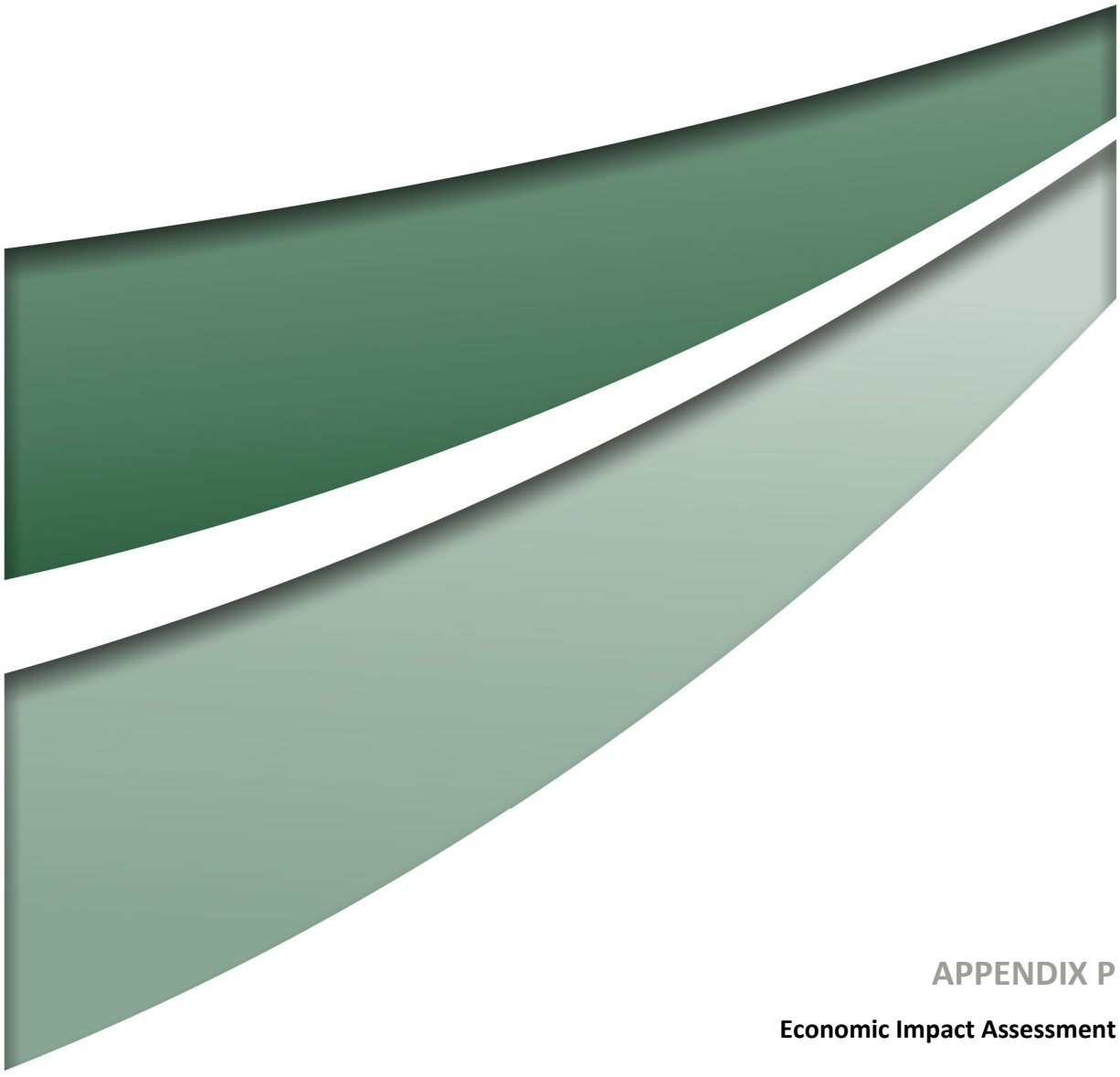

APPENDIX P

Economic Impact Assessment

Economic impact assessment of Martins Creek Quarry

Final Report

Umwelt (Australia) Pty Limited

19 March 2021

Building a better working world

Notice

Ernst & Young was engaged on the instructions of Umwelt (Australia) Pty Limited ("Client") to perform an economic impact assessment in relation to the proposed Martins Creek Extension Revised Project ("Revised Project"), in accordance with the engagement agreement dated 6 August 2019.

The results of Ernst & Young's work, including the assumptions and qualifications made in preparing the report, are set out in Ernst & Young's report dated 19 March 2021 ("Report"). The Report should be read in its entirety including this notice, the transmittal letter, the applicable scope of the work and any limitations. A reference to the Report includes any part of the Report. No further work has been undertaken by Ernst & Young since the date of the Report to update it.

Ernst & Young has prepared the Report for the benefit of the Client and has considered only the interests of the Client. Ernst & Young has not been engaged to act, and has not acted, as advisor to any other party. Accordingly, Ernst & Young makes no representations as to the appropriateness, accuracy or completeness of the Report for any other party's purposes.

No reliance may be placed upon the Report or any of its contents by any party other than the Department ("Third Parties"). Any Third Party receiving a copy of the Report must make and rely on their own enquiries in relation to the issues to which the Report relates, the contents of the Report and all matters arising from or relating to or in any way connected with the Report or its contents.

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Building a better working world

Barbara Crossley
Umwelt (Australia) Pty Limited
75 York St
Teralba NSW 2284

Economic impact assessment of the Martins Creek Quarry Extension Project

Dear Barbara,

In accordance with our Engagement Agreement dated 6 August 2019 ("Agreement"), Ernst & Young ("we" or "EY") has been engaged by Umwelt (Australia) Pty Limited ("you", "Umwelt" or the "Client") to provide economic impact assessment services (the "Services") in relation to the proposed Martins Creek Quarry Extension Project (the "Revised Project").

The enclosed report (the "Report") sets out the outcomes of our work. You should read the Report in its entirety. A reference to the report includes any part of the Report.

Purpose of our Report and restrictions on its use

Please refer to a copy of the Agreement for the restrictions relating to the use of our Report. We understand that the Report will be used for the purpose of outlining the economic impact of the Revised Project to NSW (the "Purpose").

This Report was prepared on the specific instructions of Umwelt solely for the Purpose and should not be used or relied upon for any other purpose.

This Report and its contents may not be quoted, referred to or shown to any other parties except as provided in the Agreement. We accept no responsibility or liability to any person other than to Umwelt or to such party to whom we have agreed in writing to accept a duty of care in respect of this Report, and accordingly if such other persons choose to rely upon any of the contents of this Report they do so at their own risk.

Nature and scope of our work

The scope of our work, including the basis and limitations, are detailed in our Agreement and in this Report.

Our work commenced on 20 April 2020 and our research was completed and drafting of the report commenced on 12 October 2020. Therefore, our Report does not take account of events or circumstances arising after 12 October 2020 and we have no responsibility to update the Report for such events or circumstances.

In preparing this Report we have considered and relied upon information from a range of sources believed to be reliable and accurate. We have no reason to believe that any information supplied to us, or obtained from public sources, was false or that any material information has been withheld from us. Further, we have been provided with various assessments and reports undertaken and prepared by other consultants and advisors. We have included extracts from those assessment and reports purely to present the key findings of those assessments and reports. Neither our scope nor we have undertaken a review of such assessments and reports to ascertain their suitability or accuracy.

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Therefore, we do not take any responsibility or liability for the contents extracted from such assessments and reports and included in this Report.

We do not imply and it should not be construed that we have verified any of the information provided to us, or that our enquiries could have identified any matter that a more extensive examination might disclose.

The work performed as part of our scope considers information provided to us and a combination of input assumptions relating to future conditions, which may not necessarily represent actual or most likely future conditions. Additionally, modelling work performed as part of our scope inherently requires assumptions about future behaviours and market interactions, which may result in forecasts that deviate from future conditions. There will usually be differences between estimated and actual results, because events and circumstances frequently do not occur as expected, and those differences may be material. We take no responsibility that the Revised Projected outcomes will be achieved.

We highlight that our analysis and Report do not constitute investment advice or a recommendation to you on a future course of action. We provide no assurance that the scenarios we have modelled will be accepted by any relevant authority or third party.

Our conclusions are based, in part, on the assumptions stated and on information provided by Umwelt and other information sources used during the course of the engagement. The modelled outcomes are contingent on the collection of assumptions as agreed with Umwelt and no consideration of other market events, announcements or other changing circumstances are reflected in this Report. Neither Ernst & Young nor any member or employee thereof undertakes responsibility in any way whatsoever to any person in respect of errors in this Report arising from incorrect information provided by Umwelt or other information sources used.

This letter should be read in conjunction with our Report, which is attached.

Thank you for the opportunity to work on this Revised Project for you. Should you wish to discuss any aspect of this Report, please do not hesitate to contact Nicolas Anjinho on 0423 003 740.

Yours sincerely

Steve Brown
Partner

Table of contents

Executive summary

Executive summary

Buttai Gravel Pty Ltd (part of the Daracon Group of entities) (Daracon) has operated the Martins Creek Quarry (MCQ) since December 2012, which includes a deposit of durable Tuff hard rock product (referred to locally as Andesite). Operations at the MCQ are currently undertaken in accordance with the approval limits identified by the NSW Court of Appeal as being applicable to the operation and Environmental Protection Licence (EPL 1378)[1] issued under the *Protection of the Environment Operations Act 1997* (Approved operations).

Daracon is proposing to modify the Approved operations at the MCQ by extending the quarry operations in both the East Pit and West Pit areas (the Revised Project). The Revised Project is a State Significant Development under the Development Application number SSD 6612. According to information supplied by Daracon, the Revised Project will allow for an increase in production of aggregates, roadbase, ballast, general fill, manufactured sands, precoats, gabion and other specified materials to up to 900 thousand tonnes per annum on average, for up to 25 years.

The analysis

This report provides an Economic Impact Assessment (EIA) for the Revised Project and follows the economic assessment framework set out in the *Guidelines for the economic assessment of mining and coal seam gas proposals* (the Guidelines) released by the New South Wales (NSW) Government in December 2015.

Consistent with the Guidelines, the EIA includes a Cost Benefit Analysis (CBA) and a Local Effects Analysis (LEA). The CBA provides an estimate of the potential net benefits of the Revised Project to NSW. The LEA is based on analysis for the Lower Hunter region as defined by the Australian Bureau of Statistics Statistical Area Level 3 (SA3).

Daracon and Umwelt provided EY with the information required to complete an economic analysis of the Revised Project. This data includes the Revised Project physicals to estimate operating costs and the costs to mitigate any environmental impacts.

Daracon has assessed that the Revised Project will also generate additional employment, as Daracon anticipates that the Revised Project will employ additional labour to conduct operations and require supervisor, administration officer and safety officer roles.

Results of the CBA

The Revised Project is estimated to provide a potential net benefit to NSW of $58 million in net present value (NPV)[2] terms, as shown in Figure 1. This net benefit is comprised of $19 million in NPV terms and $39 million in NPV terms in direct and indirect benefits, respectively. Indirect costs of the Revised Project not captured as operational or capital costs (externalities) are negligible.

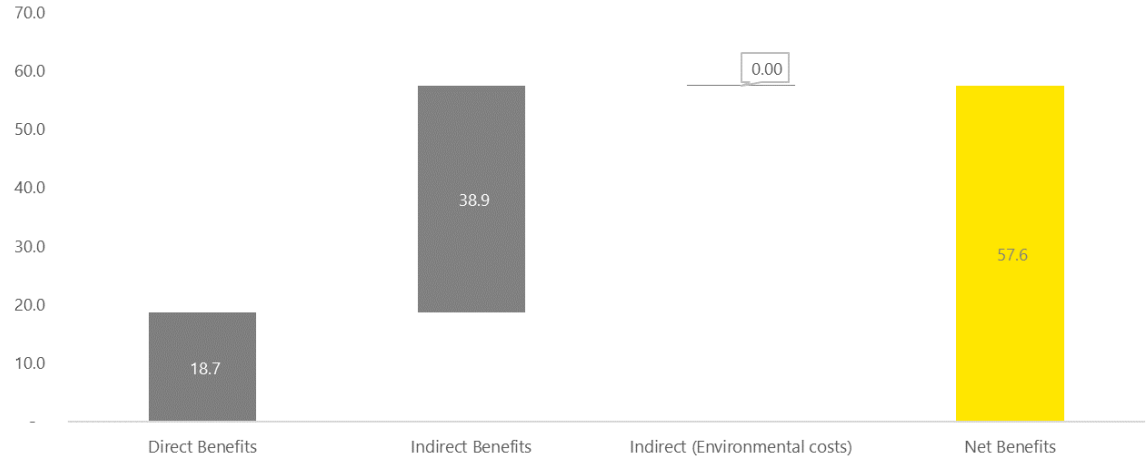
The ***direct benefits*** of the Revised Project are based on central case assumptions of additional capital expenditure and weighted average real prices of $25 AUD per tonne of output delivered via road and $22 AUD per tonne delivered by rail.[3] This results in additional corporate taxes of $11.5 million in NPV terms for Australia, of which $3.7 million is attributed to NSW. The net producer surplus attributed to NSW is $13.5 million in NPV terms. Moreover, an additional $1.5 million in NPV terms is paid in payroll tax.

[1] Hunter Industrial Rental Equipment Pty Ltd v Dungog Shire Council [2019] NSWCA 147.

[2] All NPV figures in this report are given in 2020 Australian dollars based on a 7 per cent real discount rate, as outlined in the Guidelines, over a 25-year period (unless otherwise stated).

[3] Price assumptions are detailed in Section 2.1 of this report. Prices have been estimated on the basis of actual sales data at the Martins Creek Quarry over the last four years of operations.

Figure 1: CBA summary of potential net benefits under central case assumptions, ($ million NPV)



Source: EY analysis based on the Environmental Impact Statement and information provided by Daracon.

The ***indirect benefits*** of the Revised Project are the result of increased production requiring higher levels of inputs provided by NSW suppliers. Supplier benefits are estimated to be $26.2 million in NPV terms based on total supplier inputs of $129.4 million in NPV terms over the life of the Revised Project. Benefits to workers are estimated to be $12.8 million in NPV terms over the 25-year lifespan of the mine.

The ***indirect costs*** are related to the costs borne by the NSW community which are externalities and not captured as operational costs. The only externalities identified for the Revised Project are those associated with additional greenhouse gas emissions ($500 in NPV terms). As outlined in the body of this report, other environmental costs are included in the operational costs of the Revised Project.

Consistent with the Guidelines, systematic sensitivity analysis of the estimated net benefit is undertaken in this report. This sensitivity analysis shows that the estimated potential net benefits are robust as they remain positive after testing all key assumptions underpinning the analysis.

In isolation, the estimated net benefit of the Revised Project is most sensitive to the price assumptions. However, even assuming prices are 25 per cent lower than under the central case assumptions, the net benefits are estimated at $29 million in NPV terms. The lower bound estimate of potential net benefits, which takes a pessimistic assumption around prices, operational expenditure as well as supplier benefits, yields an estimated potential net benefit of $5 million in NPV terms. The upper bound estimate of potential net benefits, based on the most optimistic assumptions, is $105 million in NPV terms.

Results of the LEA

The LEA considers the costs and benefits of the Revised Project to residents of the Lower Hunter region of NSW. The analysis shows an estimated potential net benefit of $35.4 million to the region in NPV terms over the life of the Revised Project, well over half of the total benefit estimated to NSW. This is largely driven by benefits to local suppliers, based on information from Daracon that 100 per cent of the inputs to production are supplied from the region. In fact, the net benefit to local suppliers is estimated to be about $26.2 million in NPV terms. There is an estimated additional benefit of $9.2 million in NPV terms to local workers over the life of the Project.

Again, the report shows that the estimated benefits to the Lower Hunter Region under the sensitivity analysis conducted with a lower bound estimate for potential net benefits of $30.4 million and upper bound estimate of $38 million in NPV terms.

1. Introduction

Martins Creek Quarry (MCQ) is an existing hard rock quarry situated within the Dungog Local Government Area (LGA), approximately 7 kilometres (km) north of Paterson and 28 km north of Maitland, New South Wales (NSW) (refer to Figure 2). Hard rock extraction has been carried out at the MCQ since 1914. Buttai Gravel Pty Ltd, which is part of the Daracon Group (Daracon), has operated the MCQ since December 2012. Daracon is a family-owned NSW company head quartered in the Hunter Valley town of Beresfield.

The quarry products are primarily derived from a deposit of Latite Tuff material which is referred to locally as Andesite.

On 24 September 2019, the quarry was placed into a limited operation based on the approved parameters in line with judgment by the Court of Appeal.

In 2014, Daracon submitted a development application for the Martins Creek Quarry Extension Project. The development application is being assessed as a State Significant Development (SSD) (application number SSD 6612), requiring approval under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

This initial application sought approval for the consolidation of the existing development approvals and the expansion of the quarry into new areas to extract and haul by road transport up to 1.5 million tonnes of material per annum over a 30 year period (Monteath & Powys, 2014) (hereafter referred to as the Original Project).

Following detailed analysis of the EIS submissions and consultation, Daracon committed to key design changes and additional mitigation and management measures to minimise the Project's environmental and social amenity impacts. This included reductions in the proposed extraction limits, quarry operating hours and truck movements.

Following community engagement and feedback during 2018 and 2019, and the change to quarry operations in September 2019, Daracon has undertaken further quarry planning and design activities to optimise the use of the existing resource and minimise environmental and community impacts. As a result, the Revised Project now includes a number of additional amendments, including further reductions in road transportation volumes, peak hourly truck movements, operational hours, as well as a reduction in the Project disturbance footprint by avoiding approximately 15.3 ha of native vegetation in the former East Pit (Lot 21 DP 773220).

EY was commissioned by Umwelt (Australia) Pty Limited (Umwelt) to undertake an Economic Impact Assessment (EIA) of the Revised Project. This EIA is based on a Cost Benefit Analysis (CBA) and local effects analysis (LEA) prepared under the framework established in the Guidelines for the economic assessment of mining and coal seam gas proposals (the Guidelines) released by the New South Wales (NSW) Government in December 2015.[4] The CBA requires an assessment of the potential net benefits that accrue to the proponent, government, workers and suppliers of the Revised Project.

This EIA was prepared by EY to inform the Revised Project's Amended Development Application and Response to Submissions (ADA and RTS).

In addition, the Guidelines require an estimate of the potential costs generated by the Revised Project. These costs may include residual public infrastructure costs and environmental, social and transport-related costs. To estimate the environmental, social and transport-related costs, the

[4] New South Wales Government (2015).

analysis has had regard to the *Technical Notes supporting the guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals*.[5]

The CBA presented in Chapter 2 measures the potential net benefits of the Revised Project to the NSW community. The LEA, which focusses on the benefits accruing to the region (the Lower Hunter Statistical Area, as defined by the Australian Bureau of Statistics), is presented in Chapter 3.

The Revised Project

Figure 2: Martins Creek Quarry Site

Source: Umwelt

The key features of the Revised Project include:

- extraction of approximately 22m tonnes of quarry product material over 25 years, transporting up to 500,000 tpa by road and up to 600,000 tpa by rail
- a revision of the product transport arrangements, which included:
  - reduced peak daily laden trucks of 140 per day (280 movements) and a peak of 20 laden trucks per hour (40 movements), Monday to Friday

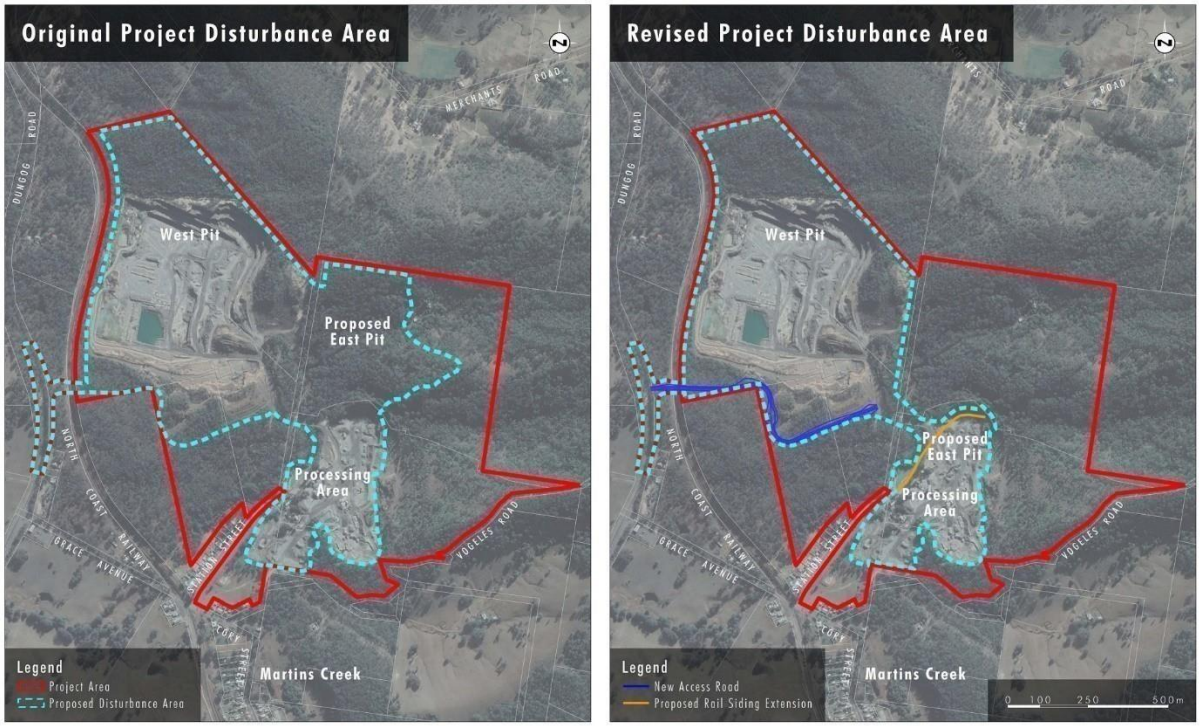
[5] Department of Planning and Environment (2018).

    - no road haulage of quarry product on Saturday
    - no trucks through Paterson Village before 6.45 am
    - increased quarry product transported by rail
    - removal of Haul Route 2 as a primary haul route (now proposed only to service local jobs as required)
- revised operating hours of 7.00 am to 6.00 pm Monday to Saturday, with the exception of road haulage of quarry product, which will only occur Monday to Friday. No evening or night operation, apart from rail loading and transportation, and necessary maintenance activities
- reduction in the proposed disturbance area, avoiding approximately 15.3 ha of undisturbed vegetation in the former East Pit (Lot 21 DP 773220)
- construction and use of a new access road and bridge crossing from Dungog Road, over the North Coast rail line, to allow for all heavy vehicle movements via the new access
- improvements at the Dungog Road and Gresford Road intersection and the King Street and Duke Street intersection (within the village of Paterson)
- upgrades to the approach to Gostwyck Bridge
- extension of the rail spur to facilitate longer trains to transport more quarry product
- establishment of noise bunds and noise attenuation of the existing fixed processing plant with further upgrades and replacements to reduce noise and air quality impacts
- progressive rehabilitation of the site.

The quarry is expected to produce a number of key products. The production mix may consist of aggregates, ballast, general fill, manufactured sands, aggregate precoat, road base materials, as well as sized rock and gabion.

The Environmental Impact Statement (EIS) for the Original Project was publicly exhibited in late 2016 (Monteath & Powys, 2016). Key proposed changes to the quarry are summarised in Appendix C. The revised project footprint and proposed quarry areas are shown in Figure 3.

Figure 3: Proposed expansion



Source: Umwelt

2. Cost-benefit analysis

The Guidelines set out the CBA framework to measure the potential net benefits of the Revised Project to the NSW community. Table 1 provides a summary of the Guidelines as to how these benefits are measured.

Table 1: Cost Benefit Analysis framework as defined in the Guidelines

Direct benefits	Indirect benefits	Indirect costs
The net benefits that accrue to NSW from the direct operations of the proposed mine	The net benefits that are generated for parties that economically interact with the proposed mine	Social costs generated by the proposed mine, borne by the NSW community
Includes: ► Net producer surplus attributable to NSW ► Royalties payable ► Company tax attributable to NSW	Includes: ► Net economic benefits to landowners ► Net economics benefits to NSW employees ► Net economic benefits to NSW suppliers	Includes: ► Net environmental, social and transport-related costs ► Net public infrastructure costs ► Loss of surplus to other industries

Source: New South Wales Government (2015).

The data inputs for the analysis presented in this report are derived primarily from:

- Financial and other information provided by Daracon, which includes the Revised Project physicals, saleable products by type and capital costs and employment.
- Assessment findings arising from the environmental assessment for the ADA prepared by Umwelt and various environmental technical consultant reports including the:
  - *Martins Creek Quarry Groundwater Impact Assessment* by Australasian Groundwater and Environmental Consultants Pty Ltd (AGE)
  - *Biodiversity Assessment Report prepared for Martins Creek Quarry Extension Project* by Conacher Consulting
  - *Air Quality Impact Assessment for Martins Creek Quarry* by Jacobs
  - *Visual Impact Assessment (section of the ADA and RTS)* by Umwelt
  - *Martins Creek Quarry Traffic Impact Assessment* by SECA Solution
  - *Surface Water Impact Assessment – Martins Creek Quarry Extension Project* by Umwelt
  - *Greenhouse Gas and Energy Assessment – Martins Creek Quarry Extension Project* by Umwelt
  - *Noise Impact Assessment – Martins Creek Quarry Extension Project* by Umwelt
  - *Heritage Impact Statement – Martins Creek Quarry Extension Project* by Umwelt
  - *Martins Creek Quarry Blasting Impact Assessment* by Peter Bellairs Consulting Pty Ltd.
- *Energy & Metals Consensus Forecast*, September 2020, Consensus Economics.
- *Resources and Energy Quarterly* (September 2020), Office of Chief Economics, Department of Industry, Innovation and Science.

- Various data from the Australian Bureau of Statistics (ABS) including the most recent Census data.

The information underpinning this assessment is therefore a combination of publicly available information and commissioned expert studies assessing the environmental impacts of the Revised Project.

EY has not verified the information obtained from public sources as well as the information included in the studies provided as they have been prepared by relevant experts in the field. Where there is uncertainty around key assumptions, sensitivity analysis has been conducted to test the robustness of the assessment to these key assumptions.

2.1 Project economics

The following analysis sets out the key data and assumptions underpinning the Revised Project, including the capital expenditure, the output and price assumptions, and the operating cost assumptions, including intermediate inputs. These assumptions are used to estimate the potential direct and indirect benefits to NSW and form the basis of the LEA presented later in the Report.

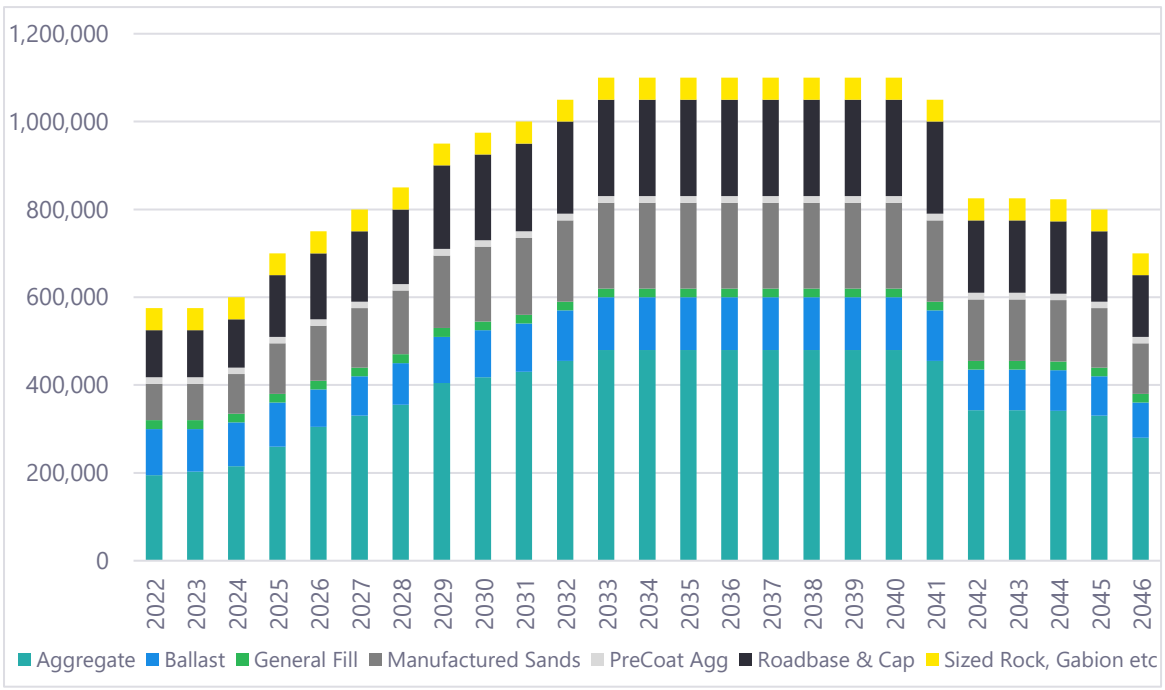
Capital costs

Daracon advises that the Revised Project will require additional start-up capital expenditure. Daracon has determined that the start-up capital required for the Revised Project will be $18.3 million to be paid in the first one to three years of the Project. This will be used to upgrade road intersections, build a bridge over the rail line, build a new quarry access road, build new site facilities and upgrade the existing plant. This start-up capital expenditure is depreciated on a straight-line basis over the life of the Revised Project. Note that there will also be a biodiversity offset payment, estimated at around $6.6 million, and EIS and DA costs of $1 million.

Production assumptions

In net terms, the Revised Project is forecast to generate up to 1.1Mtpa and average approximately 900,000t of output per year. As can be seen in Figure 4, the majority of this comes from the production of aggregates, with an average output over the life of the Revised Project of approximately 380,000t per year.

Figure 4: Central case assumptions - production quantities (tonnes)



Source: Data provided by Daracon

Price assumptions

The prices that are used for the analysis have been broken down by product for road and rail delivery. These are commercially sensitive and have been redacted, but include:

- Aggregate
- Ballast
- General Fill
- Manufactured Sands
- Aggregate PreCoat
- Roadbase & Cap
- Sized Rock, Gabion etc.

For each product, the price is the same in each year between 2022 and 2046. The price, however, does differ for roadbase, as well as sized rock and gabion, depending on the method used to transport the product (road or rail). These price assumptions are based on information provided by Daracon and have not been independently verified by EY.[6] The weighted average price per tonne for road is approximately $25 AUD and for rail is approximately $22 AUD.

Projected revenue and Project financials

Based on the production assumptions outlined in Figure 4 and the real price assumptions considered above, the Revised Project is expected to generate additional real revenue of just under $540 million over the life of the Revised Project in undiscounted 2020 Australian dollars. This equates to $224.4 million real revenue in NPV terms based on a 7 per cent real discount rate as shown in Table 2. The revenue profile for each product is highlighted in Figure 5. In the context of this analysis, these are deemed to be central case assumptions, and subject to sensitivity analysis presented later in this report.

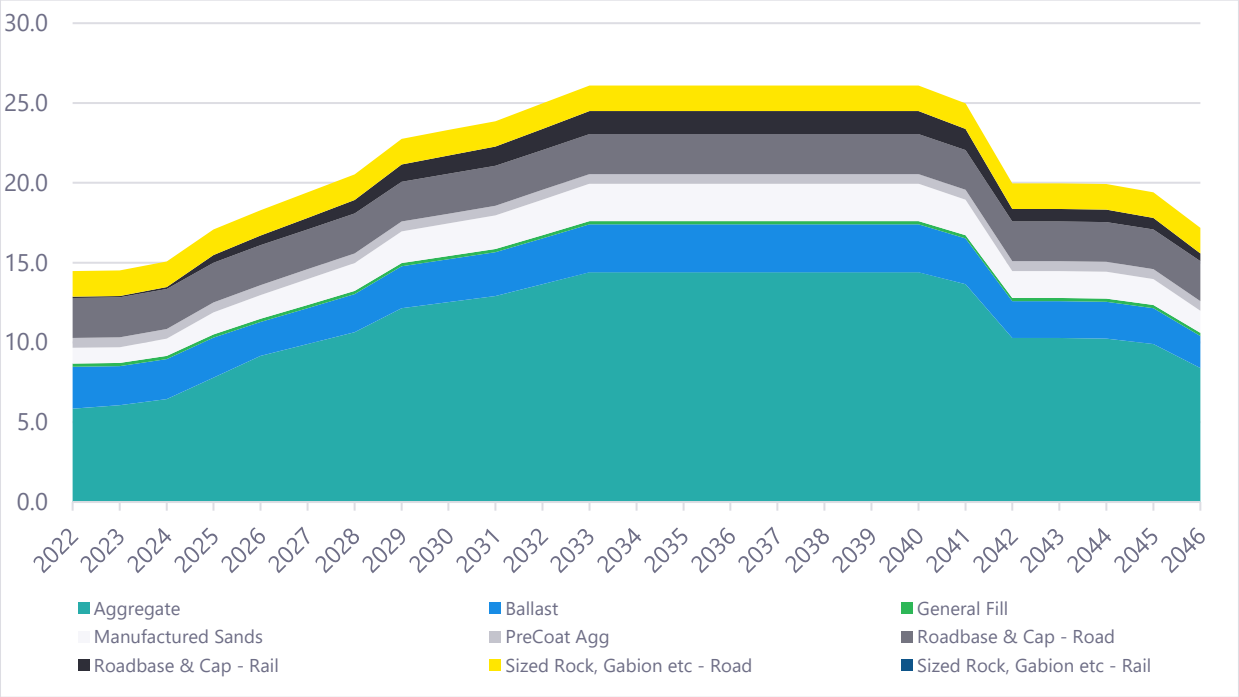
Table 2: Central case assumptions - annual and total revenue over life of the Revised Project, ($ million, real 2020 AUD)

Product	Total	NPV	2022	2030	2040	2046
Aggregate	$281.6	$114.7	$5.9	$12.5	$14.4	$7.7
Ballast	$65.2	$28.3	$2.6	$2.7	$3.0	$1.9
General Fill	$5.0	$2.2	$0.2	$0.2	$0.2	$0.2
Manufactured Sands	$46.1	$18.8	$1.0	$2.0	$2.3	$1.3
Aggregate PreCoat	$15.4	$6.7	$0.6	$0.6	$0.6	$0.6
Roadbase & Cap	$86.0	$36.2	$2.6	$3.6	$3.9	$2.9
Sized Rock, Gabion etc	$40.0	$17.4	$1.6	$1.6	$1.6	$1.6
Total Sales Revenue	$539.3	$224.4	$14.5	$23.3	$26.1	$16.1

Source: Daracon

[6] Prices have been supplied by Daracon and estimated on the basis of actual sales data at the Martins Creek Quarry over the last four years of operations.

Figure 5: Revenue associated with products ($ million, real 2020 AUD)



Source: EY Analysis based on information provided by Daracon

Based on information provided by Daracon, the incremental operating costs of the Revised Project are summarised in Table 3. Total operating costs are estimated at $423.1 million ($177.8 million in NPV terms).

The operating costs have been estimated using information provided by Daracon and these costs have not been independently analysed by EY. Daracon provided information on the cost of labour, production, sales, overheads, as well as other variable and fixed costs. These operating costs are highlighted in Table 3.

For each type of cost, the annual amounts are the same for every year between 2022 and 2046, apart from the costs associated with clear and strip overburden. Here, the costs associated with clear and strip overburden are zero in every year apart from 2022, 2027 and 2032. In 2022, the clear and strip overburden costs are estimated at $1.5 million, decreasing to approximately $0.2 million in years 2027 and 2032 respectively.

Table 3: Central case assumptions - operating costs, ($ million, real 2020 AUD)

	Total	Annual cost, 2022 - 2046
Direct Labour	$39.9	$1.6
Clear & Strip Overburden	$1.9	$0.1
Drill & Blast	$37.4	$1.5
Load & Haul	$52.8	$2.1
Crushing & Screening	$66.9	$2.7
Stockpiling	$19.1	$0.8
Stabilstone and Roadbase	$24.4	$1.0
PreCoat	$2.0	$0.1
Sales/Load/Despatch	$16.7	$0.7
Other Direct Variable Costs (including road maintenance contributions)	$82.5	$3.3

	Total	Annual cost, 2022 - 2046
Other Fixed Costs	$32.1	$1.3
Division Overheads	$9.7	$0.4
Corporate Overheads	$37.8	$1.5
Total operating costs	$423.1	$16.9
Total operating costs – NPV	$177.8	

Source: Daracon

Based on this data, the Revised Project is estimated to generate $28.3 million in potential profit in NPV terms. These are deemed to be central case assumptions, and subject to sensitivity analysis. Table 4 shows these central case assumptions.

Table 4: Central case assumptions – Revised Project financials ($ million, real 2020 AUD)

	NPV	2022	Average 2023-2046
Revenue	$224.4	$14.5	$21.9
Residual value of capital	$0.0	$0.0	$0.0
Total Revenue	$224.4	$14.5	$21.9
Operating costs	$177.8	$13.9	$17.1
Capital Depreciation	$12.8	$11.2	$0.3
Other*	$5.5	$0.9	$0.3
Total costs	$196.1	$26.0	$17.7
Operating Profit	$28.3	-$11.6	$4.2

*Note: *Other includes: Financing costs, Royalties, decommissioning, rehabilitation, management, monitoring and mitigation costs*

Source: EY analysis based on information provided by Daracon.

2.2 Direct benefits

Net producer surplus attributable to NSW

Consistent with the Guidelines, the net producer surplus of the Revised Project represents the private benefit, or operating surplus, generated that is attributable to NSW.

The Revised Project is estimated to potentially generate an operating surplus of $13.5 million in NPV terms (see Table 5). The operating surplus is estimated using cash earnings and cash cost, with cash costs made up of both capital expenditure and operating costs (excluding depreciation). As outlined in the section below, $11.5 million in NPV terms is payable in the form of corporate taxes, leaving a net producer surplus of $13.5 million in NPV terms.

Table 5: Central case - estimate of potential net producer surplus attributable to NSW ($ million, real 2020 AUD)

Key data	NPV
Total revenue	$224.4
Total cash costs[7]	$210.9
Operating surplus	$13.5
Company tax	$11.5

[7] Total cash costs include company tax of $11.5 million (in NPV terms) based on a 30 per cent company tax rate which has been assumed for all company tax figures referenced in this report.

Net Producer Surplus	$13.5
NSW share of Project ownership	100%
Value of net producer surplus attributable to NSW	$13.5

Source: EY analysis based on information provided by Daracon.

Company tax attributable to NSW

Consistent with the Guidelines, the company tax payments made to the Australian Government are levied on the profits generated for the Revised Project as summarised in Table 6. A company tax rate of 30 per cent[8] is assumed to estimate the tax payments made to the Australian Government under the assumption that all the profit generated by the mine is subject to company tax in Australia. The actual company tax payable will depend on a range of factors. For example, in years when tax may not be paid due to past losses or other write-offs, the profits will reduce these reductions in later years, and therefore reflect a net positive in comparison to the base case. In the case of financing costs, deductions for interest still represents income for financiers which is taxable.

Consistent with the Guidelines, company tax attributable to NSW is based on the State's share of the national population (32 per cent).[9]

As summarised in Table 6, it is estimated the Revised Project will potentially generate $28.3 million in total profit in NPV terms over the period 2022 to 2046. At a company tax rate of 30 per cent, the company tax estimate is $11.5 million in NPV terms, of which $3.7 million is attributable to NSW.

Table 6: Central case - company income tax attributable to NSW ($ million, real 2020 AUD)[10]

Company tax attributable to NSW	NPV
Total profit	$28.3
Company tax	$11.5
NSW Share[11]	$3.7

Source: EY analysis based on information provided by Daracon.

Payments to the NSW Government

Daracon advises that there are no net additional Council rates associated with the Project (i.e. Council rates would be payable irrespective of whether or not the Project proceeds. The Revised Project will result in an annual payment of $135,000 in payroll tax over the 25 years. Therefore, over the life of the Revised Project, a total of $1.5 million in NPV terms of payments to the NSW Government, as shown in Table 7.

Table 7: Central case - total payments to State government ($ million, real 2020 AUD)

Corporations tax paid to NSW	NPV
Payroll tax	$1.5
Total Royalties paid	$0.0
Total Payments	$1.5

Source: EY analysis based on information provided by Daracon.

[8] This information does not constitute tax advice.

[9] New South Wales Government (2015)

[10] Tax figures in this report do not constitute tax advice. EY has not sought tax advice for the purpose of this report. Specific tax information is dependent upon the applicable tax regime.

[11] Based on a 32 per cent population share. Consistent with the Guidelines, company tax attributable to NSW is based on the State's share of the national population (32 per cent) as specified under the Guidelines.

2.3 Indirect benefits to NSW

Benefit to workers

Consistent with the Guidelines, a key factor in determining the benefit to workers are defined as the:

- Wages earned in the quarry
- Minus the opportunity cost of labour for working in the sector, that is compared to working in other sectors (or being unemployed)
- Minus the wage difference due to skills and the disutility to work in the industry.

Daracon provided the full-time equivalent (FTE) employment, as well as the average wages paid per employee. Over the period of the Revised Project, 18 FTE workers will be directly employed each year, resulting in total employment of 450 FTEs (see Table 8). An additional 4 FTE workers will be employed on a contracting basis.

The wage for an FTE employee is $133,276 on average over the life of the Revised Project. These earnings are constant over the life of the Revised Project. The ***total of wages paid*** to employees is estimated at $26.1 million in NPV terms.

Table 8: Central case – wages paid to those employed under the Revised Project

Employees	NPV	Annual, 2022-2046
Employment (FTEs)		18
Average wage ($ per annum^)		$133,276
Total wages paid ($^)	$26,127,673	$2,398,971

*Source: Daracon, ^ Real 2018 Australian dollars. * NPV in 2020 Australian dollars based on a 7 per cent real discount rate.*

To measure the ***opportunity cost*** compared to other sectors, the wages earned by workers were compared to the average wage paid in NSW. This implies that should the approval not go ahead, those who would have been employed by Daracon would find alternative work at the average wage paid in NSW. The average wage across NSW is $67,983 per annum based on Census data, from the Australian Bureau of Statistics - 2016.

Assuming no disutility of working in the quarry, this results in an estimated worker benefit of $12.8 million, in NPV terms, over the life of the Revised Project, as shown in Table 9.

Table 9: Central case – estimated NSW worker benefit

Employees	NPV*	Annual, 2022-2046
Average NSW wage ($ per annum^)		$67,983
Quarry wage ($ per annum^)		$133,276
Total wages based on average wage ($^)	$13,327,503	$1,223,695
Total wages paid ($^)	$26,127,673	$2,398,971
Estimated worker benefit ($^)	$12,800,170	$1,175,276

*Source: Daracon, ABS Census Occupational Total Personal Income (Weekly) by Hours Worked, and EY estimates. ^ Real 2020 Australian dollars. * NPV in 2020 Australian dollars based on a 7 per cent real discount rate.*

As shown, there is a significant premium incorporated in the quarry wages compared with the average wage paid in NSW. There are several likely reasons for this premium that might be explained by relative skill, productivity levels and the number of hours worked per week. In relation to the latter, employees working in the quarry are more productive than workers in other industries as they operate with higher levels of capital (for example, based on capital stock figures produced by the ABS, those in the mining sector work with over 10 times the amount of capital than average employees across Australia). The significant contributing factor to the higher wages of the workers

is the number of hours worked. A quarry worker tends to work 11-12 hours per day and therefore works around a 56 hour work week, not a 35-40 hour work week.

Any metrics around the disutility of working in the quarry are very difficult to ascertain in both an absolute (sector-specific) or relative (compared with other industries) way.

Given the uncertainty in accurately measuring these disutilities, we have assumed the disutility for workers under the project case is zero. However, disutility has been considered in the sensitivity analysis discussed below.

Benefit to suppliers

Consistent with the Guidelines, the economic benefit to suppliers is estimated as the producer surplus generated from goods and services provided from NSW firms to the Revised Project. As summarised in Table 10, the Revised Project is estimated to require $130 million (in NPV terms) in intermediate inputs. Daracon has advised that, currently, almost all the inputs are sourced from NSW-based suppliers.

The estimated economic benefit to suppliers (producer surplus) is based on the EY Regional Input-Output Model (EYRIOM). This model was customised to generate a NSW-specific Input-Output table to not include benefits generated in other Australian states.

The producer surplus estimates are based on Type I multipliers which limit the benefit to direct value added generated by NSW suppliers. This methodology does not account for second round, nor induced consumption effects. Using this relatively conservative technique, the potential total supplier benefits are estimated to be about $26.2 million in NPV terms.

Table 10: Central case – estimated potential supplier benefits

Indirect benefits – suppliers	NPV or %
NSW-sourced intermediate inputs ($ million, NPV)	$129.4
Gross operating surplus ratio (%)	20%
Total benefits to suppliers ($ million, NPV)	$26.2

Source: EY analysis based on information provided by Daracon.

2.4 Indirect costs to NSW

Daracon advises the Revised Project incurs no additional public infrastructure costs or loss of surplus to other industries.

The Revised Project will generate environmental, social and transport-related costs, in addition to those generated by the Approved operations. Table 11 and Table 12 provide a summary of the environmental impacts predicted by the technical assessments undertaken for the Revised Project. The only net additional contributor to indirect costs not captured by operating or capital costs is greenhouse gas emissions (see Appendix A).

All other indirect costs are incorporated into operational or capital costs of the Revised Project. It is noted that some operational and capital expenses mitigate a range of potential impacts associated with the Project and the separation of these costs to specific impacts has not been undertaken. The costs set out in Table 11 and Table 12 below are therefore the NPV of those costs which are directly attributable to the specific impact.

Table 11: Summary of environmental costs ($ million, real 2020 AUD)

Scope of environmental costs	Discussion	NPV
Greenhouse gas emissions	Based on scope 1 and 2 greenhouse gas emissions generated by the Revised Project, as outlined in Appendix A.	0.0005

Table 12: Summary of capex and opex spend to offset environmental costs ($ million, real, 2020 AUD)

Scope of environmental costs	Discussion	NPV
Management, monitoring and mitigation costs		
Air quality	The Revised Project will have little change in air quality beyond the Revised Project Area boundary, for all particulate matter classifications (PM10, PM2.5, TSP and dust deposition), with no exceedances of the EPA criteria at any of the sensitive receiver locations. Daracon is taking steps to reduce the potential air quality impacts through several management and mitigation steps.	0.0
Ambient noise impact	Feasible and reasonable noise controls and management strategies will be applied to mitigate impacts, these are included in capital and operating expenses.	0.5
Surface water	The Revised Project will have a minimal impact on water quality. The operating costs of the quarry include the operation of the currently approved Water Management System (WMS) to reduce the potential impacts of the operations. Costs associated with surface water take are included in annual operational costs.	0.0
Groundwater	Potential groundwater impacts are minimal. Costs associated groundwater take are included in annual operational costs.	0.0
Biodiversity impact	Daracon has advised the costs of fully offsetting biodiversity impacts in accordance with the NSW *Biodiversity Conservation Act 2016* as determined by the BAR. These costs are included in the capital costs and are assumed to be incurred in 2021.	5.8
Road Maintenance Costs	Additional trucks on the road will accelerate the deterioration of roads and increase costs for Dungog Council and Maitland Council. To mitigate costs to these councils, Daracon will contribute to road maintenance costs through a Voluntary Planning agreement with contributions based on tonnes of material hauled by road and travel distance along the primary haul route (refer to **Figure 2**). These costs are included in direct variable operating costs.	
Other	Daracon will also incur environmental-management cost that are not allocated directly to a control measure. These costs include mining operations plans, auditing, fieldwork and rehabilitation area maintenance, like weeding, erosion repair. These costs are included in the environmental monitoring and reporting component of the operating costs.	1.6
Sub total		7.9
Other environmental costs		
Loss of surplus to other industries	Daracon advises the Revised Project is not expected to generate any loss of surplus to other industries.	0.0
Net public infrastructure cost	Daracon advises the Revised Project is not expected to generate public infrastructure costs. Patterson intersection upgrade and Gostwyck Bridge approach upgrades are included in CAPEX.	0.0
Residual value of land	The Revised Project is not expected to materially change the residual value of the land as the Revised Project is located on previous disturbed land and areas of additional disturbance have low commercial value. Potential for higher value land uses associated with use of voids and operational areas is similar to existing approved operations.	0.0
Aboriginal cultural and historical heritage	The Revised Project is not expected to generate any loss to Aboriginal cultural and historical heritage.	Nil
Visual amenity	The Revised Project is not expected to generate any changes to the visual amenity relative to existing operations.	Nil
Transport/ traffic impacts	The Revised Project is not expected to generate significant traffic impacts over those in the approved operations. Costs associated with intersection construction/ upgrades and improvements through Patterson to mitigate road safety risks are included in the capital cost component of the analysis. As noted above, road maintenance costs are included in operating expenses.	6.0
Total		13.9

Source: Based on information provided by Daracon, and various consultant reports.

2.5 Potential net benefits

Consistent with the Guidelines, the CBA is based on comparing the net direct and indirect benefits and subtracting the indirect costs of the Revised Project compared against the baseline scenario or the Approved operations where the Revised Project does not occur. The results are summarised in Table 13.

Based on the CBA methodology outlined in the Guidelines, and information provided by Daracon and specialist studies, the Revised Project is estimated to provide a potential net benefit to NSW. This net benefit is estimated to be $58 million in NPV terms. This is comprised of $19 million in NPV terms and $39 million in NPV terms in potential direct and indirect benefits respectively. The incremental indirect costs of the Revised Project are estimated to be $500.

Table 13: Central case – estimated potential net benefits of the Revised Project ($ million, real 2020 AUD)

Benefits	NPV	Costs	NPV
Direct benefits		**Direct costs**	
Net producer surplus attributed to NSW	13.5		
Royalties, payroll tax and Council rates	1.5		
Company income tax apportioned to NSW	3.7		
Total direct benefits	18.7	Total direct costs	-
Indirect benefits		**Indirect costs**	
Net economic benefit to NSW workers	12.8	Greenhouse gas emissions	0.0005
Net economic benefit to NSW suppliers	26.2	Air quality*	0
		Noise impact*	0.5
		Surface Water*	0
		Groundwater	0
		Transport impact*	6.0
		Biodiversity impact*	5.8
		Aboriginal cultural and Historical heritage	0
		Visual amenity	0
		Loss of surplus to other industries	0
		Net public infrastructure cost	0
		Residual value of land	0
		Other costs	1.6
Total indirect benefits	39.0	Indirect Costs	13.9
Total Project economic benefit	57.7	Total incremental cost of Project	0.0005
NPV of Project - ($m)	57.7		

** Management and mitigation costs are included in the operating costs, including air quality, noise impact, transport impact, surface water and biodiversity impact.*

Source: EY analysis based on various environmental technical consultant reports.

These estimates are based on the central case assumptions of the Revised Project, as outlined above.

The Revised Project is predicted to generate potential direct benefits of:

- Corporate taxes of $11.5 million in NPV terms for Australia, of which $3.7 million is attributed to NSW;
- Royalties, payroll tax and Council rates of $1.5 million in NPV terms; and

- Net producer surplus attributed to NSW of $13.5 million in NPV terms.

The potential indirect benefits of the Revised Project are related to the impacts that it will have to the NSW economy through suppliers. Supplier benefits are estimated to be $26.2 million in NPV terms over the life of the Revised Project. NSW worker benefits are $12.8 million in NPV terms.

The Revised Project is expected to result in indirect costs on the NSW community of $13.9 million in NPV terms, of which the majority are borne by Daracon (and accounted for in the operating costs of the Revised Project for mitigation and management). Only the incremental indirect costs associated with greenhouse gas emissions are not borne by Daracon (externalities). These externalities total just $500 in NPV terms.

Potential net benefits – sensitivity analysis

Consistent with the Guidelines, this section outlines a summary of the systematic sensitivity analysis undertaken for the Revised Project. The sensitivity analysis considers all key areas of the CBA, particularly prices, key costs (both capital expenditure and operating costs) and worker benefits. Where there are considered to be higher levels of uncertainty with the figures, a range of plus/minus 25 per cent is used. In areas where the figures are deemed more certain, a range of plus/minus 10 per cent is used. The sensitivity analysis is comprised of the following:

Revenue sensitivity:

- Higher price assumptions, where product prices are assumed to increase by 25 per cent over the central case assumptions for the life of the Revised Project
- Lower price assumptions, where product prices are assumed to decrease under the central case assumptions by 25 per cent

Cost-base sensitivity:

- Higher operational expenditure (assumed to increase by 10 per cent over the central case)
- Lower operational expenditure (assumed to decrease by 10 per cent under the central case)
- Higher capital expenditure (assumed to increase by 10 per cent over the central case)
- Lower capital expenditure (assumed to decrease by 10 per cent under the central case)

Worker and Supplier sensitivity:

- Disutility of quarry wage premium assumed to increase by 25 per cent on central case assumptions
- Supplier benefits assumed to reduce of 10 per cent from central case assumptions

Other sensitivity:

- Environmental impact costs, assumed to increase by 10 per cent over the central case
- Discount rate sensitivity, using a 4 per cent and a 10 per cent real discount rate (see Appendix B).

In addition, upper and lower bound estimates are undertaken which assume:

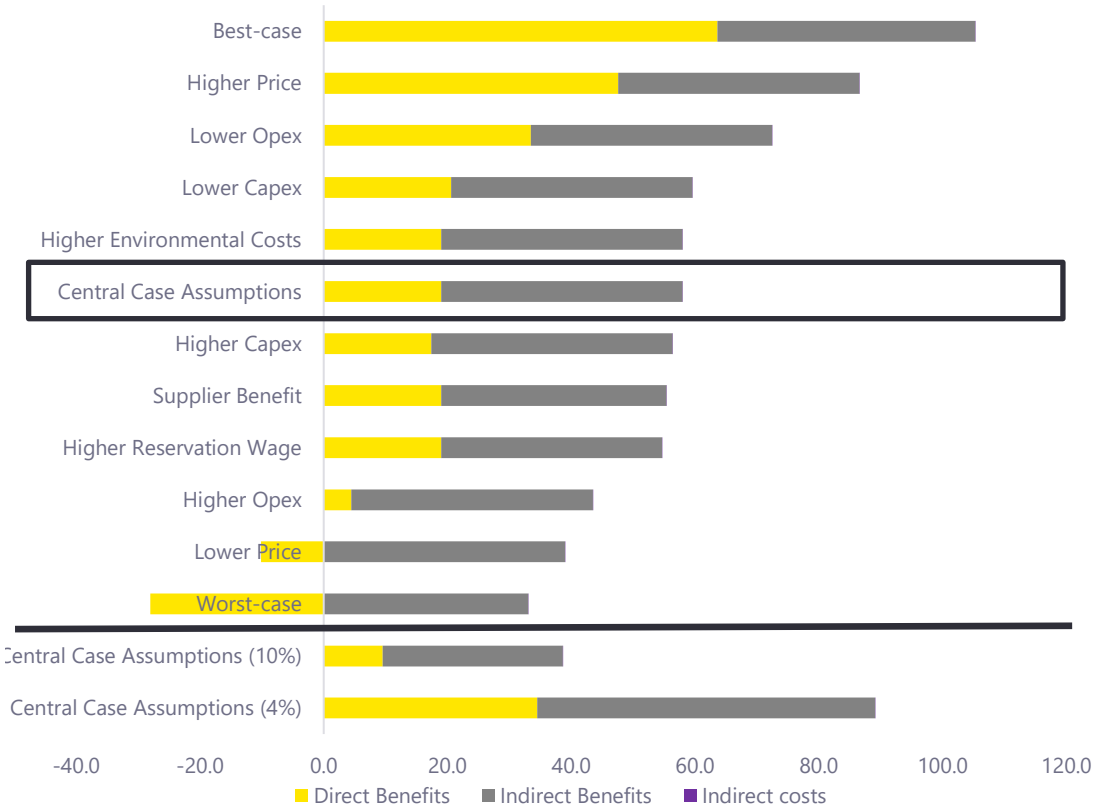
- **'Worst-case' scenario:** the price of products is assumed to reduce by 25 per cent, operational and capital expenditure are assumed to increase by 10 per cent, the disutility of the quarry wage premium is set to 25 per cent and supplier benefits are assumed to be lowered by 10 per cent compared with central case assumptions. Environmental costs are increased by 10 per cent over the central case.
- **'Best case' scenario:** the price of products is assumed to increase by 25 per cent, operational and capital expenditure are assumed to decrease by 10 per cent, the disutility of the quarry

wage premium is set to zero and supplier benefits are assumed to increase by 10 per cent compared with central case assumptions. Environmental costs are assumed to decrease by 10 per cent over the central case.

In both the best case and worst-case scenario, the discount rate is kept constant at 7%. Consistent with the Guidelines, the revenue sensitivity undertaken considers the impact of higher or lower prices on the results of the CBA. Local selling prices can be volatile, due to either shortages in demand or supply, so a 25% increase and decrease is tested in the upside and downside scenarios.

The results of the systematic sensitivity analysis are summarised in Figure 6. The sensitivity analysis shows that the estimated potential net benefits are robust in the sense that they remain positive after testing all key assumptions underpinning the analysis. In isolation, the estimated potential net benefit of the Revised Project is most sensitive to the price assumptions underpinning the analysis.

Figure 6: Systematic sensitivity analysis of the CBA to key assumptions ($ million, real 2020 AUD)



Source: EY analysis based on information from various sources.

The lower bound estimate of potential net benefits, which takes a pessimistic assumption around product prices, capital expenditure, and operational expenditure, as well as worker and supplier benefits, yields an estimated potential net benefit of $4.8 million in NPV terms. The upper bound estimate of potential net benefits, based on optimistic assumptions, is $104.7 million in NPV terms.

The potential net benefits are sensitive to the discount rate used for the analysis. Under the central case assumptions, the Revised Project is expected to generate $57.6 million of potential net benefit using a 7 per cent discount rate. Using a 4 per cent discount rate increases the potential net benefit to $88.3 million. Conversely, a 10 per cent discount decreases the potential net benefit to $38.4 million.

3. Local effects analysis

Consistent with the Guidelines, the local effects analysis (LEA) uses a similar framework to the CBA presented in the previous section but is focussed on the net economic impacts to the local community. The Guidelines refer to the local area as being consistent with the relevant Statistical Area Level 3 (SA3) as defined by the Australia Bureau of Statistics. In the case of the Revised Project, the location used for the LEA is the Lower Hunter SA3.

The Lower Hunter region

The Lower Hunter region is located to the west of Newcastle and circles the regional Centre of Maitland. The SA3, includes Singleton and Cessnock, as well as towns like Wollombi in the southern end of the region and Chichester in the north.

The MCQ is located to the north of Maitland and to the east of Singleton, in the central eastern sector of the Lower Hunter SA3.

Regional characteristics

The region is reliant on the mining sector, of the residents in the region almost 11.9 per cent work within the coal mining sector, as outlined in Table 14, compared to 0.6 per cent in NSW and 0.4 per cent Australia-wide.

As a result, a high proportion of workers in the region are in occupations that are typically found within both the mining sector and industries that supply that sector. According to the statistics issued by the Australian Bureau of Statistics in 2016, technicians and trades workers make up 17.9 per cent of the Lower Hunter labour force compared to 12.7 per cent in NSW and machinery operators and drivers account for 14 per cent of the regional economy compared to 6.1 per cent in NSW.

These occupation outcomes are also reflected in the educational outcomes within the region. 27.8 per cent of residents report certificate level III and IV as their highest educational attainment, compared to 17.3 per cent in NSW.

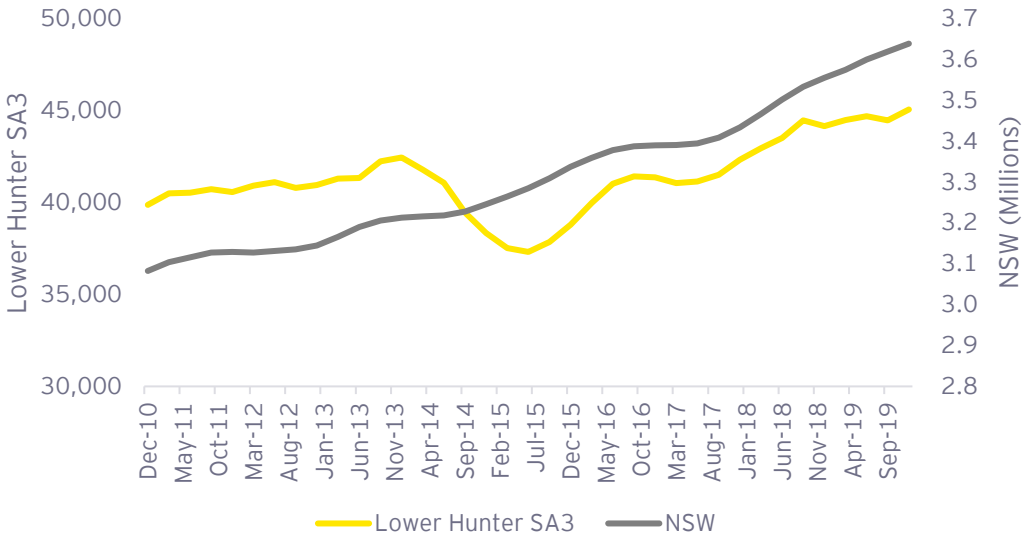
Table 14: Education and employment characteristics

	Lower Hunter	New South Wales	Australia
Level of highest educational attainment	%	%	%
Advanced Diploma and above	18.5	37.7	35.9
Certificate III and IV	27.8	17.3	18.2
Year 10 to 12	38.0	35.1	36.5
Other	15.7	9.9	9.4
Occupation	%	%	%
Technicians and Trades Workers	17.9	12.7	13.5
Machinery Operators and Drivers	14.0	6.1	6.3
Labourers	12.5	8.8	9.5
Professionals	11.9	23.6	22.2
Community and Personal Service Workers	11.3	10.4	10.8
Clerical and Administrative Workers	11.2	13.8	13.6
Managers	10.4	13.5	13
Sales Workers	9.2	9.2	9.4
Industry of employment, top responses	%	%	%
Coal Mining	11.9	0.6	0.4

Horse Farming	2.6	2.0	2.0
Beef Cattle Farming (Specialised)	2.5	1.7	1.8
Supermarket and Grocery Stores	2.5	3.5	3.9
Local Government Administration	2.3	2.2	2.4

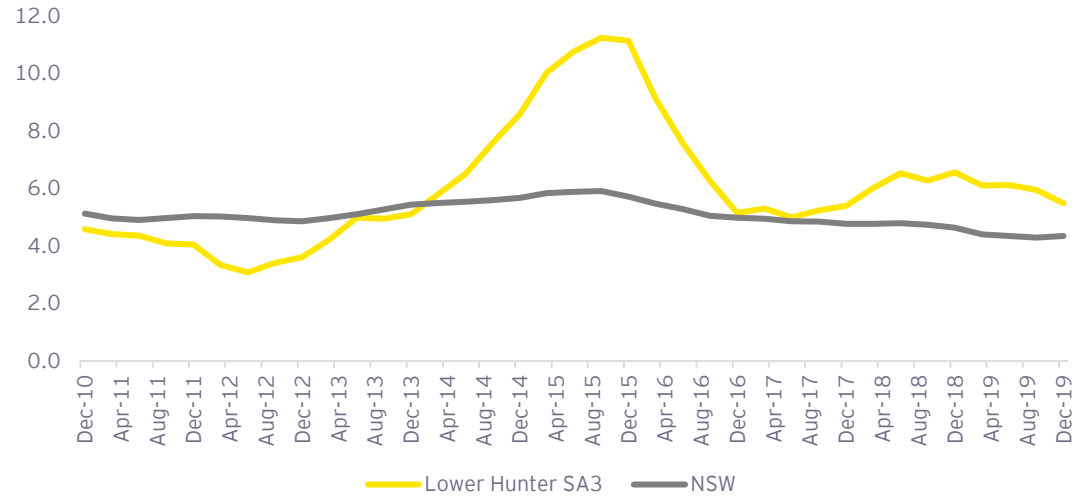
Source: Australian Bureau of Statistics (2016)

Figure 7: Employment, Lower Hunter SA3 and New South Wales



Source: Department of Education, Skills and Employment (2019)

Figure 8: Unemployment, Lower Hunter SA3 and New South Wales



Source: Department of Education, Skills and Employment (2019)

Local effects analysis

The LEA accounts for the economic benefits to the Lower Hunter region only. It does not include any economic benefits that may accrue to the major regional centres that are located adjacent, including Maitland and Newcastle or the broader Hunter region. Daracon has advised that based on its assessment for the currently approved operations 100 per cent of the supplier inputs are sourced from Lower Hunter based businesses and 71 per cent of workers lived locally (based on employment when the quarry was at full operational capacity in September 2019).

Underpinning the LEA are the assumptions that:

- No net producer surplus accrues to the region;
- No company income tax accrues to the Lower Hunter SA3 region;
- Based on information supplied by Daracon, we have assumed for the proposed the Revised Project that 100 per cent of intermediate inputs will be supplied from the SA3 region.

Based on these assumptions, it is expected that the Revised Project may generate additional potential indirect benefits to local suppliers of $26.2 million in NPV terms in addition to those generated by approved operations, as outlined in Table 15. Indirect benefits to employees located in the Lower Hunter SA3 are expected to be $9.2 million in NPV terms. The incremental indirect costs to the Lower Hunter SA3 region associated with greenhouse gas emissions from the Revised Project are negligible and there are no other externalities attributable to the Revised Project, as management and mitigation expenditure associated with environmental impacts have been incorporated into the operating cost. Therefore, the Revised Project is estimated to confer a potential net benefit on the Lower Hunter SA3 region of $35.4 million in NPV terms, and this figure includes direct and indirect benefits, as shown in the table below.

Table 15: Estimated Local Effects Analysis of the Revised Project ($ million, real 2020 AUD)

Benefits	NPV	Costs	NPV
Direct benefits		**Direct costs**	
Net producer surplus attributed to NSW	-		
Royalties, payroll tax and Council rates	-		
Company income tax apportioned to NSW	-		
Total direct benefits	-	**Total direct costs**	-
Indirect benefits		**Indirect costs**[12]	
Net economic benefit to landholders		Greenhouse gas emissions	$0.0
Net economic benefit to NSW workers	$9.2	Air quality	$0.0
Net economic benefit to NSW suppliers	$26.2	Noise impact*	$0.5
		Surface Water	$0.0
		Groundwater	$0.0
		Transport impact*	$6.0
		Biodiversity impact*	$5.8
		Aboriginal cultural and Historical heritage	$0.0
		Visual amenity	$0.0
		Loss of surplus to other industries	$0.0
		Net public infrastructure cost	$0.0
		Residual value of land	$0.0
		Other costs*	$1.7
Total indirect benefits	$35.4	**Total indirect costs**	$13.9
Total Project economic benefit	$35.4	**Total incremental cost of the Project**	$0.0
NPV of the Project	$35.4		

** Management and mitigation costs are included in the operating costs, including air quality, noise impact, transport impact, surface water and biodiversity impact.*

Source: EY analysis based on information from various sources.

[12] Management and mitigation costs are included in the operating costs, including air quality, noise impact, surface water and biodiversity impact.

Sensitivity analysis

As outlined above, the LEA relies on a number of modelling assumptions. Consistent with the Guidelines, Figure 9 provides a summary of the systematic sensitivity analysis undertaken for the Revised Project. The sensitivity analysis tests the same assumptions outlined in the CBA.

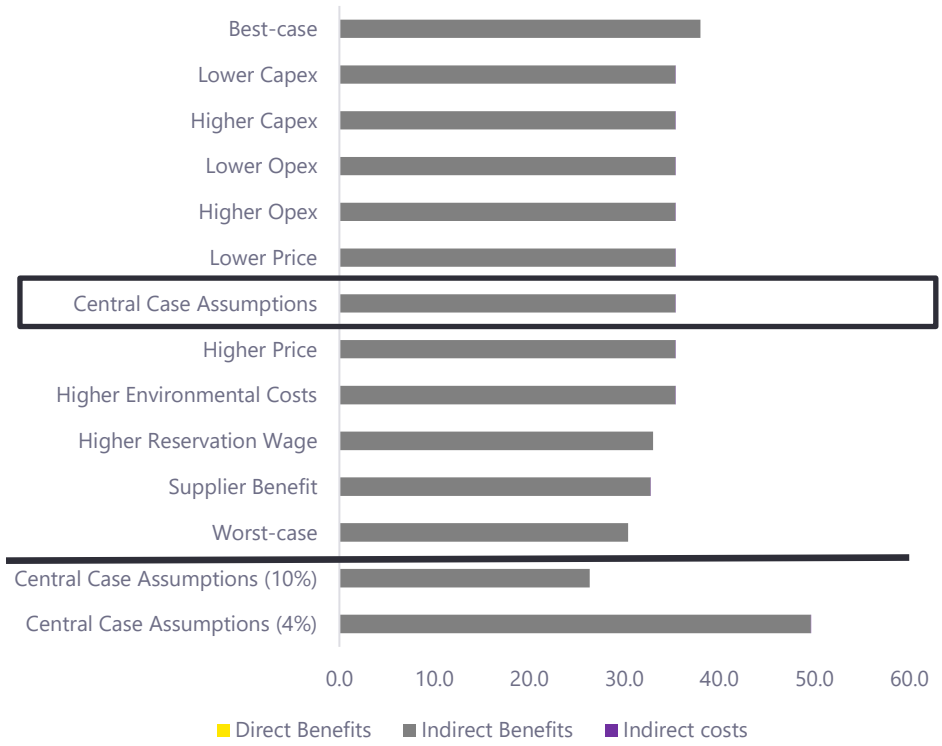
The main drivers for the regional impact are the supplier benefits. Those sensitivities that change the supplier benefits through lower operational costs, or lower supplier benefit have the greatest impact on the regional net benefit.

The results of the systematic sensitivity analysis are summarised in Figure 9.This sensitivity analysis shows that the estimated potential net benefits remain positive after testing all key assumptions underpinning the analysis. Full detail of the sensitivity analysis is presented in Appendix B.

The lower bound, or worst-case, estimate of net benefits, which takes the most pessimistic assumptions around prices, capital expenditure, operational expenditure and worker and supplier benefits, yields an estimated potential net benefit of $30.4 million in NPV terms. The upper bound, or best-case, estimate based on optimistic assumptions is $38 million in NPV terms. In both the best-case and worst-case scenarios, the discount rate is kept constant at 7%.

Under the Central case assumptions, the Revised Project is expected to generate $35.4 million of potential net benefit to the local area in NPV terms. Using a 4 per cent discount rate increases the potential net benefit to $49.6 million, and conversely a 10 per cent discount rate decreases the potential net benefit to $26.3 million.

Figure 9: Systematic sensitivity analysis of the LEA to key assumptions ($ million, real 2020 AUD)*



Source: EY analysis based on information from various sources.

**Note: Only Indirect benefits are assessed for the purposes of the LEA.*

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Appendix A Indirect costs

This Appendix provides a detailed description of the indirect costs associated with the Revised Project. The quantitative and qualitative analysis draws on information provided to us in the technical assessments undertaken for the Revised Project (listed in Chapter 2 above).

Greenhouse gas emissions

Consistent with Australia's international obligations under the United Nations Framework Convention on Climate Change, the level of greenhouse gas (GHG) emissions attributable to the Revised Project is measured by the:

1. Scope 1 emissions, representing the direct GHG emissions from, for example, the use of diesel in plant and equipment and fugitive emissions; and

2. Scope 2 emissions, representing the indirect emissions from purchases of inputs, generally associated with the purchase of electricity.

The Greenhouse Gas and Energy Assessment (GHGEA) of the Revised Project was undertaken by Umwelt Australia. In total, it is estimated that the Revised Project will generate 0.167 Mt CO_2-e of scope 1 and scope 2 emissions over the life of the quarry. To price the GHG emission we have applied the latest carbon price resulting from the most recent (September 2020) auction undertaken by the Clean Energy Regulator (CER) under the Emissions Reduction Fund (ERF).[13] The results of this auction yielded an average carbon price of $15.74 (in 2020 Australian dollars) per tonne of CO_2-e abated. While this is an average figure, it represents a useful proxy to the marginal cost of abatement under Australia's current emission abatement policy represented by the ERF.

The externalities arising from GHG emissions associated with the Revised Project are derived by taking the year-on-year emissions and multiplying these figures by the $15.74 carbon price under the ERF over the life of the Revised Project. The impacts of GHG emissions are global in nature and, as a result, apportioning the whole cost of CO_2-e associated with the Revised Project overstates the cost to NSW. As per the guidance from The Guidelines, to estimate the impact on NSW, it is appropriate to apportion a component of the total global costs to NSW. The approach adopted is to apportion the global GHG costs estimated to NSW using the ratio of NSW population to global population. On a global basis, we estimate the total GHG cost is $0.46 million in NPV terms. Attributing the GHG costs based on the NSW population, consistent with the Guidelines, results in an attributed GHG cost of just $500 ($0.0005 million) to NSW in NPV terms.

Traffic and transport impact

A comprehensive Traffic Impact Assessment (TIA) was undertaken by SECA Solution to assess the potential changes to existing road and traffic conditions and potential impacts on operational capacity of principal roads, public transport, and safety of road users. The Revised Project design includes several features and considerations to reduce traffic and transport related impacts associated with the operation of the quarry. These measures include:

- A reduction in the maximum tonnes transported by road to 500,000 tpa

- A reduction in peak number of trucks per hour to 20 loaded vehicles (peak 40 movements per hour)

[13] The results of this auction are summarised at http://www.cleanenergyregulator.gov.au/ERF/Pages/Auctions%20results/September%202020/Auction-September-2020.aspx which was accessed in November 2020 for this analysis.

- Road haulage of quarry product to occur 7.00am to 6.00pm Monday to Friday, with no haulage of product on Saturday, Sunday or public holidays

- No trucks through Paterson prior to 6.45am Monday to Friday

- Reduced truck speed through Paterson

The TIA concluded that the Revised Project is unlikely to result in an adverse impact on the operational capacity of the roads and key intersections along the primary haul route, including road safety and public transport. This is due to:

- Sufficient capacity in the existing road network to accommodate the proposed traffic movements associated with the Revised Project both during construction and operation

- Existing road safety issues along the primary haul route and at key intersections have been recognised as part of the design of the Revised Project

- The new main site access off Dungog Road, to be designed and constructed in accordance with Austroads Guidelines

- Proposed road intersections and bridge approach improvements (designed in consultation with the relevant road authority and in accordance with Austroads Guidelines):

    - A new access to the quarry on Dungog Road will remove all quarry related trucks from Station Street and Grace Street after year 4

    - Providing a sheltered right turn lane on Gresford Road to improve road safety

    - Upgrade the 90-degree bend in Paterson with a refresh of the driving line marking through the intersection

    - Incorporating a series of curves to raise driver awareness and associated new line marking, as well as Vehicle Activated Signage (VAS) at the Gostwyck Bridge approach road.

- Daracon will contribute towards road maintenance and pavement upgrades to Dungog Shire Council and Maitland City Council to further mitigate any impacts on the road pavement resulting from the transport of product associated with the Revised Project.

As part of the Revised Project, Daracon are also seeking approval for the ability to extend the existing rail siding further within the quarry – this would extend the rail siding to allow loading of longer trains and reduce noise associated with rail loading operations.

Several mitigation and management measures on the operational front has been put in place. These include:

- Assessing transport subcontractors rigorously both through pre-qualification process and constant monitoring

- Reviewing and updating the Driver Code of Conduct annually (with community feedback)

- Planning to expand rail markets and gain access to rail unloading capacity

- Seeking to establish road maintenance contributions via a Planning Agreement with Dungog Shire Council and Maitland City Council.

Daracon has committed to road maintenance costs associated with truck haulage. These funds will enable Dungog Council to ensure road conditions within Paterson are appropriately maintained which will mitigate the risk of vibration related damage. In addition, Daracon plans to implement

other measures like updating, enforcing and monitoring Driver Code of Conduct, reducing truck speeds at selected routes/intersections.

The above mitigation measures are included in capital costs for the Revised Project. With the implementation of these mitigation measures, residual impacts associated with the Revised Project are all within acceptable levels based on relevant NSW assessment criteria.

Groundwater impact

A comprehensive assessment of potential groundwater impacts of the Revised Project has been undertaken by Australasian Groundwater and Environmental Consultants (AGE). This assessment has been prepared in accordance with the relevant requirements of the *Water Management Act 2000* (WM Act) and relevant NSW water planning policies and guidelines, most notably the NSW Aquifer Interference Policy (AIP) (NOW, 2012).

Based on the results of the Ground Water Impact Assessment, the Revised Project is not expected to have adverse impacts on groundwater quality or groundwater users. Specific groundwater mitigation and management measures include the ongoing implementation of the quarry's groundwater monitoring program, including additional monitoring as required. This will involve:

- The preparation of a Water Management Plan to further define management measures and monitoring
- Ongoing reporting of monitoring and dewatering results on an annual basis, with a meaningful summary of results maintained on the proponent's website
- Decommissioning and replacement of relevant bores beyond the extent of the quarry as the extraction area extends
- Continuing to report annually to the NRAR and DPIE the quarterly groundwater level logging results and water quality monitoring results.

All groundwater intercepted by the Revised Project will be licensed in accordance with the requirements of the WM Act. Daracon currently holds sufficient groundwater licences to cover all predicted take associated with the Project. The annual licensing requirements associated with groundwater take are included as operational costs for the Revised Projects. All residual impacts associated with the Revised Project are all within acceptable levels based on relevant NSW assessment criteria.

Surface water and water balance impact

A comprehensive Surface Water Impact Assessment (SWIA), including an Operational Water Balance Study, was undertaken by Umwelt in accordance with the SEARs. This SWIA addresses the agency submissions relating to the previous assessment (JM Environments, 2016) that was part of the EIS for the Original Project.

According to SWIA, the Revised Project has the potential to impact on natural and existing surface water systems including catchment areas and flow volumes in downstream watercourses, flooding, water quality, geomorphological and hydrological values of watercourses, riparian and ecological values of watercourses and water users, both in the vicinity and downstream of the Project. The Revised Project, however, will no longer intercept a third order stream due to its reduced disturbance footprint, as a direct result of excluding proposed expansion of quarrying activities into new undisturbed areas to the east.

Key findings of the SWIA include:

- The quarry's discharge water quality is expected to continue to meet the EPL 1378 criteria.

- The impacts on downstream water quality and availability associated with the Revised Project are expected to be negligible and similar to existing operations.

- The final landform will incorporate two final voids (West Pit and East Pit) that are predicted to fill with runoff from upslope catchments and remain as permanent water bodies that will periodically spill to the downstream environment.

- With the help of further water management system monitoring (inventories, usage and discharges) and groundwater modelling, final void water quality is expected to be like runoff from the surrounding catchment.

- The Revised Project's WMP will include the proposed Water Management System (WMS), revised Erosion and Sediment Controls (ESCs), amenities water management details, the proposed surface water monitoring program and Triggered Action Response Plans (TARPs) to allow Daracon to actively monitor the effectiveness of the WMS and update water management practices on a regular basis as required.

- Potable water from the amenities water reticulation system will be sampled on a six-monthly basis and analysed to ensure the water meets the requirements of the Australian Drinking Water Guidelines (National Health and Medical Research Council, 2011).

- The amenities water supply tank will be inspected monthly for any potential contamination with organics or other materials.

All surface water take attributable the Revised Project will be licensed in accordance with the requirements of the WM Act. The annual licensing requirements associated with groundwater take are included as operational costs for the Revised Projects. Costs associated with the treatment of water to a standard appropriate for discharge are included as operations costs. All residual impacts associated with the Revised Project are all within acceptable levels based on relevant NSW assessment criteria.

Biodiversity impact

A comprehensive biodiversity assessment report (BAR) and biodiversity offset strategy (BOS) were prepared by Conacher Consulting (Conacher) for the Revised Project.

The BAR was prepared to address the Guidelines for preparing Assessment Documentation relevant to the Cth. *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provided by the Department of the Environment and to assess the potential ecological impacts of the Revised Project following the *NSW Framework for Biodiversity Assessment – NSW Biodiversity Offsets Policy for Major Projects* (FBA).

Key findings of BAR include:

- A total of 22 ha of native vegetation will be impacted by the Revised Project.

    - Minor indirect impacts associated with deterioration in water quality, dust, noise and vibration, decline in genetic diversity, weeds and feral animals may occur during the construction and operational phases, however, with the implementation of the mitigation measures outlined below and once the proposed rehabilitation has become established, the long-term connectivity of the area will be improved.

    - These indirect impacts will be similar to those experienced with the historic and more recent operations at the quarry and will therefore not substantially change with the Revised Project.

- The Revised Project requires biodiversity offsetting calculated in accordance with the FBA. There are five vegetation communities and four threatened species that require offsetting in

accordance with the FBA. Calculated biodiversity credit requirements under the FBA of the Revised Project have been identified as:

- 1,422 ecosystem credits for four native plant community types
- 40,418 *Eucalyptus glaucina* (Slaty Red Gum) credits
- 317 *Myotis macropus* (southern myotis) credits
- 440 *Phascogale tapoatafa* (brush-tailed phascogale) credits
- 572 *Phascolarctos cinereus* (Koala) credits.

- Alternative quarrying options have been considered to minimise the environmental impacts associated with the Revised Project whilst maximising the economic resource recovery – consequently, the proposed disturbance area for the Revised Project has reduced from 82.8 ha to 66 ha.
    - Approximately 15.3 ha of undisturbed vegetation in the former East Pit (Lot 21 DP 773220) is no longer proposed to be disturbed as part of this application.

Measures to be implemented with the Revised Project to minimise and manage direct and indirect impacts include:

- Acquisition of ecosystem and species credits and/or establishment of biodiversity stewardship sites to offset biodiversity impacts in accordance with FBA.
- Implementation of a Flora and Fauna Management Plan to minimise impacts to biodiversity
- Environmental site induction of site clearing contractors
- Completion of pre-clearing surveys to relocate fauna species
- Supervision of clearing works by a qualified and experienced ecologist to ensure that the procedures outlined in the Flora and Fauna Management Plan are implemented
- Implementation of an Environmental Site Management Plan to manage environmental impacts associated with erosion, sedimentation, water quality, noise, dust and vibration.

Costs associated with the implementation of measures required for the project under the EPBC Act and *NSW Framework for Biodiversity Assessment – NSW Biodiversity Offsets Policy for Major Projects* (FBA) to fully offset all biodiversity impacts are included in the capital costs for the Revised Project. All residual impacts associated with the Revised Project are all within acceptable levels based on relevant NSW assessment criteria.

Noise impact

A detailed Noise Impact Assessment (NIA) was completed by Umwelt in accordance with the *Noise Policy for Industry* (NPfI) (NSW EPA, 2017, the NSW Road Noise Policy (DECCW, 2011) (RNP), the Rail Infrastructure Noise Guideline (RING) (NSW EPA, 2013) and the Interim Construction Noise Guideline (ICNG) (DECC, 2009).

The assessment has been undertaken by modelling a scenario representative of reasonable worst-case noise emissions from quarry operations during five stages: Years 2, 6, 10, 15 and 20. The Year 6, 10,15 and 20 modelling represent noise impacts from the operations from year 3 once reasonable and feasible noise mitigation measures have been installed. Years 1 and 2 are referred to as the transitional period and noise impacts during this period will progressively decrease as

noise mitigation measures are constructed. Noise predictions were undertaken for the day, evening and night time periods and incorporated a range of mitigation measures committed to by Daracon. The NIA also considers the impacts associated with construction noise, road traffic noise and rail noise from trains on a non-network rail line/network rail line.

Throughout the development of the conceptual quarry plan, a range of iterative noise modelling processes have been undertaken, designed to identify operational and engineered noise controls that can be implemented. This process included revisions to the quarry progression and processing plant area including optimisation of pit geometry and sequencing, redesign of the East Pit (processing plant area) to incorporate a noise bund and walls. In addition, according to the NIA, Daracon commit to implement a range of feasible and reasonable noise controls for the life of the Revised Project.

Key findings of NIA include:

- **Operational Day-time Noise Impacts** – From year 3 onwards, noise impacts from the Project during operations are only predicted to exceed the Project noise trigger levels (PNTL) by more than 5 dB at one residence and 11 properties over the operating stages predicted to have impacts between 3dB and 5dB over the PNTL. These properties would all be provided with rights to have noise mitigation measures applied to their properties.

- **Evening and Night-time Impacts** – From year 3 onwards, three residential receivers on Station Street are predicted to exceed the evening and night-time PNTL by more than 5 dB during rail loading operations. These properties would all be provided with rights to have noise mitigation measures applied to their properties.

- **Maximum Noise Events (Sleep disturbance)** – The assessment indicated that under calm and noise enhancing meteorological conditions noise levels associated with night time train by-pass events and rail loading operations are predicted to be below the sleep disturbance criterion at all the identified receivers.

- **Road Traffic noise assessment** – Modelling shows that existing road traffic noise levels (without quarry trucks) exceed the relevant road noise criteria under the NSW Road Noise Policy (RNP) at some sensitive receivers due to the proximity of the receiver to the road and existing traffic rates. The additional road traffic noise associated with quarry trucks is predicted to be less than 2 dB above existing traffic noise levels (excluding quarry trucks) and/or satisfy the relevant road noise criteria under the (RNP). The RNP considers noise level increases of up to 2 dB(A) to be barely perceptible to the average person.

In addition, several mitigation measures will be implemented by Daracon to manage noise impacts including:

- construction of noise bunding

- screening of plant

- active monitoring and management of operations to mitigate impacts during adverse meteorologic conditions

- restriction on maximum laden truck movements in any hour

- construction of the new access road to avoid truck movements along Station Street and

- reduced truck speed through Paterson.

Daracon will review and update the Noise Management Plan (NMP) for the Revised Project. The NMP will detail the implementation of monitoring and management controls to be utilised to manage residual noise impacts associated with site operations. A Trigger Action Response Plan

(TARP) would be developed as part of the NMP and would include an Incident Investigation and Response process.

Costs associated with the implementation of noise mitigation measures at affected properties and the implementation of other management measures are included in the capital and operating costs for the Revised Project. All residual impacts associated with the Revised Project are all within acceptable levels based on relevant NSW assessment criteria.

Air quality impact

An assessment of predicted air quality impacts for the Revised Project was undertaken by Umwelt in accordance with the EPA's Approved Methods of the Modelling and Assessment of Air Pollutants in New South Wales (EPA, 2016), in accordance with the SEARs (dated 4 August 2016) and in response to government agency and community submissions during the exhibition of the EIS. The operations of the Revised Project were analysed and the estimates of particulate matter emissions, comprising deposited dust and total suspended particles, fume (oxides of Nitrogen from blasting and minor emissions from machinery exhausts.

Daracon has proposed several measures under the Revised Project design that have minimised air quality emissions. These include:

- Reductions to the overall disturbance footprint through optimisation of the proposed extraction within the West Pit.
- Reduction in operational hours.
- Progressive rehabilitation of disturbed areas.
- Ongoing implementation of the air quality management practices of the previous operations at the quarry.

There is expected to be very little change in contribution from the Revised Project beyond the Project Area boundary, for all particulate matter classifications (PM10, PM2.5, TSP and dust deposition), with no exceedances of the EPA criteria at any of the sensitive receiver locations. The Project is not expected to cause adverse air quality impacts with respect to emissions from blasting and associated fume, emissions from truck diesel exhausts or to crystalline silica.

Additional mitigation strategies have been planned to reduce the impact on air quality. These include the enclosure of the primary and secondary crusher and screening building, use of water sprays and watering of haul routes, restricting vehicle speeds and covering of laden trucks at all times except during loading and unloading.

Costs associated with the implementation of measures to mitigate air quality impacts are included in the capital and operating costs for the Revised Project. All residual impacts associated with the Revised Project are all within acceptable levels based on relevant NSW assessment criteria.

Blasting and vibration impact

An assessment of potential blasting and vibration impacts of the Revised Project has been undertaken by Peter Bellairs Consulting Pty Ltd (Peter Bellairs, 2019). The assessment has been prepared in accordance with the SEARs (dated 4 August 2016) and in response to government agency and community submissions during the exhibition of the EIS.

Key findings from the assessment include:

- Blasting activities at the quarry have demonstrated compliance, with the implementation of existing blast management protocols and risk mitigation measures, with the Australian and New Zealand Environmental Council (ANZECC) 1990 – *Technical basis for guidelines to*

minimise annoyance to blasting overpressure and ground vibration (ANZECC, 1990), guidelines and licence criteria.

- The use of the existing blasting measures and the ability to manage blast induced vibration and air overpressure through blast design will enable the Revised Project to meet the guidelines and relevant licence criteria.

As part of the Revised Project, a reduced blasting window proposed between 11am - 3pm, Monday to Friday only, with no blasts being fired on weekends or public holidays. The well-established, existing blast practices used to minimise blast induced vibration, air overpressure and flyrock will continue to be implemented.

Costs associated with the implementation of measures to manage blast impacts to meet relevant criteria impacts are included in the operating costs for the Revised Project.

Historic heritage impact

The Historical Heritage Assessment (HHA) prepared by Niche Environment and Heritage to support the EIS (Monteath & Powys, 2016) addressed all non-haulage route components of the Original Project to the satisfaction of the DPE and other relevant government agencies. A heritage impact statement (HIS) was prepared to assess the potential heritage impacts associated with the Revised Project's primary haulage route, involving potential vibration impacts on the structural integrity of listed heritage items, potential impacts to the significance of the conservation area the impacts of proposed intersection upgrade works on the curtilage and significance of listed items and any conservation areas.

The only physical works that will occur in association with a heritage item or area as part of the proposed haulage route are within the Paterson heritage conservation area (HCA). The upgrade will not result in any identified adverse visual or physical impacts to the heritage significance of HCA. Adverse impacts associated with traffic induced vibration are unlikely given the controls to be implemented by Daracon and the financial contributions towards road maintenance.

Daracon has committed to the payment of road contributions based on anticipated maintenance costs associated with truck haulage. These funds will enable Dungog Council to ensure road conditions within Paterson are appropriately maintained which will mitigate the risk of vibration related damage.

Visual assessment

The existing quarry has been a landscape element in the local area for many years. Although the proposed extension will have the potential to negatively impact the existing visual amenity in some residential locations, these changes will occur progressively. Given the nature of the Revised Project, the mitigation measures proposed are considered appropriate to minimise the visual impacts associated with the future development of the quarry.

Appendix B Sensitivity analysis – CBA and LEA

Table 16: Sensitivity analysis of the potential net benefits of the Revised Project (NPV $ million, real 2020 AUD)

	Central Case	Higher Price	Lower Price	Higher Opex	Lower Opex	Higher Capex	Lower Capex	Higher Reservation Wage	Lower Supplier Benefit	Higher Environ. Costs	Worst-case	Best-case	Central Case (4% discount rate)	Central Case (10% discount rate)
Direct Benefits	18.68	47.13	-10.31	4.20	33.09	17.08	20.28	18.68	18.68	18.68	-28.17	63.15	33.89	9.38
1. Net producer surplus	13.51	38.74	-12.50	0.60	26.32	11.91	15.11	13.51	13.51	13.51	-29.63	53.15	26.42	5.66
2. Royalties, payroll tax and Council rates	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	2.02	1.11
3. Company income tax apportioned	3.70	6.93	0.72	2.13	5.30	3.70	3.70	3.70	3.70	3.70	0.00	8.53	5.45	2.60
Indirect Benefits	38.92	38.92	38.92	38.92	38.92	38.92	38.92	35.58	36.30	38.92	32.97	41.53	54.42	29.05
1. Net economic benefit to Local workers	12.80	12.80	12.80	12.80	12.80	12.80	12.80	9.47	12.80	12.80	9.47	12.80	17.65	9.70
2. Net economic benefit to Local suppliers	26.11	26.11	26.11	26.11	26.11	26.11	26.11	26.11	23.50	26.11	23.50	28.73	36.77	19.35
Indirect (Environmental costs)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potential Net Benefits	57.59	86.05	28.61	43.11	72.01	55.99	59.19	54.26	54.98	57.59	4.80	104.67	88.31	38.42

Source: EY analysis based on information from various sources.

Table 17: Sensitivity analysis of the potential net regional benefits of the Revised Project (NPV $ million, real 2020 AUD)

	Central Case	Higher Price	Lower Price	Higher Opex	Lower Opex	Higher Capex	Lower Capex	Higher Reservation Wage	Lower Supplier Benefit	Higher Environ. Costs	Worst-case	Best-case	Central Case (4%)	Central Case (10%)
Direct Benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1. Net producer surplus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. Royalties, payroll tax and Council rates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. Company income tax apportioned	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Indirect Benefits	35.3	35.3	35.3	35.3	35.3	35.3	35.3	32.9	32.7	35.3	30.3	37.9	49.4	26.3
1. Net economic benefit to Local workers	9.2	9.2	9.2	9.2	9.2	9.2	9.2	6.8	9.2	9.2	6.8	9.2	12.6	6.9
2. Net economic benefit to Local suppliers	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	23.5	26.1	23.5	28.7	36.8	19.3
Indirect (Environmental costs)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Potential Net Benefits	35.3	35.3	35.3	35.3	35.3	35.3	35.3	32.9	32.7	35.3	30.3	37.9	49.4	26.3

Source: EY analysis based on information from various sources.

Appendix C Key Project changes since 2016

The following table summarises the key proposed changes to the Project since the original EIS was submitted in 2016.

Table 18: Key project changes since original EIS was submitted in 2016

Key Feature	Original Project 2016	Revised Project 2020
Quarry operation approval term	30 years	25 years
Quarry extent	Proposed additional disturbance 82.8 ha	Proposed additional disturbance 66 ha - avoiding approximately 15.3 ha of native vegetation in the former East Pit (Lot 21 DP 773220)
Extraction limit	1.5 Mtpa	1.1 Mtpa
Road transport limit	Up to 1.45 Mtpa by road	Maximum 500,000 tpa by road
Rail transport limit	Up to 50,000 tpa by rail	Up to 600,000 tpa by rail. Subject to market requirements at a later date, Daracon may seek DPIE approval to increase the amount transported by rail, on a campaign basis.
Truck limits per day	Maximum 215 laden trucks per day	Maximum 140 laden trucks per day
Truck limits per hour	Maximum 40 laden trucks per hour	Maximum 20 laden trucks per hour
In pit quarry operations	6.00 am to 6.00 pm Monday to Saturday	7.00 am to 6.00 pm Monday to Saturday No in-pit mobile crushing in the West Pit
Evening/Night crushing and processing activities	6.00 am to 10.00 pm	No operations during evening period (6.00 pm to 10.00 pm) No operations during night period (10.00 pm to 7.00 am) No crushing or processing prior to 7.00 am Monday to Saturday
Sales loading and stockpiling for road transport	5.30am to 7.00pm Monday to Saturday	No loading of product trucks prior to 7.00am Monday to Friday No Quarry trucks through Paterson prior to 6.45am Monday to Friday No road haulage of Quarry product on Saturday
Loading and overnight parking	Loading and parking of trucks on site overnight	Provision for up to 10 unladen Daracon trucks (not contractors) to return to the Quarry between 6.00 pm and 7.00 pm Monday to Friday to park in the Quarry overnight and be loaded during this time in readiness for departure from 7.00 am the following morning. (Note: in the case of trucks loaded on Friday evening, departure will be no earlier than 7.00 am Monday morning.)
Train loading and rail transport	24 hours / 7 days per week	No change
General Maintenance and Environmental Management Controls	Not specified	24 hours / 7 days per week as required, including vehicles/trucks moving in and out of the site for maintenance purposes, as required

Source: Umwelt and Daracon.

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