FRAMEWORK FOR SECURING A VOLUNTARY PLANNING AGREEMENT BETWEEN A MINING PROPONENT OF A MAJOR DEVELOPMENT AND A LOCAL COUNCIL

Prepared by

The Mining and Energy Related Councils of NSW (MERC)

and

The NSW Minerals Council (NSWMC)

December 2019

Foreword:

Following a constructive period of collaboration, the NSW Minerals Council (NSWMC) and the Association of Mining and Energy Related Councils (MERC) are pleased to present an agreed set of guiding principles around the Voluntary Planning Agreement (VPA) process, including negotiation timeframes and various approaches for calculating contributions.

After constructive discussions between the organisations, we have agreed on:

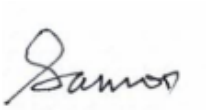
- a process for negotiating VPAs;
- a roads contribution calculator;
- a set of guiding principles and calculation options for determining community contributions for mining projects.

The guiding principles for community contributions reflect the views of the various organisations involved and provide a range of options to calculate contributions, depending on the circumstances of the case.

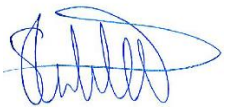
With regard to community contributions, both parties agreed that:

- there is not an easily identifiable one size fits all methodology that can be mandated for use by everyone; and
- there are various methodologies/calculations that could be used (and have been used for various projects), either on their own or in combination.

The NSWMC and MERC encourage councils and proponents of mining projects to utilise the guidelines in a constructive and collaborative manner in order to secure a mutually satisfactory outcome. However it is noted that the parties involved always have the option of agreeing on other approaches that suit their particular needs and arrangements in the VPA negotiations.



Greg Lamont
Chief Executive Officer
MERC



Stephen Galilee
Chief Executive Officer
NSWMC

1. Introduction

The NSW Minerals Council (NSWMC) and the Association of Mining and Energy Related Councils (MERC) have been involved in discussions to deliver greater clarity as to the means by which the monetary contribution for a mining related Voluntary Planning Agreement (VPA) can be calculated.

NSWMC and MERC (hereafter 'the Parties') have agreed on guidance material that can be used to negotiate a VPA for mining projects. The guidance material includes:

- VPA Negotiation Process: The various steps and timeframes involved in the VPA negotiation process. Refer 'VPA Negotiations Process Schematic' (**Attachment 1**);
- VPA Roads Contributions: A 'Roads Contribution Framework' (October 2018) (**Attachment 2**);
- A list of various documents for useful background reading (**Attachment 3**); and
- VPA Community Contributions: See below. This document has been developed to assist mining proponents and local councils when negotiating an appropriate VPA contribution that represents a fair outcome for the mining proponent and the council, residents and ratepayers of the affected Local Government Area (LGA). The document is a guide only.

2. VPA Negotiation Process

The agreed negotiation process (see Attachment 1) provides certainty in terms of:

- Proponent providing Council with an early briefing of the proposed development;
- Commencement of VPA negotiation process;
- Negotiation phase, and steps in the process; and
- Timeframe for completing each stage of the process (approximately 80 days – with 'stop the clock' provisions)

Where no agreement is reached, an "alternative dispute resolution process" agreed to by the miner and Council(s) is triggered. In such circumstances the Department of Planning, Industry & Environment (DPIE) has indicated it will act in a facilitatory role, and upon request from either of the parties to the negotiation. The terms of the facilitatory role will be determined on a case by case basis in consultation with all of the relevant players, including DPIE.

3. Negotiating Road Upgrade and Voluntary Planning Agreements

3.1 Roads Contributions

3.1.1 Road Upgrades

A report has been prepared by the Parties that provides a framework that can be used for determining the potential impact of the construction and operation of a new mining development on the public road network (see Attachment 2).

The methodology is based on pavement engineering and transport planning standard principles.

As the Council(s) is the designated roads authority for local roads within an LGA, it will determine the road upgrade requirements in consultation with the miner. The mining proponent will in turn directly fund the agreed road and intersection upgrades. The road upgrading requirements are

addressed in the consent conditions and the costs related thereto are separate to, and not a component of the VPA financial quantum.

3.1.2 Ongoing Road Maintenance

The local Council(s) will determine, in consultation with the miner, which roads require ongoing maintenance during the life of the project, mindful of predicted traffic flows – both types and volumes. The agreed annual, ongoing financial contributions for road maintenance are stipulated in the VPA.

3.2 Community Enhancement Contributions

The Parties acknowledge that there is no 'one size fits all' approach for determining community enhancement contributions. Different councils will have different drivers for determining the financial quantum.

The detail below provides an overview of various methodology options which can be used as a basis to negotiate the community enhancement contribution component of a VPA.

The Parties have noted issues relating to each option and these are outlined to assist discussions between the miner and the Council(s) on the merits of each methodology and suitability to circumstances.

4. Voluntary Planning Agreement – Various Community Enhancement Contribution Methodology Options

Option A: Percentage of the Capital Investment Value (CIV)

Historically the planning and assessment system has accepted one percent of CIV as the default value for calculating a VPA quantum for State Significant Developments (SSD).

The CIV is found in the EIS and in the online application form submitted by the proponent.

The VPA would be determined by applying the percentage rate to the CIV (e.g. 1% of $500M = $5M).

Issues for consideration

- NSWMC acknowledges the 'percentage of CIV' approach is enshrined in the *Environmental Planning and Assessment Act 1979* and has been used by Councils.
- For CIV calculations, MERC notes that analysis of previous VPAs indicates amounts equivalent to around 1.3% of CIV have been agreed.
- NSWMC does not support 1.3% of CIV on the basis that it is a 'reverse engineered' consideration of historical VPA agreements that were determined/calculated using a variety of different methods.
- NSWMC supports an (up to a maximum) 1% of CIV depending on circumstances/demand for services.
- NSWMC believes the determination of the percentage value of CIV should have some link with impact on services (e.g. a project to upgrade a coal handling facility may have a high CIV but no impact on local services).

Option B: Cents per Tonne of Run-of Mine ('ROM') or Product Coal

ROM coal is the coal delivered from the mine pit to the coal preparation plant. Product coal is the coal post processing in the coal preparation plant destined for market.

The predicted ROM and product tonnages are stated in the EIS.

A 'cents per tonne' rate would be applied to the tonnage of ROM or Product coal for the life of the project.

Issues for consideration

- MERC supports an amount of say 8 cents/ tonne for Run of Mine (ROM) or product coal. This is based on an analysis of previous VPAs that indicates amounts equivalent to 8 c/t have been agreed.
- NSWMC believes that if a 'cents per tonne' approach is used, then 8 c/t is too high, and that any rate should take into account any likely impact on local services.
- MERC believes ROM extraction is related to activity that could impact adversely on the local community such as traffic and dust, noise, blast fumes and vibrations, water supply, night lighting and visuals associated with the building of overburden stockpiles, coal preparation plant activity etc.
- NSWMC believes that a VPA should not be used to compensate for off-site impacts as they are addressed through the environmental assessment process.
- NSWMC is generally opposed to a VPA contribution tied to coal production rates as it is seen by NSWMC as equivalent to a royalty/tax. Companies already pay substantial royalties to the State as well as significant land rates to the local council which already contribute to local services.
- MERC believes an amount per product tonne means the LGA shares in the economic productivity of the mining project – the more product sold, the more the LGA benefits.
- According to MERC, a variation could be considered involving a different rate based on the coal ***type***, depending on whether it is thermal or coking coal.
- MERC proposes that for high value commodities (e.g. tin, scandium, gold, copper) where there are low concentrations per tonne of ore (unlike coal), the rate should be charged on the ore concentrate – say 10 cents per tonne.
- NSWMC believes this approach does not have a direct relationship/nexus to impact on services. For example, an increase in productivity at a mine does not automatically mean more workers or impacts on local services.

Option C: Worker Domicile

This methodology aims to identify a quantum directly related to impacts on local infrastructure and services (apart from road upgrades) arising from population increases caused by mine employees/contractors and their families relocating to an LGA.

This approach is based on the principle that if the project is predicted to increase the population in an LGA this may place additional demands on infrastructure such as housing, water, sewerage and drainage, recreation facilities, etc., that would require additional expenditure by Council.

A Calculator model was produced for NSWMC by Umwelt Australia Pty Ltd in 2016 to assist this approach. Details on the Calculator are available from NSWMC and MERC.

Issues for consideration

Amount per Incoming Employee/Contractor

- NSWMC supports the use of the worker domicile model given it is linked to demand for services.
- NSWMC supports a range of $2,000 - $10,000 incoming employee (maximum) as outlined in the Umwelt calculator.
- NSWMC supports the principle that the rate could be increased or decreased (within the $2K - $10K range) depending on analysis of likely demand for services.
- MERC supports a range in the order of $3,000-$12,000/employee or contractor (plus CPI since 2016 when the model was developed). MERC believes this amount should be increased if there is a need to significantly upscale capacity, for remoteness or a long construction phase. The amount could be decreased if there is ample infrastructure capacity, only a small increase in population or a short construction phase.

Costs for Displacement of Local Residents

- As per the Umwelt model MERC believes this approach should also include a 'Displacement Cost' - an amount that acknowledges the displacement of local residents and disruption to local communities when land is acquired by the miner and people are required to relocate. This quantum could be in the order of $3,000 - $12,000/house vacated.
- MERC believes that, in the event land is acquired and people are displaced yet the mine does not proceed (eg Cobbora), then the miner should further compensate the affected Council(s) for the resultant ongoing population losses and the economic and social wellbeing fore gone.
- NSWMC notes that residents displaced by a mine would be addressed either under conditions of consent or compensated directly by the company. Once the land has been acquired the company would then pay council land rates. Any displacement costs would be negotiated consistent with the Umwelt Calculator.

Tipping Points

- As per the Umwelt model, MERC believes this approach should include a 'Tipping Point' – that is an amount to attend to a high priority situation when, for example, the sewerage or water systems or other infrastructure is at a tipping point and requires immediate upgrading, even if only a few extra services are required.
- NSWMC notes that where a mining project may result in increased demand for a particular service or accelerate the need to bring forward a service/upgrade the proponent would negotiate with the council to identify a reasonable contribution to bring forward services consistent with the Umwelt Calculator.

Recovery of Council Management Costs

- MERC believes this approach should include an amount to acknowledge additional demands on a Council's management, planning and governance functions. For example, managing the Community Enhancement Fund, attending Community Consultative Committee Meetings, ongoing dialogue with the miner, reviewing performance data and engaging with the broader community on project-related matters. This amount could be in the order of $100,000 for every 0.5–1.0 % of

population increase.

- NSWMC supports Council(s) recovering reasonable administrative costs consistent with the Umwelt calculator.

Option D: 'Combination' Model

This approach involves applying a combination of CIV, and/or 'cents per tonne of production' and/or 'worker domicile' methodologies.

This could include a range of combinations depending on the circumstances of the case (examples: 70% CIV + 30% worker domicile; or 50% cents per tonne + 50% worker domicile).

Example:

A. CIV and/or cents per tonne - The council calculates the mix of CIV and/or cents per tonne, calculates the financial quantum and then multiplies the sum by 0.7. (70%); plus

B. Worker Domicile - The proponent applies the Umwelt Worker Domicile Model to the proposed project and the resultant financial quantum is then multiplied by 0.3. (30%).

The quantum arising from Steps A and B are then added to deliver the VPA contribution.

Issues for consideration

- While it remains necessary under this approach to negotiate the relative percentages to be applied to different methods, the 'combination' approach goes some way to addressing some of the main concerns expressed by MERC and NSWMC about the different available approaches.
- A 'Combination' approach provides the miner with the opportunity to acknowledge there may be some impacts on environmental, social and economic wellbeing that are difficult to quantify and that occasionally the mitigation measures may not always be completely effective.
- NSWMC is of the view that inclusion of a 'worker domicile' component makes any agreed VPA amount at least partly linked to likely demand for local services by mine workers and their families.

5. Other VPA Matters to Consider

Below is a list of other matters recommended for consideration by the Parties in deliberations on the VPA process:

1) It is preferable that parties commence background discussions on the VPA well before the EIS is placed on exhibition.

2) If other LGAs are likely to be affected by the proposed project, for instance workforce domicile, project related traffic on local roads, water source, etc., then it is recommended all the relevant councils be invited to negotiate a joint VPA.

   Where the impacts from a mine are predicted to spread across more than one Council boundary, all affected Councils should be party to the negotiations. The Councils should reach an agreement on the proportional allocation of the quantum, perhaps on a pro-rata basis relative to the level of predicted impact on local communities, infrastructure and services.

3) Councils should carefully examine the details in the EIS before finalising the VPA negotiations.

4) All monetary contributions should be subject to the Consumer Price Index (CPI) from the date of signing of the VPA or upon commencement of project construction. The end date for payments should also be determined up-front.

   The timing for payments (i.e. up front, payment over time or a combination) will be agreed to by the Parties through the negotiation process.

5) The Parties should agree on how and when the actual employee/contractor domicile data for different LGAs is to be monitored and verified. Also, allowance should be made for some mechanism to amend the monetary contribution allocations if the domicile data changes over time.

6) All the Parties be aware of the public exhibition provisions of a draft VPA before any final settlement of the deal.

7) A Council that has entered into a VPA is required to include in its annual report particulars of compliance with and the effect of the VPA during the year to which the report relates.

8) MERC believes that development consent should not be granted until such time as the in-principle terms and conditions of the VPA have been determined.

   NSWMC believes development consent can be granted without agreement on a VPA as this can be dealt with through conditions of consent if agreement on a VPA is not reached prior to a determination being made.

See below in the list of Attachments various valuable reference documents. It is recommended that Councils unfamiliar with negotiating VPAs refer to the listed material and also discuss the matter with MERC.

ATTACHMENTS

- **Attachment 1:** VPA Negotiations Process Schematic

- **Attachment 2:** Roads Contributions Framework (Oct 2018)

- **Attachment 3:** List of Recommended Reference Documents

  a) DPE's Draft Practice Note – Planning Agreements (November 2016)
  b) DPE's Draft Planning Agreement Guidelines – For State Significant Mining Projects (July 2015)
  c) DPE's Social Impact Assessment Guideline for State Significant Mining, Petroleum
  d) Production and Extractive Industry Development (August 2017)
  e) DPE's Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals (December 2015)
  f) DPE's Technical Notes Supporting the Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals (April 2018)
  g) Former Department of Infrastructure, Planning and Natural Resources (DIPNR), Development Contributions - Practice Notes (July 2005)
  h) GLN Planning Report for the DPE regarding the Development Contributions for the proposed VPA between Singleton Council and the United Wambo JV Partnership (November 2018)

VPA Negotiation Process Schematic

PEA Stage

Issues of SEARs

During PEA stage, proponent provides council a comprehensive **project briefing** on the proposed project. The briefing will cover all VPA considerations, including roads.

Council can seek assistance from the MERC in preparation for VPA negotiations (if a member of MERC)

Phase 1
Pre-exhibition

Day 1

Proponent to provide **initiation letter** to council that starts the negotiation process in Phase 1. The letter will request a date for the Heads of Consideration meeting and include any significant changes to the mine scope compared with the PEA briefing.

Day 25

By day 25, proponent and council to hold a **Heads of Consideration** meeting to identify local infrastructure impacts (including to roads) and potential gaps in information that need to be addressed. Council to advise of existing infrastructure capacity and relevant information it holds. Parties to agree an Alternative Dispute Resolution Process.

EIS/EA Exhibition

Day 50

By day 50, the proponent and Council agree on scope of **Traffic and Transport Assessment Study**

Phase 2
Post-exhibition

Day 1

Formal offer to be provided after EIS/EA exhibition closes (that includes road contribution commitments) and response to submissions document tabled, initiating Phase 2 of the negotiation process.

Day 10

By day 10, parties agree on **which council meeting** the final offer will be considered at.

By day 50

Final offer to be provided. It must be provided 15 days prior to the agreed full council meeting.

By day 65

Agreed council meeting in 65 day period to consider final offer

By day 79

Council to provide a **response to offer** within 14 days of agreed full council meeting.

Day ~80

If no agreement, the Alternative Dispute Resolution Process agreed by the parties is triggered.

Day 80

Expiry of negotiation period, which occurs 15 days after last full council meeting, and within 80 days of commencement of Phase 2, at the latest.

Legend

- Negotiation period
- Key date
- Council action
- Proponent action
- Joint action
- Stop-the-clock mechanism to be utilised as required

Notes:

1. A council's acceptance of a final offer has no bearing on whether or not it endorses a mining project proposal in its entirety, as these are separate matters.
2. Days are business days.

Acronyms

EA	Environmental Assessment
EIS	Environmental Impact Statement
MERC	Mining and Energy Related Councils
PEA	Preliminary Environmental Assessment
SEARs	Secretary's Environmental Assessment Requirements
VPA	Voluntary Planning Agreement

Mining and Energy Related Councils and NSW Minerals Council

Roads Contribution Framework

October 2018

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1. Introduction

1.1 Background

GHD Pty Ltd (GHD) has been engaged by the NSW Mineral Council to develop a generic contributions framework that will provide a clear path for the establishment of contributions related to ongoing road asset funding by mining projects. The engagement is on behalf of the Project Partners, comprising the Mining and Energy Related Councils and the NSW Minerals Council.

1.2 Purpose of this report

The purpose of this report is to present a framework that can be used as a standard approach for determining the potential impact of the construction and operation of new mining developments on the road network. The methodology seeks to use a simple process based on pavement engineering and transport planning principles and replicate the *Interim VPA negotiation process v1.1* developed by the Project Partners.

The Framework aims to:

- Introduce **asset** consumption to the current planning policy settings which typically only considers the **capacity** of transport infrastructure.
- Address variability between regions and engineering approach with regards to traffic growth rates, local and asset management practices/preferences.
- Set the triggers for materiality, and whether a particular Project justifies contributions, or if so at what level, being in part or whole.

It is confirmed that the framework within this report aims to be consistent with current planning practice in NSW and is understood to be so. Current practice requires projects of any nature to directly fund upgrades to infrastructure triggered by their development. This framework will therefore provide most clarity to the determination of ongoing costs, usually captured by Voluntary Planning Agreements (VPAs).

1.3 Acknowledgement

Roads are currently provided by government to facilitate transport and economic activity. Notwithstanding the provisions for upgrades associated with new developments (See Section 1.4.1) roads are generally mostly maintained by local and state governments and funded by general revenues available to those bodies. There are few instances where specific users pay for use of road infrastructure directly, either related to traffic use or general access arrangements. Obvious exceptions include toll roads limited to large capital cities.

The current proposal to develop a framework for road contributions through the VPA mechanism, and based directly proportional to use associated with mining activity, represents a unique arrangement for road pricing. Under the arrangements being considered, this in effect ignores the rates, royalties and other payments by mines that could be considered contributions towards public infrastructure. It also ignores the employment benefits of staff, contractors and services industries that indirectly and directly contribute to government revenues through rates and other taxes.

This study is written acknowledging this context. It is also acknowledged that local government, generally, faces well publicised challenges relating to funding of asset condition backlogs.

1.4 Context within current practice

1.4.1 Capital upgrades

Traffic and Transport studies are currently produced for large developments including mining projects. Typically, these studies are limited to consideration of capacity of the road network, considering the capacity of the travel lanes and intersections to operate at an appropriate level of service (LoS). This process is well defined and understood within government and industry.

Capital works required are typically funded by the Proponent where they are required solely for a project.

1.4.2 Dilapidation

Separate to the Traffic and Transport study, there is typically the requirement to understand the extent of potential pavement damage (dilapidation) relating to construction of a project. This is usually captured by a broad consent condition and is implemented on an agreed basis with the relevant council. It is important this is addressed in the Framework as the estimation and remedies for construction impacts need to be clear prior to commencement of work.

Pavement dilapidation resulting from construction of a project would be repaired at the Proponent's cost.

1.4.3 Consumption

The use of roads through operational phases is not typically captured by the Traffic and Transport study in relation to asset consumption. VPAs are used to capture road maintenance, however these are typically agreed by negotiation between the Proponent and Council. The basis of these agreements and the logic applied to developing the funding is not known.

Conflict between Proponents and Councils has arisen on many projects across all the stages of mine development and operation. The framework presented utilises the well-understood methodology used for Traffic and Transport assessments, and augments with road pavement design standards to provide a robust basis for the estimation of road use, and hence provide a logic basis for negotiations to take place.

Pavement consumption would be funded proportionally to use during operational phases of a project. Total funding would account for the full life-cycle costs relevant to a mine's life. Consumption will be the basis of ongoing VPA funding.

1.5 Negotiation process

The negotiation process and timeline has been broadly agreed by the Project Partners and is referred to as *Interim VPA negotiation process v1.1.* The Framework ties in with the phases nominated in the Process. The Process is attached in Appendix A.

1.6 Nomenclature

Term	
AADT	Average Annual Daily Traffic
ESA	Equivalent Standard Axles
LoS	Level of Service
VPA	Voluntary Planning Agreement

2. Roads contribution framework

The Framework is constructed below in line with the phases of the Process and consistent with current sequence of planning approvals.

Table 2-1 outlines and summarises the Framework at a high level with each stage described in further detail in subsequent sections of this report.

Table 2-1 Framework outline

Stage	Phase	Technical actions
1	Preliminary Environmental Assessment	• Acknowledge requirement for detailed Traffic and Transport Assessment Study as current practice • Following issue of SEARs, proponent to define context of the Project in relation to traffic and transport
2	Phase 1 – Pre-exhibition	• Council to provide existing data relating to asset condition, pavement management practices, pavement design parameters, traffic count data and costs relating to maintenance and construction • Project Partners agree scope of Traffic and Transport Assessment Study (Study)
3	Environmental Assessment	• Proponent to complete Traffic and Transport Assessment Study, consistent with current practice identifying capacity of roads (mid-block) and intersections used for the construction and operation of the Project • Expand the assessment to incorporate: – Road cross section appropriate for intended traffic – Dilapidation through construction – Pavement life consumed through operation • Estimate of costs for upgrades and ongoing road maintenance. This will help frame negotiations • Project Partners hold ongoing discussions on technical matters
4	EA exhibition	• Detailed consideration by council and formal response • Refinement of Traffic and Transport Assessment Study based on exhibition responses (council and others)
5	Phase 2 – Post-exhibition	• Project Partners discuss funding arrangements and timing • Proponent provides formal offer, commencing the Phase 2 negotiation schedule
6	Execution	• Following project approval, construction and funding contributions commence as agreed • Consider validation point to confirm assumptions made in the Study. Possibly at the conclusion of a defect liability period, which is typically 1 year after practical completion

The core technical aspects of the Framework are captured by Section 3, as detailed further below.

2.1 Roads contribution framework

Each of the sections below relate to the steps in Table 2-1. This Framework is intended to be applied in a step by step basis at each relevant stage. The details presented below only relate to the application of this framework and specific planning or other specialist studies are not addressed.

1. Preliminary Environmental Assessment Phase	
Objective:	To develop a Preliminary Environmental Assessment (PEA) that defines and summaries the proposal for mining development and response by NSW Government Department of Planning outlining the Secretary's Environmental Assessment Requirements (SEARs) nominating the requirements of the Environmental Impact Assessment (EIS).
Required inputs:	Nil
Task:	No change proposed to current practice. The requirement for a detailed Study would be acknowledged by the Proponent.
Deliverables/ Outcomes:	Nil

2. Phase 1 – Pre Assessment Phase	
Objective:	• To adequately brief council • Project Partners in-principle agreement on study scope • Facilitate handover of data and identification of gaps
Required inputs:	• Availability of key personnel • Council data for: – Average Annual Daily Traffic (AADT) – Pavement design parameters used locally, such as growth rate – Adopted road design standards (Austroads assumed) – Road asset condition data, typically on a segmented basis on a condition scale of 1 to 5 (Good to poor) – Maintenance records and/or pavement management strategy – Plans for road upgrades to pavement or geometry, including funding applications – Road life cycle and project specific costs, if available and appropriate
Task:	• Proponent presents a detailed project briefing to council, nominating infrastructure that is expected to be utilised for construction and operation • Proponent to provide initiation letter to council as per the *Process* • Council to provide available data. Proponent to identify gaps and define actions to source required information • Heads of Consideration meeting in accordance with the Process (including an agreement on an Alternative Dispute Resolution process to be triggered if the Council does not accept the Proponent's offer in the timeframe provided by the Process) • Discussion and agreement on method to close data gaps. • Project Partners agree scope of work for *Study.* Subsequent stages of the Framework will provide guidance

2. Phase 1 – Pre Assessment Phase	
Deliverables/ Outcomes:	• Council data • Summary of data gaps and method for collection of new data • Agreed scope of *Traffic and Transport Assessment Study*

3. EIS/EA Phase	
Objective:	To prepare an Environmental Assessment to quantify the environment, heritage and biodiversity impact of the proposed development
Required inputs:	• Preliminary Environmental Assessment • Secretary's Environmental Assessment Requirements (SEARs) • Data and heads of agreement from Stage 2
Task:	• Prepare an Environmental Assessment and associated studies which determines the impact of the proposed development
Deliverables/ Outcomes:	• Environmental Assessment and associated studies including *Traffic and Transport Assessment Study*

3A. Traffic and Transport Assessment Study (Level of Service)	
Objective:	• To determine the traffic issues associated with a proposed development • The assessment is to determine the impacts of the development on the capacity, condition, safety and efficiency of the local and state road network in the vicinity of the development site • Identify any upgrades required by a project
Required inputs:	• Defined scope for assessment determined in Phase 1 of consultation with council • Historical traffic count surveys if available • Input regarding nearby planned or proposed developments and potential change to land use
Task: (current practice)	• Undertake traffic counts and intersection surveys as required • Inspect the site to validate data • Estimate construction and operation traffic generated by the project in whole and on particular roads. This would include a breakdown of light and heavy vehicles • Prepare a Traffic and Transport Assessment Report in accordance with *RTA Guide to Traffic Generating Developments (2002)* and *Austroads Guide to Traffic Management Part 12,* particularly establishing level of service (LoS) relating to: – Mid-block capacity in relation to number and adequacy of travel lanes – Intersection performance using Austroads graphs, SIDRA or other appropriate traffic modelling program
Task: (proposed)	• Assess existing cross section against *Austroads Guide to Road Design Part 3: Geometric Design.* Identify widening or upgrade required based on projected AADT This is required to address safety of increased traffic and/or heavy vehicle movements relating to suitably wide carriageway rather than LoS • Benchmark cross section against similar trafficked roads in the locality • Identify areas requiring safety upgrades to suit upgraded road arrangement

3A. Traffic and Transport Assessment Study (Level of Service)	
Deliverables/ Outcomes:	• *Traffic and Transport Assessment Study*, identifying upgrades resulting of traffic volumes and Levels of Service of roads and intersections • Identification of capital upgrades required to facilitate the development of a project. Consistent with current planning practice, these works would be funded by the Proponent if required in isolation

3B. Traffic and Transport Assessment Study (Dilapidation)	
Objective:	To estimate expected pavement dilapidation within the project area resulting from construction activities. The basis of work is to: • Establish expected asset condition at the commencement of construction • Using the project traffic data, estimate the extent of deterioration resulting from construction traffic • Broadly estimate the extent and nature of expected pavement damage. This is required to guide management strategies between the Project Partners • Define the methods to monitor and measure dilapidation, and whether repair actions
Required inputs:	• Defined scope for assessment determined in Phase 1 of consultation with council • Existing and proposed traffic volume estimates from Traffic and Transport Study (Stage 3A) • Council asset data including but not limited to: – Pavement condition classifications using rating scale of 1 (Good) to 5 (Poor) – Existing pavement design life (years) and Equivalent Standard Axles (ESA) (alternatively termed Heavy Vehicle Axle Group (HVAG)) – Asset maintenance schedule and future plans for works i.e. sections subject to funding applications – Typical pavement treatments for maintenance and rehabilitation – Rates for typical pavement treatments and life cycle costs
Task:	• Undertake a site visit of the project area to validate existing pavement condition and identify locations for safety improvements • Review existing road infrastructure, arrangement and condition, to establish: – Road classifications - state, regional or local – Approval for heavy vehicle movements - B Double and or HML compliance – Historical traffic and base year traffic volumes, particular attention to percentage heavy vehicles – this would be available from Stage 3A – In the event that council does not have pavement condition data a survey will be required through laser roughness measurement or visual inspection to establish a baseline data set to enable pavement consumption calculations. From this information, derive condition ratings from 1 to 5 The preferred survey method to be agreed between council and proponent – Review council asset maintenance schedule and plans for future works within the project area – Review road formation for cross fall and pavement drainage to correlate to locations of pavement failure, noting types of failure • Estimate pavement life consumed for project construction

3B. Traffic and Transport Assessment Study (Dilapidation)

1. Calculate the Equivalent Standard Axles (ESA) during the specified period in accordance with Equation 14 of *Austroads Guide to Pavement Technology Part 2: Pavement Structural Design* (below)

$$N_{DT} = 365 \times AADT \times DF \times \%HV/100 \times LDF \times CGF \times N_{HVAG} \quad (14)$$

where

AADT	=	Annual Average Daily Traffic[2] in vehicles per day in the first year (Section 7.4.4)
DF	=	Direction Factor is the proportion of the two-way AADT travelling in the direction of the design lane
%HV	=	average percentage of heavy vehicles (Section 7.4.4)
LDF	=	Lane Distribution Factor, proportion of heavy vehicles in design lane (Section 7.4.3)
CGF	=	Cumulative Growth Factor (Section 7.4.5)
N_{HVAG}	=	average number of axle groups per heavy vehicle (Section 7.4.6).

2. Obtain existing road pavement design ESA from council or in the absence of information calculate using *Equation 14* of *AGPT02* using existing traffic volumes and historical growth rates
3. Factor the existing road ESA by condition so that remaining life of the pavement can be estimated. (Comparing remaining life to project construction traffic provides an indication of expected dilapidation). Suggested factors for remaining life are:
   - 1 (very good): 90% life remaining
   - 2 (good): 70% life remaining
   - 3 (satisfactory): 50% life remaining
   - 4 (poor): 30% life remaining
   - 5 (very poor): 10% life remaining
4. Determine the proportional pavement life consumed in terms of ESA between existing and proposed traffic volumes (Step 1 and 3)
5. Establish a risk profile of pavement dilapidation for each road and/or segment, based on percentage of life consumed (step 4). The risk profile will vary from project to project based on the pavement life consumed and is used to assist in the development of cost estimates
6. Based on the risk profile, proponent and council to agree:
   - Method of dilapidation estimate. Typically, either visual inspection (preferred) or laser roughness measurement.
     Undertaken prior to, and immediately following construction
   - Method of “repair” being either physical repair to re-construction condition by the proponent or contribution of equivalent cost, paid by the proponent to council
     Visual inspection is better suited to direct repair. Laser roughness is more suited to contributions

Deliverables/ Outcomes:

- Construction dilapidation report defining expected extent and nature of pavement damage due to construction activities.
  Potentially including cost guidance
- Agreed assessment and reinstatement methods for incurred pavement dilapidation
- Pre and Post construction pavement survey inspections/reports. Ultimately leading to pavement reinstatement (if needed)

3C. Traffic and Transport Assessment Study (Consumption)	
Objective:	To estimate expected pavement consumption within the project area by utilising traffic data from 3A and 3B to estimate proportional use (consumption) of a mine through the operation stage of the project Establish costs associated with consumption as a guide to VPA negotiations
Required inputs:	• The basis of calculation resembles 3B, however pavement condition at commencement is ignored, and the basis that the life cycle of the pavement is considered in the context of the mine operational life • Defined scope for assessment determined in Phase 1 of consultation with council • Existing and proposed traffic volume estimates from 3A • Council asset data including: – Existing pavement design life (years) and Equivalent Standard Axles (ESA) – Asset maintenance schedule and future plans for works i.e. sections subject to funding applications – Typical pavement treatments for maintenance and rehabilitation – Rates for typical pavement treatments and life cycle costs
Task: **(method)**	• Undertake a site visit of the project area to familiarise with site • Review existing road infrastructure, arrangement and condition, as per 3B, except for pavement condition • Estimate pavement life consumed for project duration: 1. Calculate the ESA during the specified period using traffic volume estimates in accordance with Equation 14 of *Austroads Guide to Pavement Technology Part 2: Pavement Structural Design* $N_{DT} = 365 \times AADT \times DF \times \%HV/100 \times LDF \times CGF \times N_{HVAG}$ (14) where AADT = Annual Average Daily Traffic[2] in vehicles per day in the first year (Section 7.4.4) DF = Direction Factor is the proportion of the two-way AADT travelling in the direction of the design lane %HV = average percentage of heavy vehicles (Section 7.4.4) LDF = Lane Distribution Factor, proportion of heavy vehicles in design lane (Section 7.4.3) CGF = Cumulative Growth Factor (Section 7.4.5) N_{HVAG} = average number of axle groups per heavy vehicle (Section 7.4.6). 2. Obtain existing road pavement ESA from council or in the absence of information calculate using equation 14 of AGPT02 using existing traffic volumes 3. Determine the proportional pavement life consumed in terms of ESA between existing and proposed traffic volumes (Step 1 and 2). Note that there is potential variance in pavement design life and project operation timeframe and this needs to be acknowledged if the mine life is less than the pavement life cycle (typically 20 or 30 years) The derived pavement life consumed will include a proportion of traffic for estimated growth of the region. There is an argument that the project could account for some of that growth and therefore the impact considered less. This is to be discussed with the project partners

3C. Traffic and Transport Assessment Study (Consumption)	
	4. Establish materiality of the consumption. a risk profile of pavement consumption for each road and or segment, based on percentage of life consumed (step 3). The risk profile will vary from project to project based on the pavement life consumed. If mine consumption was within the allowance for growth in the road's pavement design, it is expected there would be no contribution 5. Develop cost estimates for pavement consumption and any safety improvements, based on council supplied cost data or as undertaken by an experienced independent professional organisation: – Rates are to be developed with council input to reflect actual pavement treatments based on a lifecycle approach through determining the maintenance schedule of a pavement over its design life
Deliverables/ Outcomes:	• Pavement consumption and funding report • Cost estimates for pavement consumption, maintenance and road safety improvements for nominated project

4. EIS/EA Exhibition Phase	
Objective:	To seek community and stakeholder feedback on the proposed development including their concerns and objections
Required inputs:	• Environmental Assessment and associated studies
Task: (method)	• Incorporate community and stakeholder feedback into final environmental assessment documentation through updating project plans or assessment reports and undertaking further studies
Deliverables/ Outcomes:	• Final Environmental Assessment for Department of Planning approval

5. Phase 2 – Post Exhibition Phase	
Objective:	Finalise the road contributions commitments by proponent and determine monetary value of contributions to road maintenance and upgrades, including timing of contributions
Required inputs:	• Reports from Stages 3A, 3B and 3C
Task: (method)	• Proponent to prepare responses to community and stakeholder submissions following EIS/EA exhibition • Proponent to provide to council a formal offer for road contributions to initiate 80-day negotiation period • By day 10 of Phase 2, parties are to agree on which council meeting that the final offer is to be considered at • By day 50, proponent to provide final offer to council • By day 65, Council to offer consider at meeting • Council to provide a response to offer within 14 days of agreed council meeting

5. Phase 2 – Post Exhibition Phase	
Deliverables/ Outcomes:	• Confirmation and agreement of contributions • If no agreement reached the Alternative Dispute Resolution agreed by the parties is triggered

2.2 Multi-mine arrangements

Where multiple mines, or other distinct users, jointly use a road, the same principles as defined above. Each user's ESA is estimated based on traffic volumes and composition and responsibility allocated proportionally.

2.2.1 Part-segment considerations

The above model can be used to estimate proportional allocations where a particular user, or users, utilise part of a road length, or where traffic use may vary along the length of a road. In these instances, the calculated ESAs from each user can be multiplied by the kilometres travelled, generating the *ESA.km* travelled. The ESA.km are then used to determine the proportion for each user based on the total ESA.km for the road in question.

This was the basis of the *Thomas Mitchell Drive Contributions Study* completed for the Department of Environment and Planning in 2014, by GHD. The unit of ESA.km does not have pavement design status, and is put forward only for the purposes of proportional estimation of use.

A simplified example of this scenario is developed in Section 4.

3. Thresholds and materiality

In consideration of the above calculations, there are points of materiality that will trigger contributions, and under which, contributions may not be warranted. These trigger points, or thresholds, will remain difficult to define, and will largely be determined by the philosophical positions of the stakeholders. With respect to the trigger points, the following could be relevant to negotiations:

3.1 Upgrades

Austroads has been nominated as the benchmark standard for consideration of road cross section in the context of traffic volume and composition. The Austroads standards are widely, almost exclusively, adopted by local and state roads authorities.

The Austroads guides do acknowledge economics and physical constraints at times require practical application and compromise. This is often seen in the rehabilitation or upgrade of rural roads where cross sections are often improved, however not necessarily to the standard nominated by Austroads. There are numerous examples of this throughout the Hunter Valley and NSW.

In the context of this framework, it is therefore appropriate that Austroads guides the negotiations and mine developments, and not necessarily be a fixed basis for determination. Ultimately, a wider cross section is safer and this also needs to be considered in the context of additional cost to both proponent and Council for ongoing maintenance. Further, a road section upgraded by a mine could also set a precedent for subsequent upgrades required by a council at later date.

Similarly, where there are identified areas for safety improvements/upgrades, these will be driven by observations from the site inspection and or road geometry compliance in accordance with Austroads Guide to Road Design Part 3: Geometric Design for estimated project traffic volumes.

A balanced approach is warranted.

3.2 Dilapidation and consumption

3.2.1 Growth rate

The design of pavements and the estimation of ESA includes a cumulative growth factor to accommodate ongoing traffic growth, including from specific developments. Specific growth rates are based on historical information or nominated allowances by a road authority, and on rural roads the growth rate applied is typically 1% to 2%. At these levels, this can equate to approximately 15% to 25% of the total pavement design ESA.

Any allowance for specific projects within a growth rate is rarely defined. However, it seems reasonable to consider a project within this growth rate being broadly consistent with the design and having a negligible impact on a pavement's function. A possible consideration could be 5% to 15% of total design ESA as being accommodated within the design intent. Obviously this needs to be considered in a broader context and cumulative effects from multiple developments would lower this consideration.

Beyond an agreed "grace" ESA, contributions could then be determined on a part, or full rate of contribution of the proportion attributed to a project.

3.2.2 Combining Stages 3B and 3C.

Depending on pavement condition and project ESAs, it could be agreed that construction (dilapidation) and operation use (consumption) be combined to an overall ESA and contributions be made on the total, rather than dilapidation repaired then ongoing funding be based on operational use. This could be a suitable funding mechanism in a range of situations, with an obvious example being where an existing pavement is in poor condition and repairing to pre-construction condition is not feasible.

3.3 Costs

3.3.1 Pavement specific

For the purposes of mine contributions, ongoing costs are for pavement management activities only. Costs related to ongoing activities for the general maintenance of the road environment should not be included as councils would undertake these regardless of road use and geometry. Such activities include, but are not limited to, vegetation management, mowing and street sweeping.

3.3.2 Source

Councils should be able to transparently confirm costs for the maintenance of their road network to frame the dollar values of contributions, consistent with the frequency and nature of work as defined in their Asset Management Plan (AMP). If these costs were not available, or for good reason weren't relevant, suitably qualified professional consultants, or contractors would be appropriate sources of valid information.

4. Case studies

The following case studies are presented to provide explanation and clarity of the application of the framework developed in Section 2. The examples have been chosen because of the data being available, and are not intended to provide any opinion or comment on the development or assessment of the projects. The examples are not to be used as a basis or re-assessment or reconsideration of any works or funding arrangements. Assumptions made are only for the purposes of demonstration, including frequency and cost of pavement management activities.

4.1 Wybong Road, Muswellbrook

Wybong Road is currently used by Glencore's Mangoola Mine, and is within the Muswellbrook Shire Council LGA. This case study re-visits the initial planning and development of the mine, that utilises Wybong Road as the primary access from the township of Muswellbrook. Wybong Road was originally a narrow, low volume trafficked road, that was upgraded by the mine over approximately 6.5 km. The nature of VPA with Council, and the specific provisions for road funding is not known.

The basis of this example, and data used, was from the following project documents:

- Existing traffic data: *Geotechnical Investigation for Proposed Road Widening, Wybong Road, 98-PBH-540-1000-REP-9139, May 2008. Parsons Brinkerhoff*
- Existing and proposed road cross section*: Wybong Road design drawings, 98-PBH-540-1000-C-0060. Parsons Brinkerhoff*
- Design traffic and pavement design parameters*: Wybong Road East Pavement Investigations, July 2013. GHD*

Worked example – Wybong Road

3A **Assess existing cross section against Austroads Guide to Road Design Part 3: Geometric Design based on projected AADT.**

Table 4.5 of AGRD03 nominates the road cross section for AADT of 500 vpd consists of 2 x 3.1 m traffic lanes, 1.5 m total shoulder width, 0.5 m minimum shoulder seal for a total carriageway width of 9.2 m.

The existing road cross section consisted of 6.1 to 6.5 m wide pavement seal with minimum total width of 5.8 m.

The road cross section is therefore not sufficient for the existing road traffic.

Table 4.5 of AGRD03 nominates the road cross section for AADT of 1052 vpd consists of 2 x 3.5 m traffic lanes, 2.0 m total shoulder width, 1.0 m minimum shoulder seal for a total carriageway width of 11.0 m.

The road cross section is therefore not sufficient to cater for the proposed road traffic and required upgrading. For this example, Council and the proponent agreed to an upgraded cross section consisting of 2 x 3.25 m wide travel lanes, 1 m wide sealed shoulder for a total pavement width of 8.5 m.

3A **Obtain existing and proposed AADT and proportion heavy vehicles from Traffic and Transport Study.**

	AADT (vpd)	% heavy vehicle
Existing	500	4%
Design (Proposed)	1052	8.6%

Worked example – Wybong Road

3C 1 & 2

Calculate the equivalent standard axles (ESA) during the specified period using traffic volume estimates in accordance with Equation 14 of *Austroads Guide to Pavement Technology Part 2: Pavement Structural Design.*

Obtain existing road pavement ESA from council or in the absence of information calculate using equation 14 of AGPT02 using existing traffic volume counts.

	AADT (vpd)	% heavy vehicle	Growth rate (%)	Design life (years)	ESA
Design (Proposed)	1052	8.6	2	30	1,690,000
Existing	500	4	2	20	225,000 (335,000)[1]

Note: 1. Figure in brackets is the ESA factored by the ratio of project design life to existing pavement design life (30/20 = 1.5) to account for the variance in pavement design life and project operation timeframe.

3C 3

Determine the proportional pavement life consumed in terms of ESA between existing and proposed traffic volumes (Step 1 and 2).

	Existing	Design (Proposed)	Difference	Difference (%)
ESA	335,000	1,690,000	1,355,000	404
%	19.9	100	80.1	

3C 4

Establish materiality of the consumption. A risk profile of pavement consumption for each road and or segment, based on percentage of life consumed (step 3). The risk profile will vary from project to project based on the pavement life consumed. If mine consumption was within the allowance for growth in the road's pavement design, it is expected there would be no contribution.

The difference in existing and proposed ESA volumes for Wybong Road is significant and indicates that the nature/function of the road has changed requiring upgrade to cater for proposed traffic volumes.

Prior to project commencement Wybong Road was required to be upgraded, funded by the proponent.

3C 5

Develop cost estimates for pavement consumption and any safety improvements, based on council supplied cost data or as undertaken by an experienced independent professional organisation

If the ongoing maintenance of the road is to be proportioned based on usage. As the pavement was upgraded prior to project commencement the design ESA was 1,690,000. The existing traffic on the road prior to project commencement was 335,000 ESA meaning the council are responsible for funding 19.9% (335,000/1,690,000) of total costs for ongoing maintenance for the road. The proponent is therefore liable for the remaining 80.1%, which is the traffic directly related to the mine.

Worked example – Wybong Road

For the purposes of this example and accounting for life cycle costs the following has been allowed for over the course of the project life (in the absence of specific Council information).

- Years 7, 14 & 27 – reseal ($75,000 per km)
- Year 20 – reconstruction ($500,000 per km)
- Total life cycle cost per km is therefore $725,000 per km

Given the segment of road that is subject to VPA contributions is 6.5 km the total life cycle costs of this pavement is equal to $4,712,500. (Say $5 M for simplicity in this example)

Based on the contribution percentages derived above the contributions for each stakeholder are as follows.

	Council	Council Costs	Proponent	Proponent Costs
Costs (total $5M)	19.9%	$1M	80.1%	$4M (1)

Note (1): On the basis that the mine operates for the 30 year period of the pavement life cycle.

The proponent is to contribute 80.1% of the total life cycle costs of the pavement which for the length of project works out to be $615,000 per kilometre or approximately $135k per year for the life of the mine. $135k being the pro-rata yearly rate over 30 year pavement life

Appendices

Appendix A – Interim VPA negotiation process v1.1

Content

GHD

Level 3 GHD Tower 24 Honeysuckle Drive Newcastle NSW 2300
PO BOX 5403 Hunter Region Mail Centre NSW 2310
T: 61 2 4979 9999 F: 61 2 4979 9988 E: ntlmail@ghd.com

2218439-47264/https://projects.ghd.com/OC/Newcastle/nswmcroadscontributi/Delivery/Documents/2218439-REP-A-Roads Contribution Framework.docx

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	L.Schneider	P.Youman		S.Jamieson		19/10/2018

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