May 2019

ATTACHMENT A

Marulan Quarry (SSD-9750)
SEARs

DPI Agriculture

Guidelines for assessment:

- Agriculture Issues for Extractive Industry Development
  - https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0005/367763/Agriculture-issues-for-extractive-industry-development.pdf

- Land Use Conflict Risk Assessment Guide
  - https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0018/412551/Land-use-conflict-risk-assessment-LUCRA-guide.pdf

END ATTACHMENT A

30 April 2019

Lauren Evans
Senior Planning Officer – Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Emailed: lauren.evans@planning.nsw.gov.au

Your Reference: SSD-9750
Our Reference: DOC19/332361

Dear Ms Evans,

Re: Request for Secretary's Environmental Assessment Requirements
Project – SSD-9750

Thank you for the opportunity to provide advice on the Secretary's Environmental Assessment Requirements (SSD-9750) for the Marulan Quarry proposal. This is a response from NSW Department of Planning & Environment – Division of Resources & Geoscience (the Division).

The building and construction industries in NSW require the ongoing replacement of supplies as current sources are exhausted. The continued sustainable development of existing and new quarries will facilitate the ongoing supply of construction materials to support affordable housing and infrastructure development for the growth of NSW. The resource in the subject area represents an important source of hard rock aggregate for the Sydney and regional markets.

It is in the best interests of both the proponent and the community to fully assess the resources which are to be extracted. This means that a thorough geological assessment should be undertaken to determine the nature, quality and extent of the resource. Failure to undertake such an assessment could lead to operational problems and possibly even failure of the proposal.

Ignimbrite is not a prescribed mineral under the *Mining Act 1992*. Therefore, the Division has no statutory role in authorising or regulating the extraction of this commodity, apart from its role under the *Work Health and Safety Act 2011* and associated regulations and the *Work Health and Safety (Mine and Petroleum Sites) Act 2013* and associated regulations, for ensuring the safe operation of mines and quarries. However, the Division is the principal government authority responsible for assessing the State's resources of construction materials and for advising State and local government on their planning and management.

All environmental reports (EIS or similar) accompanying Development Applications for extractive industry lodged under the *Environmental Planning & Assessment Act 1979* should include a resource assessment **(as detailed in Attachment A)** which:

- **Documents the size and quality of the resource and demonstrates that both have been adequately assessed; and**

- **Documents the methods used to assess the resource and its suitability for the intended applications.**

The above information should be summarised in the EIS, with full documentation appended. If deemed commercial-in-confidence, the resource assessment summary included in the EIS should commit to providing the Division with full resource assessment documentation separately. Applications to modify, expand, extend or intensify an existing consent that has already been adequately reported using the above protocol in publicly available documents, may restrict detailed documentation to the additional resources to be used, if accompanied by a summary of past resource assessments and of past production.

The Division collects data on the quantity of construction materials produced annually throughout the State. Forms are sent to all operating quarries at the end of each financial year for this purpose. The statistical data collected is of great value to Government and industry in planning and resource management, particularly as a basis for analysing trends in production and for estimating future demand for particular commodities or in particular regions. Production data may be published in aggregated form, however production data for individual operations is kept strictly confidential.

In order to assist in the collection of construction material production data, the proponent should be required to provide annual production data for the subject site to the NSW Division of Resources and Geoscience as a condition of any new or amended development consent.

During the preparation of the EIS, The Division recommends that the proponent consult NSW Department of Planning & Environment's *'EIS Guideline - Extractive Industries – Quarries'*. This guideline is available from:

http://www.planning.nsw.gov.au/Assess-and-Regulate/Development-Assessment/~/media/4A89C0947A8C4D70A983F8EE1D7B9790.ashx

The Division would appreciate the opportunity for early consultation in relation to the proposed location of any biodiversity offset areas (both on and off site) or any supplementary biodiversity measures to ensure there is no consequent reduction in access to prospective land for mineral exploration, or potential for sterilisation of mineral or extractive resources.

Queries regarding the above information should be directed to the Division of Resources & Geoscience - Land Use team at landuse.minerals@geoscience.nsw.gov.au.

Yours sincerely

Steven Palmer
A/Manager - Land Use

Encl. Attachments "A"

ATTACHMENT A

NSW Department of Planning & Environment
DIVISION OF RESOURCES & GEOSCIENCE

ENVIRONMENTAL and WORK HEALTH & SAFETY ASSESSMENT REQUIREMENTS FOR CONSTRUCTION MATERIAL QUARRY PROPOSALS

It is in the best interests of both the proponent and the community to fully assess the resources which are to be extracted. This means that a thorough geological assessment should be undertaken to determine the nature, quality and extent of the resource. Failure to undertake such an assessment could lead to operational problems and possibly even failure of the proposal.

The following issues need to be addressed when preparing an environmental assessment (EA) or environmental impact statement (EIS) for a proposed construction materials (extractive materials) quarry:

Resource Assessment

1. A summary of the regional and local geology including information on the stratigraphic unit or units within which the resource is located.

2. The amount of material to be extracted and the method or methods used to determine the size of the resource (e.g. drilling, trenching, geophysical methods). Plans and cross-sections summarising this data, at a standard scale, showing location of drillholes and/or trenches, and the area proposed for extraction, should be included in the EA or EIS. Relevant supporting documentation such as drill logs should be included or appended. Major resource proposals should be subject to extensive drilling programs to identify the nature and extent of the resource.

3. Characteristics of the material or materials to be produced:
   a) For structural clay/shale extraction proposals, ceramic properties such as plasticity, drying characteristics (e.g. dry green strength, linear drying shrinkage), and firing characteristics (e.g. shrinkage, water absorption, fired colour) should be described.
   b) For sand extraction proposals, properties such as composition, grainsize, grading, clay content and contaminants should be indicated. The inclusion of indicative grading curves for all anticipated products as well as the overall deposit is recommended.
   c) For hard rock aggregate proposals, information should be provided on properties such as grainsize and mineralogy, nature and extent of weathering or alteration, and amount and type of deleterious minerals, if any.
   d) For other proposals, properties relevant to the range of intended uses for the particular material should be indicated.

Details of tests carried out to determine the characteristics of the material should be included or appended. Such tests should be undertaken by NATA registered testing laboratories.

4. An assessment of the quality of the material and its suitability for the anticipated range of applications should be given.

5. The amount of material anticipated to be produced annually should be indicated. If the proposal includes a staged extraction sequence, details of the staging sequence needs to be provided. The intended life of the operation should be indicated.

6. If the proposal is an extension to an existing operation, details of history and past production should be provided.

7. An assessment of alternative sources to the proposal and the availability of these sources. The impact of not proceeding with the proposal should be addressed.

8. Justification for the proposal in terms of the local and, if appropriate, the regional context.

9. Information on the location and size of markets to be supplied from the site.

10. Route(s) used to transport quarry products to market.

11. Disposal of waste products and the location and size of stockpiles.

12. Assessment of noise, vibration, dust and visual impacts, and proposed measures to minimise these impacts.

13. Proposed rehabilitation procedures during, and after completion of, extraction operations, and proposed final use of site.

14. Assessment of the ecological sustainability of the proposal.

Health and Safety Issues

In relation to the health and safety of mining and quarrying operations, the following must be addressed:

1. All mining operations are to comply with the following legislation:
    a. *Work Health and Safety Act 2011*
    b. *Work Health and Safety Regulation 2017*
    c. *Work Health and Safety (Mine and Petroleum Sites) Act 2013*
    d. *Work Health and Safety (Mine and Petroleum Sites) Regulation 2014*
    e. *Explosives Act 2003*
    f. *Explosives Regulation 2013*.

2 The mine holder must appoint a mine operator and notify the Department in writing as required by clause 7 of the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* before commencing any mining operations.

3. Other duties and notification and reporting requirements exist under the WHS laws and duty holders must ensure they understand and comply with these requirements.

Mineral Ownership

The *Mining Act 1992* applies to those commodities prescribed by the regulations of the Act (Schedule 2, *Mining Regulation 2016*). Most construction materials are not prescribed minerals under the *Mining Act 1992*. In general terms, this means these materials are owned by the Crown where they occur on Crown land and by the landowner in the case of freehold land. A Mining Title is not required for their extraction although a Crown Lands licence is required where they occur on Crown land.

Construction materials such as s*and (other than marine aggregate), loam, river gravel, and coarse aggregate materials such as basalt, sandstone, and granite* are not prescribed minerals under the *Mining Act 1992*. Therefore, the Division has no statutory responsibility for authorising or regulating the extraction of these commodities, apart from its role under the WHS laws with respect to the safe operation of mines and quarries. However, the Division is the principal government authority responsible for assessing the State's resources of construction materials and for advising State and local government on their planning and management.

Some commodities, notably *structural clay (i.e. clay for brick, tile and pipe manufacture), dimension stone (except for sandstone), quartzite, kaolin, limestone and marine aggregate* are prescribed minerals under the *Mining Act 1992*. Minerals which are prescribed as minerals under the terms of the Mining Act may, in some cases belong either to the Crown or to an individual, depending on a number of factors including the date on which the mineral was proclaimed and the date of alienation of the land.

The proponent needs to determine whether the material is privately owned or Crown mineral (publicly owned). If it is privately owned, then either a mining lease or mining (mineral owner) lease would be required. If it is a Crown mineral, an application for a mining lease will have to be lodged.

If you are unsure whether a mining title is required for your proposal you should contact NSW Department of Planning & Environment, Division of Resources & Geoscience.

NSW Planning and Environment

GPO Box 39
Sydney NSW 2001

Attention: Lauren Evans

Notice Number	1578799
Date	29-Apr-2019

RE: SSD 9750 - Proposed Quarry off Winfarthing Road, Marulan

I refer to your request for the Environment Protection Authority's ("EPA") requirements for the environmental assessment ("EIS") in regard to the above proposal received by the EPA on 12 April 2019.

The EPA has considered the details of the proposal as provided by Department of Planning & Environment and has identified the information it requires to issue its general terms of approval in Attachment A. In summary, the EPA's key information requirements for the proposal include an adequate assessment of:

1. Noise and vibration impacts
2. Air quality impacts
3. Water quality impacts
4. Waste management
5. Mitigation measures for the above environmental issues

In carrying out the assessment, the proponent should refer to the relevant guidelines as listed in Attachment B and any relevant industry codes of practice and best practice management guidelines.

Please note that this response does not cover biodiversity or Aboriginal cultural heritage issues, which are the responsibility of the Office of Environment and Heritage.

The Proponent should be made aware that any commitments made in the EA may be formalised as approval conditions and may also be placed as formal licence conditions.

The Proponent should be made aware that, consistent with provisions under Part 9.4 of the *Protection of the Environment Operations Act 1997* ("the Act") the EPA may require the provision of a financial assurance and/or assurances. The amount and form of the assurance(s) would be determined by the EPA and required as a condition of an Environment Protection Licence ("EPL").

In addition, as a requirement of an EPL, the EPA will require the Proponent to prepare, test and implement a Pollution Incident Response Management Plan and/or Plans in accordance with Section 153A of the Act.

Yours sincerely

.....

Janine Goodwin

Unit Head

South East - Queanbeyan

(by Delegation)

ATTACHMENT A: EIS REQUIREMENTS FOR

SSD 9750 - Proposed Quarry off Winfarthing Road, Marulan

How to use these requirements

The EPA requirements have been structured in accordance with the DIPNR EIS Guidelines, as follows. It is suggested that the EIS follow the same structure:

A. Executive summary

B. The proposal

C. The location

D. Identification and prioritisation of issues

E. The environmental issues

F. List of approvals and licences

G. Compilation of mitigation measures

H. Justification for the proposal

A Executive summary

The executive summary should include a brief discussion of the extent to which the proposal achieves identified environmental outcomes.

B The proposal

1. Objectives of the proposal

- The objectives of the proposal should be clearly stated and refer to:
  a) the size and type of the operation, the nature of the processes and the products, by-products and wastes produced
  b) a life cycle approach to the production, use or disposal of products
  c) the anticipated level of performance in meeting required environmental standards and cleaner production principles
  d) the staging and timing of the proposal and any plans for future expansion
  e) the proposal's relationship to any other industry or facility.

2. Description of the proposal

General

- Outline the production process including:
  a) the environmental "mass balance" for the process – quantify in-flow and out-flow of materials, any points of discharge to the environment and their respective destinations (sewer, stormwater, atmosphere, recycling, landfill etc)
  b) any life-cycle strategies for the products.
- Outline cleaner production actions, including:
  a) measures to minimise waste (typically through addressing source reduction)
  b) proposals for use or recycling of by-products
  c) proposed disposal methods for solid and liquid waste
  d) air management systems including all potential sources of air emissions, proposals to re-use or treat emissions, emission levels relative to relevant standards in regulations, discharge points
  e) water management system including all potential sources of water pollution, proposals for re-use, treatment etc, emission levels of any wastewater discharged, discharge points, summary of options explored to avoid a discharge, reduce its frequency or reduce its impacts, and rationale for selection of option to discharge.
  f) soil contamination treatment and prevention systems.

- Outline construction works including:
  a) actions to address any existing soil contamination
  b) any earthworks or site clearing; re-use and disposal of cleared material (including use of spoil on-site)
  c) construction timetable and staging; hours of construction; proposed construction methods
  d) environment protection measures, including noise mitigation measures, dust control measures and erosion and sediment control measures.
- Include a site diagram showing the site layout and location of environmental controls.

Air

- Identify all sources or potential sources of air emissions from the development.
  Note: emissions can be classed as either:
  - *point (e.g. emissions from stack or vent) or*
  - *fugitive (from wind erosion, leakages or spillages, associated with loading or unloading, conveyors, storage facilities, plant and yard operation, vehicle movements (dust from road, exhausts, loss from load), land clearing and construction works).*
- Provide details of the project that are essential for predicting and assessing air impacts including:
  a) the quantities and physio-chemical parameters (e.g. concentration, moisture content, bulk density, particle sizes etc) of materials to be used, transported, produced or stored
  b) an outline of procedures for handling, transport, production and storage
  c) the management of solid, liquid and gaseous waste streams with potential to generate emissions to air.

Noise and vibration

- Identify all noise sources or potential sources from the development (including both construction and operation phases). Detail all potentially noisy activities including ancillary activities such as transport of goods and raw materials.
- Specify the times of operation for all phases of the development and for all noise producing activities.
- For projects with a significant potential traffic noise impact provide details of road alignment (include gradients, road surface, topography, bridges, culverts etc), and land use along the proposed road and measurement locations – diagrams should be to a scale sufficient to delineate individual residential blocks.

Water

- Provide details of the project that are essential for predicting and assessing impacts to waters including:
  a) the quantity and physio-chemical properties of all potential water pollutants and the risks they pose to the environment and human health, including the risks they pose to Water Quality Objectives in the ambient waters (as defined on http://www.environment.nsw.gov.au/ieo/index.htm, using technical

criteria derived from *the Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, ANZECC 2000)

b) the management of discharges with potential for water impacts

c) drainage works and associated infrastructure; land-forming and excavations; working capacity of structures; and water resource requirements of the proposal.

- Outline site layout, demonstrating efforts to avoid proximity to water resources (especially for activities with significant potential impacts e.g. effluent ponds) and showing potential areas of modification of contours, drainage etc.
- Outline how total water cycle considerations are to be addressed showing total water balances for the development (with the objective of minimising demands and impacts on water resources). Include water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options.

Waste and chemicals

Provide details of the quantity and type of both liquid waste and non-liquid waste generated, handled, processed or disposed of at the premises. Waste must be classified according to the EPA's *Waste Classification Guidelines 2014 (as amended from time to time)*

- Provide details of liquid waste and non-liquid waste management at the facility, including:

  a) the transportation, assessment and handling of waste arriving at or generated at the site

  b) any stockpiling of wastes or recovered materials at the site

  c) any waste processing related to the facility, including reuse, recycling, reprocessing (including composting) or treatment both on- and off-site

  d) the method for disposing of all wastes or recovered materials at the facility

  e) the emissions arising from the handling, storage, processing and reprocessing of waste at the facility

  f) the proposed controls for managing the environmental impacts of these activities.

- Provide details of spoil disposal with particular attention to:

  a) the quantity of spoil material likely to be generated

  b) proposed strategies for the handling, stockpiling, reuse/recycling and disposal of spoil

  c) the need to maximise reuse of spoil material in the construction industry

  d) identification of the history of spoil material and whether there is any likelihood of contaminated material, and if so, measures for the management of any contaminated material

  e) designation of transportation routes for transport of spoil.

- Provide details of procedures for the assessment, handling, storage, transport and disposal of all hazardous and dangerous materials used, stored, processed or disposed of at the site, in addition to the requirements for liquid and non-liquid wastes.
- Provide details of the type and quantity of any chemical substances to be used or stored and describe arrangements for their safe use and storage.

- Reference should be made to the guidelines: EPA's *Waste Classification Guidelines 2014 (as amended from time to time)*

Ecologically Sustainable Development - ESD

- Demonstrate that the planning process and any subsequent development incorporates objectives and mechanisms for achieving ESD, including:
  a) an assessment of a range of options available for use of the resource, including the benefits of each option to future generations

  proper valuation and pricing of environmental resources

  b) identification of who will bear the environmental costs of the proposal.

3. Rehabilitation

- Outline considerations of site maintenance, and proposed plans for the final condition of the site (ensuring its suitability for future uses).

4. Consideration of alternatives and justification for the proposal

- Consider the environmental consequences of adopting alternatives, including alternative:
  a) sites and site layouts
  b) access modes and routes
  c) materials handling and production processes
  d) waste and water management
  e) impact mitigation measures
  f) energy sources
- Selection of the preferred option should be justified in terms of:
  a) ability to satisfy the objectives of the proposal
  b) relative environmental and other costs of each alternative
  c) acceptability of environmental impacts and contribution to identified environmental objectives
  d) acceptability of any environmental risks or uncertainties
  e) reliability of proposed environmental impact mitigation measures
  f) efficient use (including maximising re-use) of land, raw materials, energy and other resources.

C The location

1. General

- Provide an overview of the affected environment to place the proposal in its local and regional environmental context including:
  a) meteorological data (e.g. rainfall, temperature and evaporation, wind speed and direction)
  b) topography (landform element, slope type, gradient and length)
  c) surrounding land uses (potential synergies and conflicts)
  d) geomorphology (rates of landform change and current erosion and deposition processes)
  e) soil types and properties (including erodibility; engineering and structural properties; dispersibility; permeability; presence of acid sulfate soils and potential acid sulfate soils)
  f) ecological information (water system habitat, vegetation, fauna)
  g) availability of services and the accessibility of the site for passenger and freight transport.

2. Air

- Describe the topography and surrounding land uses. Provide details of the exact locations of dwellings, schools and hospitals. Where appropriate provide a perspective view of the study area such as the terrain file used in dispersion models.
- Describe surrounding buildings that may effect plume dispersion.
- Provide and analyse site representative data on following meteorological parameters:
  a) temperature and humidity
  b) rainfall, evaporation and cloud cover
  c) wind speed and direction
  d) atmospheric stability class
  e) mixing height (the height that emissions will be ultimately mixed in the atmosphere)
  f) katabatic air drainage
  g) air re-circulation.

3. Noise and vibration

- Identify any noise sensitive locations likely to be affected by activities at the site, such as residential properties, schools, churches, and hospitals. Typically the location of any noise sensitive locations in relation to the site should be included on a map of the locality.
- Identify the land use zoning of the site and the immediate vicinity and the potentially affected areas.

4. Water

- Describe the catchment including proximity of the development to any waterways and provide an assessment of their sensitivity/significance from a public health, ecological and/or economic perspective. The Water Quality and River Flow Objectives on the website: http://www.environment.nsw.gov.au/ieo/index.htm should be used to identify the agreed environmental values and human uses for any affected waterways. This will help with the description of the local and regional area.

5. Soil Contamination Issues

- Provide details of site history – if earthworks are proposed, this needs to be considered with regard to possible soil contamination, for example if the site was previously a landfill site or if irrigation of effluent has occurred.

D Identification and prioritisation of issues / scoping of impact assessment

- Provide an overview of the methodology used to identify and prioritise issues. The methodology should take into account:
  a) relevant NSW government guidelines
  b) industry guidelines
  c) EISs for similar projects
  d) relevant research and reference material
  e) relevant preliminary studies or reports for the proposal
  f) consultation with stakeholders.
- Provide a summary of the outcomes of the process including:
  a) all issues identified including local, regional and global impacts (e.g. increased/ decreased greenhouse emissions)
  b) key issues which will require a full analysis (including comprehensive baseline assessment)
  c) issues not needing full analysis though they may be addressed in the mitigation strategy
  d) justification for the level of analysis proposed (the capacity of the proposal to give rise to high concentrations of pollution compared with the ambient environment or environmental outcomes is an important factor in setting the level of assessment).

E The environmental issues

1. General

- The potential impacts identified in the scoping study need to be assessed to determine their significance, particularly in terms of achieving environmental outcomes, and minimising environmental pollution.
- Identify gaps in information and data relevant to significant impacts of the proposal and any actions proposed to fill those information gaps so as to enable development of appropriate management and mitigation measures. This is in accordance with ESD requirements.

  Note: The level of detail should match the level of importance of the issue in decision making which is dependent on the environmental risk.

Describe baseline conditions

- Provide a description of existing environmental conditions for any potential impacts.

Assess impacts

- For any potential impacts relevant for the assessment of the proposal provide a detailed analysis of the impacts of the proposal on the environment including the cumulative impact of the proposal on the receiving environment especially where there are sensitive receivers.
- Describe the methodology used and assumptions made in undertaking this analysis (including any modelling or monitoring undertaken) and indicate the level of confidence in the predicted outcomes and the resilience of the environment to cope with the predicted impacts.
- The analysis should also make linkages between different areas of assessment where necessary to enable a full assessment of environmental impacts e.g. assessment of impacts on air quality will often need to draw on the analysis of traffic, health, social, soil and/or ecological systems impacts; etc.
- The assessment needs to consider impacts at all phases of the project cycle including: exploration (if relevant or significant), construction, routine operation, start-up operations, upset operations and decommissioning if relevant.
- The level of assessment should be commensurate with the risk to the environment.

Describe management and mitigation measures

- Describe any mitigation measures and management options proposed to prevent, control, abate or mitigate identified environmental impacts associated with the proposal and to reduce risks to human health and prevent the degradation of the environment. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.
- Proponents are expected to implement a 'reasonable level of performance' to minimise environmental impacts. The proponent must indicate how the proposal meets reasonable levels of performance. For example, reference technology based criteria if available, or identify good practice for this type of activity or development. A 'reasonable level of performance' involves adopting and implementing technology and management practices to achieve certain pollutant emissions levels in economically viable operations. Technology-based criteria evolve gradually over time as technologies and practices change.

- Use environmental impacts as key criteria in selecting between alternative sites, designs and technologies, and to avoid options having the highest environmental impacts.
- Outline any proposed approach (such as an Environmental Management Plan) that will demonstrate how commitments made in the EIS will be implemented. Areas that should be described include:

  a. operational procedures to manage environmental impacts

  b. monitoring procedures

  c. training programs

  d. community consultation

  e. complaint mechanisms including site contacts

  f. strategies to use monitoring information to improve performance

  g. strategies to achieve acceptable environmental impacts and to respond in event of exceedences.

2. Air

Describe baseline conditions

- Provide a description of existing air quality and meteorology, using existing information and site representative ambient monitoring data. This description should include the following parameters:

  a. Dust deposition;

  b. Air particulates, PM_{10}, $PM_{2.5}$;

  c. Odour.

Assess impacts

- Identify all pollutants of concern and estimate emissions by quantity (and size for particles), source and discharge point.
- Estimate the resulting ground level concentrations of all pollutants. Where necessary (e.g. potentially significant impacts and complex terrain effects), use an appropriate dispersion model to estimate ambient pollutant concentrations. Discuss choice of model and parameters with the EPA.
- Describe the effects and significance of pollutant concentration on the environment, human health, amenity and regional ambient air quality standards or goals.
- Describe the contribution that the development will make to regional and global pollution, particularly in sensitive locations.
- For potentially odorous emissions provide the emission rates in terms of odour units (determined by techniques compatible with EPA procedures). Use sampling and analysis techniques for individual or complex odours and for point or diffuse sources, as appropriate.

  Note: With dust and odour, it may be possible to use data from existing similar activities to generate emission rates.

- Reference should be made to:

- *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA, 2016);
- *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW* (DEC, 2007);
- *Technical Framework: Assessment and Management of Odour from Stationary Sources in NSW* (DEC, 2006);
- *Technical Notes: Assessment and Management of Odour from Stationary Sources in NSW (DEC, 2006).*

Describe management and mitigation measures

- Outline specifications of pollution control equipment (including manufacturer's performance guarantees where available) and management protocols for both point and fugitive emissions. Where possible, this should include cleaner production processes.

3. Noise and vibration

Describe baseline conditions

- Determine the existing background (L_{A90}) and ambient (LAeq) noise levels, as relevant, in accordance with the *NSW Noise Policy for Industry (2017)*.
- Determine the existing road traffic noise levels in accordance with the *NSW Road Noise Policy*, where road traffic noise impacts may occur.
- The noise impact assessment report should provide details of all monitoring of existing ambient noise levels including:
  a) details of equipment used for the measurements;
  b) a brief description of where the equipment was positioned;
  c) a statement justifying the choice of monitoring site(s), including the procedure used to choose the site(s), having regards to Fact Sheets A and B of the *NSW Noise Policy for Industry*;
  d) details of the exact location of the monitoring site and a description of land uses in surrounding areas;
  e) a description of the dominant and background noise sources at the site;
  f) day, evening and night assessment background levels for each day of the monitoring period;
  g) the final Rating Background Level (RBL) value;
  h) graphs of the measured noise levels for each day should be provided;
  i) a record of periods of affected data (due to adverse weather and extraneous noise), methods used to exclude invalid data and a statement indicating the need for any re-monitoring;
  j) determination of LAeq noise levels from existing industry.

Assess impacts

- Determine the project noise trigger levels for the site. For each identified potentially affected receiver, this should include:
  a) determination of the project intrusive noise level for each identified potentially affected receiver;
  b) selection and justification of the appropriate amenity category for each identified potentially affected receiver;
  c) determination of the project amenity noise level for each receiver;
  d) determination of the appropriate maximum noise level event assessment (sleep disturbance) trigger level.
- Maximum noise levels during night-time period (10pm-7am) should be assessed to analyse possible affects on sleep.
- Determine expected noise level and noise character likely to be generated from noise sources during:
  a) site establishment
  b) construction
  c) operational phases
  d) transport including traffic noise generated by the proposal
  e) other services.

  Note: The noise impact assessment report should include noise source data for each source in 1/1 or 1/3 octave band frequencies including methods for references used to determine noise source levels. Noise source levels and characteristics can be sourced from direct measurement of similar activities or from literature (if full references are provided).
- Determine the noise levels likely to be received at the reasonably most affected location(s) (these may vary for different activities at each phase of the development). Potential impacts should be determined for any identified significant adverse meteorological conditions.
- The noise impact assessment report should include:
  a) a plan showing the assumed location of each noise source for each prediction scenario;
  b) a list of the number and type of noise sources used in each prediction scenario to simulate all potential significant operating conditions on the site;
  c) any assumptions made in the predictions in terms of source heights, directivity effects, shielding from topography, buildings or barriers, etc;
  d) methods used to predict noise impacts including identification and justification of any noise models used;
  e) the weather conditions considered for the noise predictions including reference to any weather data used to justify the assumed conditions;
  f) the predicted noise impacts from each noise source as well as the combined noise level for each prediction scenario under any identified significant adverse weather conditions, as well as calm conditions where appropriate;
  g) for developments where a significant level of noise impact is likely to occur, noise contours for the key prediction scenarios should be derived;

h) an assessment of the need to include modification factors as detailed in Fact Sheet C of the *NSW Noise Policy for Industry*.

- Discuss the findings from the predictive modelling and, where relevant noise criteria have not been met, recommend additional feasible and reasonable mitigation measures.
- The noise impact assessment report should include details of any mitigation proposed including the attenuation that will be achieved and the revised noise impact predictions following mitigation.
- Where relevant noise/vibration levels cannot be met after application of all feasible and reasonable mitigation measures the residual level of noise impact needs to be quantified by identifying:
  a) locations where the noise level exceeds the criteria and extent of exceedence;
  b) numbers of people (or areas) affected;
  c) times when criteria will be exceeded;
  d) likely impact on activities (speech, sleep, relaxation, listening, etc)
  e) change on ambient conditions;
  f) the result of any community consultation or negotiated agreement.
- For the assessment of existing and future traffic noise, details of data for the road should be included such as assumed traffic volume; percentage heavy vehicles by time of day; and details of the calculation process. These details should be consistent with any traffic study carried out in the EIS.
- Where blasting is intended an assessment in accordance with the *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration* (ANZECC, 1990) should be undertaken. The following details of the blast design should be included in the noise assessment:
  a) bench height, burden spacing, spacing burden ratio;
  b) blast hole diameter, inclination and spacing;
  c) type of explosive, maximum instantaneous charge, initiation, blast block size, blast frequency.

Describe management and mitigation measures

- Determine the most appropriate noise mitigation measures and expected noise reduction including both noise controls and management of impacts for both construction and operational noise. This will include selecting quiet equipment and construction methods, noise barriers or acoustic screens, location of stockpiles, temporary offices, compounds and vehicle routes, scheduling of activities, etc.
- For traffic noise impacts, provide a description of the ameliorative measures considered (if required), reasons for inclusion or exclusion, and procedures for calculation of noise levels including ameliorative measures. Also include, where necessary, a discussion of any potential problems associated with the proposed ameliorative measures, such as overshadowing effects from barriers. Appropriate ameliorative measures may include:
  a) use of alternative transportation modes, alternative routes, or other methods of avoiding the new road usage;
  b) control of traffic (eg: limiting times of access or speed limitations);
  c) resurfacing of the road using a quiet surface;
  d) use of (additional) noise barriers or bunds;

e) treatment of the façade to reduce internal noise levels buildings where the night-time criteria is a major concern;

f) more stringent limits for noise emission from vehicles (i.e. using specially designed 'quite' trucks and/or trucks to use air bag suspension;

g) driver education;

h) appropriate truck routes;

i) limit usage of exhaust brakes;

j) use of premium muffles on trucks;

k) reducing speed limits for trucks;

l) ongoing community liaison and monitoring of complaints;

m) phasing in the increased road use.

4. Water

Describe baseline conditions

- Describe existing surface and groundwater quality – an assessment needs to be undertaken for any water resource likely to be affected by the proposal and for all conditions (e.g. a wet weather sampling program is needed if runoff events may cause impacts).

  Note: Methods of sampling and analysis need to conform with an accepted standard (e.g. Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC 2004) *or be approved and analyses undertaken by accredited laboratories).*

- Provide site drainage details and surface runoff yield.
- State the ambient Water Quality and River Flow Objectives for the receiving waters. These refer to the community's agreed environmental values and human uses endorsed by the Government as goals for the ambient waters. These environmental values are published on the website: http://www.environment.nsw.gov.au/ieo/index.htm. The EIS should state the environmental values listed for the catchment and waterway type relevant to your proposal.

  NB: A consolidated and approved list of environmental values are not available for groundwater resources. Where groundwater may be affected the EIS should identify appropriate groundwater environmental values and justify the choice.

- State the indicators and associated trigger values or criteria for the identified environmental values. This information should be sourced from the ANZECC 2000 *Guidelines for Fresh and Marine Water Quality* (http://www.environment.gov.au/water/publications/quality/nwqms-guidelines-4-vol1.html) (Note that, as at 2004, the NSW Water Quality Objectives booklets and website contain technical criteria derived from the 1992 version of the ANZECC Guidelines. The Water Quality Objectives remain as Government Policy, reflecting the community's environmental values and long-term goals, but the technical criteria are replaced by the more recent ANZECC 2000 Guidelines).

NB: While specific guidelines for groundwater are not available, the ANCECC 2000 Guidelines endorse the application of the trigger values and decision trees as a tool to assess risk to environmental values in groundwater.

- State any locally specific objectives, criteria or targets, which have been endorsed by the government e.g. the Healthy Rivers Commission Inquiries or the NSW Salinity Strategy (DLWC, 2000) (http://www.environment.nsw.gov.au/salinity/government/nswstrategy.htm).
- Where site specific studies are proposed to revise the trigger values supporting the ambient Water Quality and River Flow Objectives, and the results are to be used for regulatory purposes (e.g. to assess whether a licensed discharge impacts on water quality objectives), then prior agreement from the EPA on the approach and study design must be obtained.
- Describe the state of the receiving waters and relate this to the relevant Water Quality and River Flow Objectives (i.e. are Water Quality and River Flow Objectives being achieved?). Proponents are generally only expected to source available data and information. However, proponents of large or high risk developments may be required to collect some ambient water quality / river flow / groundwater data to enable a suitable level of impact assessment. Issues to include in the description of the receiving waters could include:
  a) lake or estuary flushing characteristics;
  b) specific human uses (e.g. exact location of drinking water offtake);
  c) sensitive ecosystems or species conservation values;
  d) a description of the condition of the local catchment e.g. erosion levels, soils, vegetation cover, etc;
  e) an outline of baseline groundwater information, including, but not restricted to, depth to watertable, flow direction and gradient, groundwater quality, reliance on groundwater by surrounding users and by the environment;
  f) historic river flow data where available for the catchment.

Assess impacts

- No proposal should breach clause 120 of the *Protection of the Environment Operations Act* 1997 (i.e. pollution of waters is prohibited unless undertaken in accordance with relevant regulations).
- Identify and estimate the quantity of all pollutants that may be introduced into the water cycle by source and discharge point including residual discharges after mitigation measures are implemented.
- Include a rationale, along with relevant calculations, supporting the prediction of the discharges.
- Describe the effects and significance of any pollutant loads on the receiving environment. This should include impacts of residual discharges through modelling, monitoring or both, depending on the scale of the proposal. Determine changes to hydrology (including drainage patterns, surface runoff yield, flow regimes, wetland hydrologic regimes and groundwater).
- Describe water quality impacts resulting from changes to hydrologic flow regimes (such as nutrient enrichment or turbidity resulting from changes in frequency and magnitude of stream flow).
- Identify any potential impacts on quality or quantity of groundwater describing their source.
- Identify potential impacts associated with geomorphological activities with potential to increase surface water and sediment runoff or to reduce surface runoff and sediment transport. Also consider possible impacts such as bed lowering, bank lowering, instream siltation, floodplain erosion and floodplain siltation.
- Identify impacts associated with the disturbance of acid sulfate soils and potential acid sulfate soils.

- Containment of spills and leaks shall be in accordance with EPA's guidelines section 'Bunding and Spill Management' at http://www.epa.nsw.gov.au/mao/bundingspill.htm and the most recent versions of the Australian Standards referred to in the Guidelines. Containment should be designed for no-discharge.
- The significance of the impacts listed above should be predicted. When doing this it is important to predict the ambient water quality and river flow outcomes associated with the proposal and to demonstrate whether these are acceptable in terms of achieving protection of the Water Quality and River Flow Objectives. In particular the following questions should be answered:
  a. will the proposal protect Water Quality and River Flow Objectives where they are currently achieved in the ambient waters; and
  b. will the proposal contribute towards the achievement of Water Quality and River Flow Objectives over time, where they are not currently achieved in the ambient waters.
- Consult with the EPA as soon as possible if a mixing zone is proposed (a mixing zone could exist where effluent is discharged into a receiving water body, where the quality of the water being discharged does not immediately meet water quality objectives. The mixing zone could result in dilution, assimilation and decay of the effluent to allow water quality objectives to be met further downstream, at the edge of the mixing zone). The EPA will advise the proponent under what conditions a mixing zone will and will not be acceptable, as well as the information and modelling requirements for assessment.

  Note: The assessment of water quality impacts needs to be undertaken in a total catchment management context to provide a wide perspective on development impacts, in particular cumulative impacts.

- Where a licensed discharge is proposed, provide the rationale as to why it cannot be avoided through application of a reasonable level of performance, using available technology, management practice and industry guidelines.
- Where a licensed discharge is proposed, provide the rationale as to why it represents the best environmental outcome and what measures can be taken to reduce its environmental impact.
- Reference should be made to:
  a. *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004),
  b. *Guidelines for Fresh and Marine Water Quality* (ANZECC, 2000).

Describe management and mitigation measures

- Outline stormwater management to control pollutants at the source and contain them within the site. Also describe measures for maintaining and monitoring any stormwater controls.
- Outline erosion and sediment control measures directed at minimising disturbance of land, minimising water flow through the site and filtering, trapping or detaining sediment. Also include measures to maintain and monitor controls as well as rehabilitation strategies.
- Describe waste water treatment measures that are appropriate to the type and volume of waste water and are based on a hierarchy of avoiding generation of waste water; capturing all contaminated water (including stormwater) on the site; reusing/recycling waste water; and treating any unavoidable discharge from the site to meet specified water quality requirements.
- Outline pollution control measures relating to storage of materials, possibility of accidental spills (e.g. preparation of contingency plans), appropriate disposal methods, and generation of leachate.

- Describe hydrological impact mitigation measures including:
  a) site selection (avoiding sites prone to flooding and waterlogging, actively eroding or affected by deposition);
  b) minimising runoff;
  c) minimising reductions or modifications to flow regimes;
  d) avoiding modifications to groundwater.
- Describe groundwater impact mitigation measures including:
  a) site selection;
  b) retention of native vegetation and revegetation;
  c) artificial recharge;
  d) providing surface storages with impervious linings;
  e) monitoring program.
- Describe geomorphological impact mitigation measures including:
  a) site selection;
  b) erosion and sediment controls;
  c) minimising instream works;
  d) treating existing accelerated erosion and deposition;
  e) monitoring program.
- Any proposed monitoring should be undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutants in NSW* (DEC, 2004).

5. Soils and contamination

Describe baseline conditions

- Provide any details (in addition to those provided in the location description - Section C) that are needed to describe the existing situation in terms of soil types and properties and soil contamination.

Assess impacts

- Identify any likely impacts resulting from the construction or operation of the proposal, including the likelihood of:
  a) disturbing any existing contaminated soil;
  b) contamination of soil by operation of the activity;
  c) subsidence or instability;
  d) soil erosion;
  e) disturbing acid sulfate or potential acid sulfate soils.

- Reference should be made to:
  a. *Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011);
  b. *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997* (EPA, 2015).

Describe management and mitigation measures

- Describe and assess the effectiveness or adequacy of any soil management and mitigation measures during construction and operation of the proposal including:
  a) erosion and sediment control measures;
  b) proposals for site remediation – see *Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land* (Department of Urban Affairs and Planning and Environment Protection Authority, 1998);
  c) proposals for the management of these soils – see *Acid Sulfate Soil Manual* (Acid Sulfate Soil Advisory Committee 1998) and *Acid Sulfate Soils Assessment Guidelines* (Acid Sulfate Soil Advisory Committee 1998).

6. Waste and chemicals

Describe baseline conditions

- Describe any existing waste or chemicals operations related to the proposal.

Assess impacts

- Assess the adequacy of proposed measures to minimise natural resource consumption and minimise impacts from the handling, transporting, storage, processing and reprocessing of waste and/or chemicals.
- Reference should be made to: the EPA's *Waste Classification Guidelines 2014 (as in force from time to time)*

Describe management and mitigation measures

- Outline measures to minimise the consumption of natural resources.
- Outline measures to avoid the generation of waste and promote the re-use and recycling and reprocessing of any waste.
- Outline measures to support any approved regional or industry waste plans.

7. Cumulative impacts

- Identify the extent that the receiving environment is already stressed by existing development and background levels of emissions to which this proposal will contribute.

- Assess the impact of the proposal against the long term air, noise and water quality objectives for the area or region.
- Identify infrastructure requirements flowing from the proposal (e.g. water and sewerage services, transport infrastructure upgrades).
- Assess likely impacts from such additional infrastructure and measures reasonably available to the proponent to contain such requirements or mitigate their impacts (e.g. travel demand management strategies).

F. List of approvals and licences

- Identify all approvals and licences required under environment protection legislation including details of all scheduled activities, types of ancillary activities and types of discharges (to air, land, water).

G. Compilation of mitigation measures

- Outline how the proposal and its environmental protection measures would be implemented and managed in an integrated manner so as to demonstrate that the proposal is capable of complying with statutory obligations under EPA licences or approvals (e.g. outline of an environmental management plan).
- The mitigation strategy should include the environmental management and cleaner production principles which would be followed when planning, designing, establishing and operating the proposal. It should include two sections, one setting out the program for managing the proposal and the other outlining the monitoring program with a feedback loop to the management program.

H. Justification for the Proposal

- Reasons should be included which justify undertaking the proposal in the manner proposed, having regard to the potential environmental impacts.

ATTACHMENT B: GUIDANCE MATERIAL

Title	Web address
Relevant Legislation	
Contaminated Land Management Act 1997	http://www.legislation.nsw.gov.au/#/view/act/1997/140
Environmentally Hazardous Chemicals Act 1985	http://www.legislation.nsw.gov.au/#/view/act/1985/14
Environmental Planning and Assessment Act 1979	http://www.legislation.nsw.gov.au/#/view/act/1979/203
Protection of the Environment Operations Act 1997	http://www.legislation.nsw.gov.au/#/view/act/1997/156
Water Management Act 2000	http://www.legislation.nsw.gov.au/#/view/act/2000/92
Licensing	
Guide to Licensing	https://www.epa.nsw.gov.au/licensing-and-regulation/licensing/environment-protection-licences/guide-to-licensing
Air Issues	
Air Quality	
Approved methods for modelling and assessment of air pollutants in NSW (2016)	https://www.epa.nsw.gov.au/your-environment/air/industrial-emissions/sampling-analysing-air-emissions
POEO (Clean Air) Regulation 2010	http://www.legislation.nsw.gov.au/#/view/regulation/2010/428
Noise and Vibration	
NSW Noise Policy for Industry (EPA, 2017)	http://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/noise-policy-for-industry-(2017)
Interim Construction Noise Guideline (DECC, 2009)	https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/interim-construction-noise-guideline
Assessing Vibration: a technical guideline (DEC, 2006)	https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/assessing-vibration
NSW Road Noise Policy (DECCW, 2011)	http://www.epa.nsw.gov.au/your-environment/noise/transport-noise
Human Health Risk Assessment	
Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards (enHealth, 2012)	http://www.eh.org.au/documents/item/916

Waste, Chemicals and Hazardous Materials and Radiation	
Waste	
Environmental Guidelines: Solid Waste Landfills (EPA, 2016)	https://www.epa.nsw.gov.au/your-environment/waste/waste-facilities/landfill-sites
EPA's Waste Classification Guidelines 2014	https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines
Resource recovery orders and exemptions	https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/resource-recovery-framework/current-orders-and-exemption
European Unions Waste Incineration Directive 2000	http://ec.europa.eu/environment/archives/air/stationary/wid/legislation.htm
EPA's Energy from Waste Policy Statement	https://www.epa.nsw.gov.au/your-environment/waste/waste-facilities/energy-recovery
NSW Waste Avoidance and Resource Recovery Strategy 2014-2021	https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/warr-strategy
Chemicals subject to Chemical Control Orders	
Chemical Control Orders (regulated through the EHC Act)	https://www.epa.nsw.gov.au/your-environment/chemicals/chemical-control-orders
National Protocol - Approval/Licensing of Trials of Technologies for the Treatment/Disposal of Schedule X Wastes - July 1994	Available in libraries
National Protocol for Approval/Licensing of Commercial Scale Facilities for the Treatment/Disposal of Schedule X Wastes - July 1994	Available in libraries
Water and Soils	
Acid sulphate soils	
Coastal acid sulfate soils guidance material	https://www.environment.nsw.gov.au/topics/land-and-soil/soil-degradation/acid-sulfate-soils and https://www.epa.nsw.gov.au/licensing-and-regulation/licensing/environment-protection-licences/authorised-officers/resources-and-training/acid-sulfate-soils-assess-and-manage
Acid Sulfate Soils Planning Maps	https://www.environment.nsw.gov.au/topics/land-and-soil/soil-degradation/acid-sulfate-soils
Contaminated Sites Assessment and Remediation	
Managing land contamination: Planning Guidelines – SEPP 55 Remediation of Land	https://www.epa.nsw.gov.au/your-environment/contaminated-land/managing-contaminated-land/role-of-planning-authorities
Guidelines for Consultants Reporting on Contaminated Sites (EPA, 2000)	https://www.epa.nsw.gov.au/~/media/EPA/Corporate%20Site/resources/clm/20110650consultantsglines.ashx

Guidelines for the NSW Site Auditor Scheme - 3rd edition (EPA, 2017)	https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/contaminated-land/17p0269-guidelines-for-the-nsw-site-auditor-scheme-third-edition.pdf
Sampling Design Guidelines (EPA, 1995)	https://www.epa.nsw.gov.au/~/media/EPA/Corporate%20Site/resources/clm/95059sampgdlne.ashx
National Environment Protection (Assessment of Site Contamination) Measure 1999 (or update)	https://www.legislation.gov.au/Details/F2013C00288
Soils – general	
Managing land and soil	https://www.environment.nsw.gov.au/topics/land-and-soil
Managing urban stormwater for the protection of soils	https://www.environment.nsw.gov.au/topics/water/water-quality/all-publications
Site Investigations for Urban Salinity (DLWC, 2002)	https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Land-and-soil/urban-salinity-site-investigations.pdf
Local Government Salinity Initiative Booklets	https://www.environment.nsw.gov.au/topics/land-and-soil/soil-degradation/salinity/type-of-salinity-and-their-prevention
Water	
Water Quality Objectives	http://www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	http://www.waterquality.gov.au/anz-guidelines/resources/previous-guidelines/anzecc-armcanz-2000
Applying Goals for Ambient Water Quality Guidance for Operations Officers - Mixing Zones	Contact the EPA on 131555
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	https://www.epa.nsw.gov.au/licensing-and-regulation/licensing/environment-protection-licences/licensing-under-poeo-act-1997/licensing-to-regulate-water-pollution/approved-methods-for-sampling-and-analysing-water-pollutants

NSW GOVERNMENT | Office of Environment & Heritage

Your reference: SEAR 9750
Our reference: DOC19/358362-3

Lauren Evans
Senior Planning Officer
320 Pitt Street
GPO Box 39
Sydney NSW 2001

Email: Lauren.evans@planning.nsw.gov.au

RE: Request for Input: Marulan Quarry, Winfarthing Road – SEAR 9750

I refer to your email requesting input to the Secretary's Environmental Assessment Requirements for the Marulan Quarry, located within the Goulburn Mulwaree Local government area (LGA).

OEH has reviewed the information provided by the applicant and recommends the inclusion of the attached requirements (**Attachment A and B**) which are based on the Standard SEARs. **Attachment C** lists various guidance materials.

If you have any further questions in relation to this matter, please feel free to contact Allison Treweek, Senior Team Leader – Planning (02) 6229 7082.

Yours Sincerely,

30.4.2019

MICHAEL SAXON
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Attachment A – Standard Environmental Assessment Requirements

Biodiversity

1. Biodiversity impacts related to the proposed development (SSD 9750) are to be assessed in accordance with the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must include information in the form detailed in the *Biodiversity Conservation Act 2016* (s6.12), *Biodiversity Conservation Regulation 2017* (s6.8) and Biodiversity Assessment Method.
2. The BDAR must document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the Biodiversity Assessment Method.
3. The BDAR must include details of the measures proposed to address the offset obligation as follows;
   - The total number and classes of biodiversity credits required to be retired for the development/project;
   - The number and classes of like-for-like biodiversity credits proposed to be retired;
   - The number and classes of biodiversity credits proposed to be retired in accordance with the variation rules;
   - Any proposal to fund a biodiversity conservation action;
   - Any proposal to conduct ecological rehabilitation (if a mining project);
   - Any proposal to make a payment to the Biodiversity Conservation Fund.

If seeking approval to use the variation rules, the BDAR must contain details of the reasonable steps that have been taken to obtain requisite like-for-like biodiversity credits.

4. The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under s6.10 of the *Biodiversity Conservation Act 2016*.

Aboriginal cultural heritage

5. The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010)*, and guided by the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW, 2011) and consultation with OEH regional branch officers.

6. Consultation with Aboriginal people must be undertaken and documented in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR.
7. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.
8. The ACHAR must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the development to formulate appropriate measures to manage unforeseen impacts.
Historic heritage
9. The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall: a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996), b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), c. include a statement of heritage impact for all heritage items (including significance assessment), d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.

Water and soils
10. The EIS must map the following features relevant to water and soils including: a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map). b. Rivers, streams, wetlands, estuaries (as described in s4.2 of the Biodiversity Assessment Method). c. Wetlands as described in s4.2 of the Biodiversity Assessment Method. d. Groundwater. e. Groundwater dependent ecosystems. f. Proposed intake and discharge locations.
11. The EIS must describe background conditions for any water resource likely to be affected by the development, including: a. Existing surface and groundwater. b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations. c. Water Quality Objectives (as endorsed by the NSW Government http://www.environment.nsw.gov.au/ieo/index.htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters. d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government.
12. The EIS must assess the impacts of the development on water quality, including: a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction. b. Identification of proposed monitoring of water quality.

13. The EIS must assess the impact of the development on hydrology, including:
    a. Water balance including quantity, quality and source.
    b. Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas.
    c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems.
    d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (e.g. river benches).
    e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water.
    f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options.
    g. Identification of proposed monitoring of hydrological attributes.

Flooding

14. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:
    a. Flood prone land.
    b. Flood planning area, the area below the flood planning level.
    c. Hydraulic categorisation (floodways and flood storage areas).

15. The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 1 in 10 year, 1 in 100 year flood levels and the probable maximum flood, or an equivalent extreme event.

16. The EIS must model the effect of the proposed development (including fill) on the flood behaviour under the following scenarios:
    a. Current flood behaviour for a range of design events as identified in 11 above. This includes the 1 in 200 and 1 in 500 year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.

17. Modelling in the EIS must consider and document:
    a. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood.
    b. Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories.
    c. Relevant provisions of the NSW Floodplain Development Manual 2005.

18. The EIS must assess the impacts on the proposed development on flood behaviour, including:

a. Whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure.
b. Consistency with Council floodplain risk management plans.
c. Compatibility with the flood hazard of the land.
d. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.
e. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.
f. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.
g. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council.
h. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the SES and Council.
i. Emergency management, evacuation and access, and contingency measures for the development considering the full range or flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the SES.
j. Any impacts the development may have on the social and economic costs to the community as consequence of flooding.

Attachment B – Project specific environmental assessment requirements

Biodiversity – This site is located within a Regional Biodiversity Corridor identified with the South East and Tableland Regional Plan, and is heavily vegetated. Specific attention should be paid to the potential presence of koalas, squirrel gliders, box-gum woodland Endangered Ecological Community, *Leucochrysum albicans, Cotoneaster pomaderris & Pultenaea pedunculata.*

Aboriginal cultural heritage –

A. The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the ACHAR.

   The broader Goulburn and Marulan region contains many archaeological sites. There is a high likelihood that Aboriginal objects and cultural values exist within the area of the current project and this must be assessed.

   Subsurface testing at Gunlake, Lynwood and Peppertree quarries has demonstrated that subsurface artefacts are present in the region. These studies identified elevated, level to gently inclined landforms overlooking streams, such as hill spur crests and low hill crests as the most archaeologically sensitive landforms in the region.

   The project must also be assessed for cultural values. At Gunlake quarry cultural values were identified in association with naturally occurring springs at Chapmans Creek. Similar values could also be present in proposal area given the proximity of Narambulla Creek.

B. The ACHAR must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material

Attachment C – Guidance material

Title	Web address
Relevant legislation	
Biodiversity Conservation Act 2016	https://www.legislation.nsw.gov.au/#/view/act/2016/63/full
Coastal Management Act 2016	https://www.legislation.nsw.gov.au/#/view/act/2016/20/full
Commonwealth Environment Protection and Biodiversity Conservation Act 1999	http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
Environmental Planning and Assessment Act 1979	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
Fisheries Management Act 1994	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
Marine Parks Act 1997	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N
National Parks and Wildlife Act 1974	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
Protection of the Environment Operations Act 1997	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
Water Management Act 2000	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
Wilderness Act 1987	http://www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N
Biodiversity	
Biodiversity Assessment Method (OEH, 2017)	http://www.environment.nsw.gov.au/resources/bcact/biodiversity-assessment-method-170206.pdf
Guidance and Criteria to assist a decision maker to determine a serious and irreversible impact (OEH, 2017)	http://www.environment.nsw.gov.au/resources/bcact/guidance-decision-makers-determine-serious-irreversible-impact-170204.pdf
NSW Guide to Surveying Threatened Plant	http://www.environment.nsw.gov.au/resources/threatenedspecies/160129-threatened-plants-survey-guide.pdf
Fisheries NSW policies and guidelines	http://www.dpi.nsw.gov.au/fisheries/habitat/publications/policies,-guidelines-and-manuals/fish-habitat-conservation
List of national parks	http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
Revocation, recategorisation and road adjustment policy (OEH, 2012)	http://www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm
Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010)	http://www.environment.nsw.gov.au/protectedareas/developmntadjoiningdecc.htm
Heritage	
The Burra Charter (The Australia ICOMOS charter for places of cultural significance)	http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf

Title	Web address
Statements of Heritage Impact 2002 (HO & DUAP)	http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf
NSW Heritage Manual (DUAP) (scroll through alphabetical list to 'N')	http://www.environment.nsw.gov.au/Heritage/publications/
Aboriginal cultural heritage	
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf
Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)	http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf
Aboriginal Site Recording Form	http://www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf
Aboriginal Site Impact Recording Form	http://www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf
Aboriginal Heritage Information Management System (AHIMS) Registrar	http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
Care Agreement Application form	http://www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf
Acid sulphate soils	
Acid Sulfate Soils Planning Maps via Data.NSW	http://data.nsw.gov.au/data/
Acid Sulfate Soils Manual (Stone et al. 1998)	http://www.environment.nsw.gov.au/resources/epa/Acid-Sulfate-Manual-1998.pdf
Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004)	http://www.environment.nsw.gov.au/resources/soils/acid-sulfate-soils-laboratory-methods-guidelines.pdf This replaces Chapter 4 of the Acid Sulfate Soils Manual above.
Flooding and coastal erosion	
Reforms to coastal erosion management	http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm
Floodplain development manual	http://www.environment.nsw.gov.au/floodplains/manual.htm
Guidelines for Preparing Coastal Zone Management Plans	Guidelines for Preparing Coastal Zone Management Plans http://www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf
NSW Climate Impact Profile	http://climatechange.environment.nsw.gov.au/
Climate Change Impacts and Risk Management	Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change Adaptation
Water	
Water Quality Objectives	http://www.environment.nsw.gov.au/ieo/index.htm

Title	Web address
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf

Our ref: STH19/00051/02
Contact: Melissa Steep 4221 2771
Your ref: SSD-9750

30 April 2019

Lauren Evans
Department of Planning and Environment
Lauren.evans@planning.nsw.gov.au

STATE SIGNIFICANT DEVELOPMENT SSD-9750 – SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS - WINFARTHING ROAD, MARULAN, MARULAN QUARRY

Dear Lauren,

Roads and Maritime Services (RMS) refers to your correspondence dated 12 April 2019 regarding RMS input for the subject State Significant Development (SSD).

RMS has completed an assessment of the development, based on the information provided and focussing on the impact to the State Road Network. For this development, the key state road is the Hume Highway.

RMS notes the following:

- RMS input is requested by the Secretary under Schedule 2 of the Environmental Planning and Assessment Regulation 2000.
- The development would generate additional traffic. The impact of this traffic needs to be considered and adequately mitigated;
- The development proposes access to the Hume Highway via the existing local road connection of Winfarthing Road; and
- In general RMS does not support heavy vehicles turning right across the Hume Highway.

RMS requires the issues outlined in Attachment 1, be considered and addressed in the Environmental Assessment.

RMS welcomes further consultation during preparation of the Environmental Assessment. If you have any questions please contact Melissa Steep on 4221 2771.

Please ensure that any further email correspondence is sent to development.southern@rms.nsw.gov.au.

Yours faithfully,

Chris Millet
Manager Land Use
Southern Region

A detailed Traffic Impact Study (TIS) is required to consider the implication of the development. As a guide Table 2.1 of the RTA's Guide to Traffic Generating Developments outlines the key issues that should be considered in preparing a TIS. The TIS also needs to include, but not be limited to, the following:

- Details on road transport routes to be used to provide access to/from the site. The applicant should be advised that RMS generally does not support heavy vehicles undertaking right turn manoeuvres across the Hume Highway. Similarly, any increase in right turning light vehicles would need to be appropriately justified in terms of safety and efficiency.
- Details on existing movements along the road network and proposed additional movements to and from the development site (including traffic volumes based on survey), including types of vehicles, peak hour movements and maximum daily movements (heavy and light vehicles).
- Consideration of the impacts to the State road network and identification of appropriate measures to mitigate the impact.
    - In this regard, intersection traffic modelling would be required for the intersection of the Hume Highway and Winfarthing Road, should an increase in turning movements be proposed.

      Notes:

        - The modelling would need to consider peak periods (AM, PM & weekend) with and without the development.
        - The modelling would need to consider a base case scenario (to demonstrate calibration) and a future scenario (10 years).
        - The base models must be calibrated with on site observations in the AM and PM peak. This can be done by measuring existing queue lengths and delays.
        - Electronic copies of modelling files needs to be provided to RMS for review.
    - The existing intersection layout needs to be assessed with consideration to compliance with AUSTROADS requirements, specifically the warrants for deceleration and acceleration lanes.
- Strategic designs for all identified road upgrades need to be prepared to clarify the scope of works, demonstrate the works can be constructed within the road reserve and allow the consent authority to consider any environmental impacts of the works as part of their Part 4 assessment. These impacts include traffic and road safety impacts as well as other impacts such noise, flora and fauna, heritage and impact to community.

Lauren Evans

From: Girja Sharma <Girja.Sharma@waternsw.com.au>
Sent: Wednesday, 1 May 2019 4:52 PM
To: Lauren Evans
Subject: RE:- Marulan Quarry - Request for SEARs advice (SSD-9750)

Hi Lauren,

Apology for delay.

I refer to your email of 12 April 2019 requesting WaterNSW's input into the Secretary's Environmental Assessment Requirements (SEARs) for the proposed quarry. WaterNSW appreciates the opportunity and offers the following comments for your consideration.

The subject land is located in the declared Sydney Catchment Area. A legislative function of Water NSW is to protect and enhance the quality and quantity of water in this catchment.

Based on the information in the PEA, the SEARs should also include the following specific issues:

- **Water** – including:
  - baseline monitoring data of Narrambulla Creek, both upstream and downstream of the site
  - a detailed assessment of the potential impacts of the development (including flooding, excavation, wastewater, stormwater and erosion) on surface water and groundwater resources, including:
    - impacts on Narrambulla Creek, wetlands, riparian land, and sensitive soils (sodic and saline)
    - impacts on any regional water supply infrastructure
    - impacts on adjacent licensed water users and basic landholder rights
    - whether the development can operate to achieve a neutral or beneficial effect on water quality, consistent with the *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011*, and
    - consideration of the relevant *WaterNSW Principles for Managing Mining and Coal Seam Gas Impacts in Declared Catchment Areas*, including 'Protection of water quality' and 'Sound and robust evidence regarding environmental impacts',
  - details of water requirements and supply arrangements for construction and operation, and
  - a detailed description of the proposed water management system (including wastewater and stormwater management), water monitoring program, erosion and sediment control measures, management of the virgin natural excavated material & natural excavated material, and other measures to mitigate surface and groundwater impacts.

It is requested that WaterNSW be consulted during the preparation of the Environmental Impact Assessment.

If you have any further questions, please contact Jim Caddey on (02) 4824 3401 or email at environmental.assessments@waternsw.com.au

Regards

Girja

Dr Girja Sharma
Catchment Assessments Manager

WaterNSW

Level 14, 169 Macquarie Street, Parramatta NSW 2150
PO Box 398, Parramatta NSW 2124
T: 02 9865 2501 **M:** 0417 099 432

Goulburn Mulwaree Council
Locked Bag 22
Goulburn NSW 2580

Civic Centre
184 - 194 Bourke Street
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e council@goulburn.nsw.gov.au
www.goulburn.nsw.gov.au

10 May 2019

Lauren Evans
Senior Planning Officer
Resource Assessments – Planning Services
GPO Box 39
Sydney NSW 2001

Dear Lauren

Subject: Marulan Quarry, Winfarthing Road, Marulan (SSD 9750)
Request for SEARs

A review of the Preliminary Environmental Assessment prepared by GHD has been undertaken in relation to the above proposal and a report was considered at the 7 May 2019 Council Meeting. At this meeting Council resolved:

> *The Department of Planning be notified that the following issues are of particular importance to Council and the community and should be included as part of an Environmental Impact Statement:*
>
> *a) Traffic Impacts including the provision of a full interchange at the intersection of Windfarthing Road and the Hume Highway to ensure the safe access to and from this site.*
> *b) Visual Impacts*
> *c) Noise, Vibration and Air Quality Impacts*
> *d) Biodiversity Impacts*
> *e) Impacts on adjacent sites containing Heritage significance*
> *f) Suitability of the Site especially the proximity to established residential land uses*
> *g) Community Consultation*

In addition to the above, the following information was contained within the staff report presented to Council and has been provided as supplementary information in order to provide the Department and the applicant further insight into Council's resolution.

Description of the Development

- Details of hours of operation, with separate times proposed for noise generating works including blasting
- Number of employees
- Details of any separate licences and approval required
- Location and details of any proposed signage

- Details of number and types of machinery to be used with Noise Assessment and Air Quality Assessment
- Details of proposed buildings including cut and fill, final ground and floor levels, cross sections and building height
- Details on security of the site including fencing, landscaping and lighting
- Plans and elevations of proposed works including colours and materials
- Location of lot boundaries, existing easements, existing services and proposed services and easements including details of consultation and requirements from service and easement authorities
- Visual impact including views of the development from public places including the Hume Highway and Winfarthing Road and nearby dwellings
- Potential for impact to nearby Heritage Items
- An assessment of potential for impacts on Aboriginal Cultural Heritage
- Location, type and volume of storage areas and details of any screening of the storage areas
- Existing vegetation, area of native vegetation to be retained and removed/disturbed, assessment against 6.1 *Biodiversity Conservation Regulation 2017* and 7.3 *Biodiversity Conservation Act 2016*
- Location of staff facilities
- Waste water assessment report
- Details of any proposed staging
- Access and traffic
- Waste Management Plan
- Construction Management Plan
- Operations Management Plan
- Water use analysis/requirements over the year
- Impacts on groundwater.

Community Consultation

The EIS should ensure community consultation with local residents and community groups during project planning, pre-lodgement, development assessment, and operation and management. In addition the report should examine the potential impact the development will have on retaining existing landscapes and amenity of the area.

The Environmental Assessment should also identify people and properties affected by the proposal including properties affected by noise and air quality and measures to mitigate any social, economic or environmental impacts.

Environmental Planning Instruments

Assessment against relevant planning instruments and policies including Goulburn Mulwaree Local Environmental Plan 2009 and Goulburn Mulwaree Development Control Plan 2009.

- Permissibility of the proposal including the relationship with the Mining SEPP and ancillary development under the Goulburn Mulwaree LEP 2009 (as amended)

Assessment against relevant State Environmental Planning Policies including:

- *SEPP Primary Production and Rural Development (2019)*
- *SEPP Vegetation in Non-Rural Areas 2017*
- *SEPP Infrastructure 2007*

- *SEPP Mining, Petroleum Production and Extractive Industries (2007)*
- *SEPP 44 Koala Habitat Protection*
- *SEPP 33 Hazardous and Offensive Development*
- *SEPP Sydney Drinking Water Catchment 2011*
- *SEPP 64 Advertising and Signage*

Assessment against relevant Regional and Local Plans and Strategies

- *South East and Tablelands Regional Plan 2036.*
- *Goulburn Mulwaree Strategy 2020.*

Assessment against relevant S94/94A Contribution Plan

- The development should address the requirements of the relevant plan.

Assessment against Goulburn Mulwaree DCP 2009

- The development should address the requirements of the DCP. The DCP requires a 1000m buffer distance between an extractive industry and a residence not associated with it. There are a number of dwellings within the 1km radius of the development site.

Suitability of the site

- The potential for land use conflict, impact on neighbouring land uses including residential development in the vicinity is required to be addressed.
- Site analysis/locality plan including existing buildings, trees to be removed and retained and contours on site and adjoining.
- Site Slope appears to be identified on Council's GIS Mapping as part >20%
- Assessment under Crime Prevention through Environmental Design.
- Assessment of alternate locations and potential impact of noise, vibration, dust, visual impact, traffic and biodiversity.

Hazards and Contamination

- SEPP 33 & 55 - A Preliminary Hazard Analysis should be undertaken in accordance with *State Environmental Planning Policy 33 – Hazardous and Offensive Development* and the relevant *Hazardous Planning Guidelines* particularly with regards to blasting etc.
- Assessment for the potential for contamination in accordance with *Managing Land Contamination Planning Guidelines* including previous uses and the assessment of any imported fill.
- Bushfire - A review of Council records has revealed the site is "Bushfire Prone" under the current Map and also the proposed Draft Bushfire Prone Land Map. Council has been advised that as of the 25/10/18 the Goulburn Mulwaree Draft Bushfire Prone Land Map is with the NSW Rural Fire Services GIS section for processing. A Bushfire Hazard Assessment under the NSW Rural Fire Service *Planning for Bushfire Protection 2006* is therefore recommended. The Bushfire Hazard Assessment shall consider that Winfarthing Road has approximately 32 dwellings and is a no through road.
- Hazard Management - How will the development manage air quality issues including dust control and noise? Full details of materials to be received and expected quantities shall be provided.

- Noise and Vibration - Assessment and modelling of the expected noise during construction (and details of likely duration) and operation of the proposal should be required, particularly in relation to sensitive landuses, i.e. existing dwellings and likely future character in the vicinity of the development. This should include noise emanating from the site itself, as well as traffic related noise along the transport routes. Potential impacts should also be assessed for each individual stage as well as the cumulative impacts.
- Air Quality - Assessment of air quality impacts including dust emissions and potential odour and or any mitigating measures. The impact of dust on the health of nearby residents and the vehicles travelling on the Hume Highway and Winfarthing Road must be addressed.

Road and Traffic Impacts

The PEA proposes for vehicles associated with the proposal to exit Winfarthing Road and travel both north and south. No acceleration lanes currently exist when exiting Winfarthing Road to travel South or North. It is noted RMS would need to be consulted and traffic safety is of particular importance to Council and the community. The EIS should identify:

- Whether the development falls within the Traffic Generating Development under *SEPP (Infrastructure) 2007* and results of a Traffic Assessment;
- The likely destination route/s of product material and transportation methods;
- Proposed amount of traffic likely to be generated and types and sizes for vehicles;
- Likely times and days of the week for transportation;
- The amenity impacts on the area and any mitigating measures will be of particular interest to the community;
- Parking and manoeuvring area onsite;
- Structural adequacy of the traffic route, including any bridges/culverts, environmental management measures and traffic route swept paths;
- Any proposed upgrades of road infrastructure including intersections. The impacts of any proposed upgrades must be considered;
- Compliance with the relevant DCP provisions.

Building Code of Australia (BCA) Requirements

Compliance with the BCA with particular attention to provisions of fire services and access and facilities for persons with a disability.

Biodiversity

The land is wholly located within the Terrestrial Biodiversity layer (Clause 7.2 GMLEP) and mapped as High Conservation Value under the DCP 2009. The high conservation value is attributed to the present of the White Box, Yellow Box, Blakeley's Red Gum Woodland and Derived Native Grassland. Additionally the land is mapped as part of a significant corridor extending from the Abercrombie River to Morton National Park.

Water Cycle Management Plan

Assessment under *SEPP Sydney Drinking Water Catchments 2011* the development should ensure the development achieves a Neutral or Beneficial Effect on Water Quality.

Heritage and Archaeological Assessment

The land is located within Council's DCP as having potential to contain Aboriginal Archaeological Sites (Figure 3.1 to section 3.1 of the DCP) there is potential for unrecorded sites (Aboriginal and Non-Aboriginal).

The land is adjacent to Heritage Item 312 'Wandi' Robert Plumbs Inn at Shelleys Flats. The land may also contain remnants of the Great South Road which has been raised in a DA to the east for Tiyces Lane/Jasminco Quarry. A Heritage Assessment (Aboriginal Cultural Heritage and Non-Aboriginal) should be prepared to assess the significance of the area and any potential impacts on the site.

Crown Road and Street Address

The site appears to contain a crown road reserve and crown land. Owners consent is required for the use of any crown land.

Rehabilitation

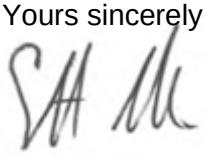
Full details of progressive rehabilitation to be provided including proposed final contours.

Miscellaneous

Council recommends a Quantity Cost Surveyors Report provided with the Development Application with a breakdown of the key elements and stages of construction.

If you require any further information, please contact me on (02) 48234480.

Yours sincerely



Scott Martin
Director Planning & Environment

NSW RURAL FIRE SERVICE

The Secretary
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Your reference: SSD-9750
Our reference: D19/1251

1 July 2019

Attention: Lauren Evans

Dear Sir/Madam,

Marulan Quarry at Winfarthing Road Marulan

Reference is made to correspondence dated 12 April 2019 seeking comments on the preparation of an Environmental Impact Assessment (EIS) prepared in relation to the above State Significant Development in accordance with the *Environmental Planning and Assessment Act 1979.*

The New South Wales Rural Fire Service (NSW RFS) has reviewed the information provided and advises the following shall be addressed in any future EIS prepared for the development:

- The aim and objectives of *Planning for Bush Fire Protection (PBP) 2006* or any subsequent version;
- Identification and management of potential ignition sources during construction and operation of the development especially on days of Total Fire Ban or Catastrophic fire weather;
- Ensuring that the storage of fuels and other hazardous materials is undertaken so that their impact on a potential bush fire is minimised;
- The implementation of a suite of bush fire protection measures for the development, including ongoing vegetation management and fire suppression capabilities;
- The provision of adequate operational access for fire fighting appliances to the site in accordance with *PBP 2006* or any subsequent version; and
- The preparation of a Bush Fire Emergency Management and Evacuation Plan which is consistent with *Development Planning- A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan December 2014.*

Postal address
NSW Rural Fire Service
Planning and Environment Services
Locked Bag 17
GRANVILLE NSW 2141

Street address
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Planning and Environment Services (East)
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If you have any queries regarding this advice, please contact Emma Jensen, Development Assessment and Planning Officer, on 1300 NSW RFS.

Yours sincerely,

Kalpana Varghese
Team Leader, Development Assessment and Planning
Planning and Environment Services (East)