

**EVALUATION AND JUSTIFICATION**

**For a Proposed Extractive Industry**

**at**

**Lot 1 DP 366036 & Lot 12 DP 582916  
Edenville & Omagh Roads  
Cedar Point**

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## 1.0 INTRODUCTION

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An Environmental Impact Statement (EIS) and Development Application (DA) have been lodged with Kyogle Council for a proposed extractive industry (quarry) at Lot 1 DP366036 and Lot 12 DP 582916 Edenville Road, Cedar Point. An extraction rate of up to 47,000m<sup>3</sup> per year of basalt rock material is proposed.

The Development Application was referred to Joint Regional Planning Panel (JRPP), and upon a peer review of the submission by Umwelt Environment Consultants (September, 2011) the JRPP provided a Final Record of Decision.

The Final Record of Decision has requested the following in relation to project justification:

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

## 1.2 Background

The proposed quarry site is a steep sided, flat top basaltic plateau that resulted from an ancient lava flow filling a sandstone valley, from which all the surrounding material has been eroded leaving an inverted landscape.

The site rises steeply from a gently undulating and level plain of approximately 65 metres elevation to reach a plateau height of approximately 120 metres.

The soils of the proposed quarry site are shallow, with bedrock exposed in some areas and variations of cover from 0.5 m to up to about 1 m depth.

## 1.3 Environmental Planning and Assessment Regulation 2000

Under Schedule 2, Part 6 of the *Environmental Planning and Assessment Regulation (2000)* Environmental Impact Statements are required to evaluate and justify a development having regard to **biophysical**, **economic** and **social considerations** and the principles of Ecologically Sustainable Development (ESD).

The principles of ESD are as defined under the Regulation as the following:

a) the "**precautionary principle**", namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:

- (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
- (ii) an assessment of the risk-weighted consequences of various options,

(b) "**inter-generational equity**", namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

(c) "**conservation of biological diversity and ecological integrity**", namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

(d) "**improved valuation, pricing and incentive mechanisms**", namely,

that environmental factors should be included in the valuation of assets and services, such as:

- (i) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,
- (ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,
- (iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

## **2.0 PROPOSED DEVELOPMENT EVALUATION**

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### **2.1 Biophysical Considerations**

The proposed development is for a basalt quarry to provide a high quality material for primarily as a local resource for the local concrete company, Graham's Concrete and for aggregate for roads and infrastructure where currently aggregate is being imported from neighbouring Local Council areas.

#### **2.1.1 Surface Water**

The proposed development will be a 'pit style' quarry, retaining the side of the ridgeline and therefore, there will be no uncontrolled direct discharge of surface water from the site. Sediment ponds and secondary ponds are proposed to be installed, with only discharge to the ponds located outside the work area when the water quality is confirmed to be suitable for discharge.

#### **2.1.1 Noise and Blasting Impacts**

The noise impact assessment has determined that the predicted noise from machinery operating within quarry can be ameliorated and the Intrusiveness Criterion can be achieved at the nearest residences.

The traffic noise assessment prepared by this office, as part of the original EIS has also presented that the development can meet the Road Traffic Noise Criteria.

A Blast Impact Assessment has been prepared by this office and has concluded that adequate safe guards can be in place to achieve the NSW EPA criteria for vibration and air overpressure.

#### **2.1.2 Air Quality**

The Air Quality assessment undertaken by ERM with the conclusions of this assessment stating that the predictions present that the project will comply with both the short term and long term NSW EPA air quality impact criteria at all of the receptors.

#### **2.1.3 Ecological**

The Ecological Assessment undertaken by Landpartners and Australian Wetlands Consulting conclude that the proposed works will not result in any significant impact to any of the subject threatened species. The ecologist recommend that ecological offsets are proposed being a 'like for like' and 1:1 replacement of the trees to be affected. In addition to the offset planting, progressive rehabilitation will be undertaken which includes planting a variety of

trees at centres of approximately 40m<sup>2</sup> to create a woodland environment.

It is proposed that the offset planting will be undertaken on approval of the quarry, whereas the trees will be removed within the quarry footprint will be progressively, over the life of the quarry.

#### **2.1.4 Heritage**

Everick Heritage Consultants P/L have assessed the development proposal and have recommended that the project proceed with management and mitigation measures to reduce impacts to the Aboriginal cultural values. Such conclusions were:

- Continued consultation with the Aboriginal Stakeholders over the potential impact mitigation activities and other social benefits that may arise from the project;
- Protect the scarred trees through fencing and educating staff and contractors of the cultural significance of the trees;
- Have cultural heritage inductions;
- Suspend work if aboriginal human remains or cultural material is found at the site with authorities to be notified.

Everick Heritage Consultants P/L have concluded from the in-depth desktop assessment that the subject site do not contain items, objects or places of Historical Cultural Heritage Significance, and therefore there currently exist no Historical (Non-Indigenous) Cultural Heritage constraints upon the Project.

#### **2.1.4 Traffic Assessment**

The conclusions of the traffic assessment has presented that there will be no impact at the proposed extraction rate of 47,000m<sup>3</sup> nor at the lower extraction rate which Council is recommending of 23,500m<sup>3</sup>. The trigger for the upgrade of the bridge on Edenville Road will be determined by the volume of traffic using the local roads (bridge) and the delay time caused by the increased traffic volume. A report has been prepared by this office which demonstrates that the life of the Cedar Point Bridge, before it requires a second lane, is 51years.

At the time of upgrade, it is recommended that a second single bridge would be constructed to give two lanes. The approximate cost of a new single lane bridge is \$1million.

The critical factor in determine the need for the additional lane at the bridge is not the quarry, but the other traffic on the bridge. The quarry is limited to a fixed rate as a result of the development application and consent.

As the expected life of the quarry is 43 years, at the proposed DA extraction rate and 86 years at the Council's rate, as the resource is still available.

It is recommended that a Section 94 contribution plan be instituted by Council to allow connection from development in the catchment of the bridge. It is calculated that this figure should be about \$11,873 per equivalent tenement.

The share of the bridge upgrade by the proposed quarry is \$100,000 and it would be proposed that this could be paid at a rate of \$2000 per year for 50 years, in conjunction with the heavy haulage road maintenance levee.

### 2.1.5 *Amenity*

The quarry operations within the work area will not be visible to the surrounding locality due to the proposed retention of the side ridge. The haul road will be visible until such times that vegetation be established along the track.

## 2.2 **Socio-Economic Considerations**

It is predicted that there will be positive socio-economic impacts from the proposed development in the locality.

The primary reason for the establishment of the quarry is to provide high quality aggregate for Graham's Concrete for concrete products manufactured in Kyogle. Currently, the suitable aggregate product is being imported from outside the Local Government Area, such as from Blakebrook Quarry, near Lismore, which is more similar product to that of the subject site, or from other quarries which currently supply aggregate for concrete, within Richmond Valley Council or Ballina Local Government Areas being from Coraki or Alstonville respectively.

The opening of the quarry at this locality will reduce the number of trucks travelling on the roads, which will improve roads in certain areas, improve safety in certain area and reduce carbon emissions.

GHD (2005) state that there is a demand for aggregate and based on the South East Queensland growth, there is a total consumption of up to 10 tonnes per capita per annum up to the year 2026. The consumption of aggregate is based on not only products used directly by people such as purchase of rock for driveways for example, but within concrete material being slab on ground, which has increased in demand due to the introduction of BASIX requirements, ensuring energy efficient dwellings. The aggregate is increasingly used in road construction both in concrete and general road base. Based on the current population of Kyogle, the demand for aggregate could be estimated to be in the order of 98,700 tonnes.

Having a local resource will permit a reduction in costs for the end buyer, therefore allowing for more affordable housing.

The North Coast Extractive Industries Standing Committee identifies the subject quarry, as a quarry of **regional significance**. Furthermore, the Far North Coast Regional Strategy states that the growth potentials are identified and the proposed quarry does not seem to restrict proposed residential growth areas. The subject site is identified in the Kyogle Local Government area as an extractive and mineral resource, and is presented on the Natural Resources Map, as "employment opportunity". Therefore, there will be direct increase of employment at the site for people operating/managing the quarry. Other employment opportunities will arise from consultants involved with the compliance of the site and increase employment where product is used.

Furthermore, there is an increase in productivity at Graham's concrete due to the demand of the following:

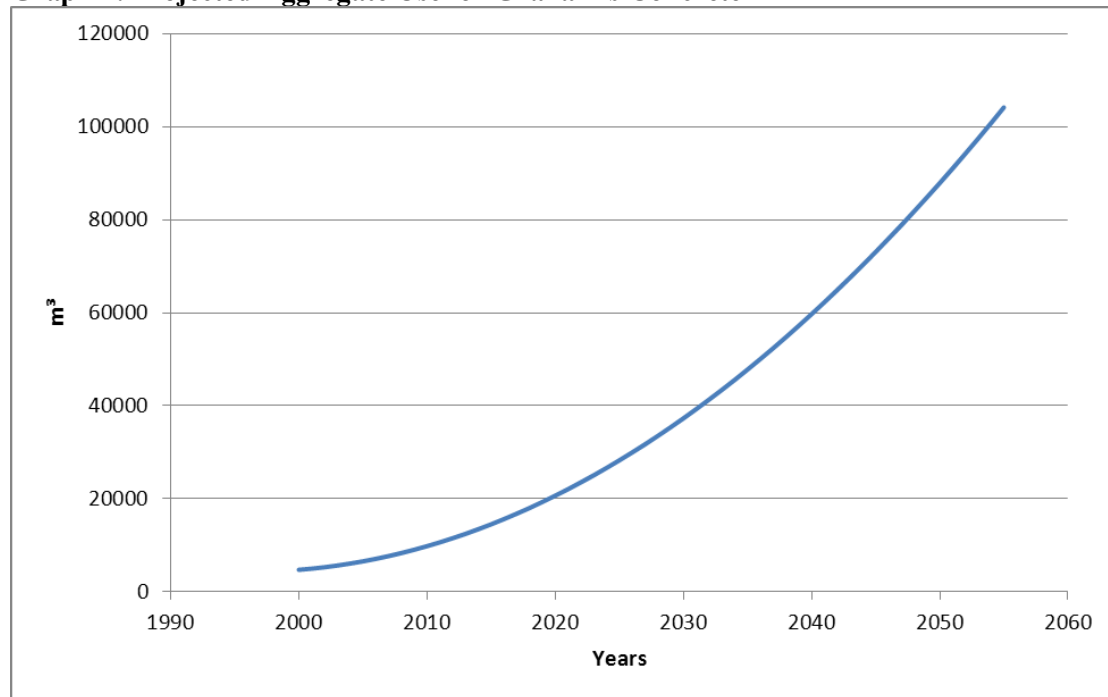
- Precast concrete grids certified to T44 standard;
- Headwalls to RTA specifications;
- Cattle troughs;
- Accredited Septic tanks;

- Subsurface flow wetlands for wastewater management

The demand for some of these products has risen over the years due to the durability of the products versus plastic equivalents.

Graph 1 presents the projected aggregate usage of Graham's Concrete alone based on past aggregate usage figures.

**Graph 1: Projected Aggregate Use for Graham's Concrete**



Graph 1 presents that by the year 2055, an estimated 69 000 m³ of aggregate will be required by Graham's Concrete, which is the proposed last year of the proposed quarry. In the initial years with the establishment of the quarry there will be limited amount of gravel being extracted, which correlates well with the requirements of Graham's Concrete plant. The projected demand for aggregate by Graham's Concrete plant as depicted in Graph 1 presents an availability of aggregate other private and public enterprises, such as Council, RMS and local property owners based on the proposed 47 000m³.

It is understood that there is demand for high quality aggregate within Kyogle Local Government area due to the absence of a similar quarry within the LGA.

The surrounding land use of the subject site has been considered as part of this development proposal and it is considered that the proposal would not adversely impact on these land uses, being rural residential and agricultural properties. The potential impacts on the surrounding developments from the quarry would be increased traffic, noise, dust and visual amenity, and these have all been assessed and remain within the relative criteria at the respective receptors.

It is considered that the proposal can be developed to ensure that the potential adverse impacts on the locality are controlled, which would result in the limited negative social impacts.

### **2.3 Ecological Sustainable Development**

Australia's *National Strategy for Ecologically Sustainable Development* (1992) defines ecologically sustainable development as: 'using, conserving and enhancing the community's

resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'. That is, the current generation should not adversely affect the natural environment which will be inherited by the future generation, and future generations also are to maintain and enhance the natural environment.

### ***2.3.1 Precautionary Principle***

An environmental assessment has been undertaken for the proposed development which has identified potential impacts and identified measures to reduce impacts and environmental degradation.

The proposal is in itself a destructive procedure and will alter the existing landscape which is the plateau along the ridgeline.

Scientific assessments have been undertaken to identify the potential threats to the environment and provide appropriate mitigation measures to minimise the impacts, which includes avoidance of areas. In terms of significance there are no significant features, ecological communities or significant fauna or flora that will be destroyed within the quarry footprint based on the scientific studies that have been completed to date. The significant areas have been identified, such as the scarred trees, and these will be protected. After each cell is completed, rehabilitation is to occur, and the site is to return to a grazing paddock which is the current use of the site.

### ***2.3.2 Inter-Generational Equity***

The proposed development is assessed in terms of the economic and social benefits on the wider community. The health, diversity and productivity of the environment have been assessed for the benefit of future generations. The quarry has a potential of supplying the local community with high quality product over 40 years.

As stated previously, a quarry supplying the quality of aggregate is not currently available within the Kyogle Local Government Area, and therefore the opening of such a quarry at this site will reduce impacts from trucks from other quarries on the local road network and investment will be put into local business with a direct benefit to the community with costs of products to be affordable due to haulage not having to be paid.

In addition to this, the local residences in the vicinity of the quarry will be protected through amelioration measures for the life of the quarry. Such measures include amelioration of noise, dust and upgrade and maintenance of the local road network. Furthermore, the current use of the site is for grazing of cattle and the site will return to the current usage progressively as the quarry moves through the cells. Each cell is required to be progressively rehabilitated prior to commencement of the next cell. From the archeological and ecological assessments undertaken, there appears to be no significant features, fauna or flora that will be destroyed as part of the quarry works. Features such as the scarred trees will be protected for future generations, and additional trees will be planted to encourage wildlife to the area.

### ***2.3.2 Conservation of Biological Diversity and Ecological Integrity***

The proposed quarry footprint has the potential to remove up to 246 native trees within the quarry footprint in accordance with the supplementary Ecological assessment by Australian Wetlands Consulting P/L. The assessment has presented that the trees for a disjunct woodland within a highly modified community which has been significantly cleared and under scrubbed with the groundcover now being pasture grasses. The continual grazing of the site has limited significant native regeneration occurring.

Two hollow bearing trees will be required to be removed, and other hollow bearing trees are

to be retained. Twelve dead trees will also be required to be removed for the proposed development, and dead trees elsewhere at the site are to be retained.

The findings of the assessment have concluded that the proposed works will not result in any significant impact to any critical or significant species, populations or communities.

Four Ecologically Endangered Communities have been identified at the site, being Lowland Rainforest, Subtropical coastal floodplain forest, Swamp sclerophyll forest, freshwater wetlands. These areas are not subject to disturbance from the proposed development, and the remote distance to the proposed quarry will ensure that there are no indirect impacts on these areas.

Furthermore, an added insurance of protection of these areas from the proposed quarrying activities will be from the pit style development of the quarry, which will prevent direct stormwater discharge from the site. Stormwater may be disposed to designated ponds beyond the quarry only at times when the water quality is suitable for discharge. Water quality testing is required to be undertaken prior to discharge, and the discharge point can only be to ponds and not the natural ground surface, as per the Soil and Water Management Plan.

### **2.3.2 Improved Valuation, Pricing and Incentive Mechanisms**

The product will primarily be used in the local area by the local concrete plant, which are also the proponents of the development. As there is a direct nexus of product to the market the cost of the product can be determined in order to ensure that the full lifecycle of the natural resources are covered.

As part of the proposed development, amelioration measures and safeguards are to be used in order to reduce potential impacts on the environment and neighbouring receptors, which includes noise amelioration through bunding; planting of replacement trees; soil and water management requirements etc. Monitoring is also required as part of the approval process which will ensure that compliance is met. A load based licensing approval is not proposed where there is a monetary figure for pollution of the environment, however, compliance to today's guidelines is to be met.

There will be a cost saving by the local concrete company for the product that they win from the site, as haulage costs will not have to be paid. The linking of the quarry to the concrete plant will allow for money to be put into the amelioration and site rehabilitation works.

As part of the development, local roads will be upgraded which will improve the standard of these roads for the commuters in this area. This is in addition to the S94 contributions payable.

## **3.0 ANALYSIS OF ALTERNATIVES**

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Section 7.1 of the EIS prepared by this office discussed the alternatives under 7(c) of the Environmental Planning and Assessment Regulation 2000, which is provided again as follows.

### **3.1 No Quarry**

An alternative is not to open the quarry at this site. Not opening the quarry at this property would then see no immediate environmental impacts. However, the site is disturbed through grazing, and there is a resource at the site which is in demand in the Local Government Area where resource of the similar type can not be sourced in the LGA, but from other quarries

such as Blakebrook.

There would be a loss to the community as Blakebrook, which is about 40 km from the proposed quarry site, and therefore trucks will pass the site to enter the Kyogle Township as they currently are doing. Generally contributions for trucks from quarries are payable based on a 15 km radius, with these contributions payable to the Local Government of that specific quarry. Therefore, if the quarry does not proceed, there will be no direct contributions payable to the Local Council to ensure that the roads are maintained, which will be damaged from the heavy vehicle use. Therefore opening the quarry will provide for the road network to be maintained which would benefit the wider community.

The alternative for supply of aggregate if this quarry were not approved is that roadbase and aggregate would need to be imported from more remote quarries. It may even be necessary for Council to import quality roadbase from approved sites such as Blakebrook owned and operated by Lismore City Council, which is about 40 km from the proposed quarry site. Good quality road base and aggregate is relatively scarce and the proposed quarry achieves that quality, for road construction and maintenance and concrete aggregate.

Opening of the proposed quarry would potentially reduce haulage costs and gravel cost to the community but certainly keep it comparable with the existing costs. This figure could be greater for certain work sites or if material were to be hauled from Blakebrook Quarry.

If the quarry was not opened there would be a potential loss of affordable housing that could be provided and potential loss of valuable construction materials sourced from within the Kyogle LGA.

### **3.2 Smaller Quarry Footprint**

The option of a smaller quarry was considered, and infact the current size quarry has been reduced from that original proposed in 1997 which was over additional, neighbouring properties, and has also reduced from the original proposal for this site which was 16 hectares. The current work area footprint is approximately 11.2 hectares. A smaller footprint then the current shape could be uneconomical to establish operate, and hence it would be unlikely that the quarry would be opened. This would see a loss of use of the valuable resource.

## **4.0 CONCLUSION**

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The EIS and the supplementary information has assessed the potential environmental impacts of the proposed quarry at Lot 1 DP 366036 and Lot 12 DP 582916, Edenville Road, Cedar Point. The assessment has presented that there is a large volume of resource available along the ridge which continues for several kilometres, however, a proposal for an extraction area of only approximately 11.2 hectares is sought.

Considerations have been made for Ecological Sustainable Development (ESD), being biophysical, economic and social considerations.

The scientific assessments have identified the potential impacts of the proposed development, and have addressed the required mitigation measures, including avoidance such as avoiding and protecting the scarred trees located near the entrance to the proposed quarry site.

The proposal has been in a way to limit the impacts on the local community, and improvements to the local road network are proposed. Air quality modelling has been

undertaken which presents that there will be no impacts on the neighbouring dwelling which was conservatively based on the quarry operating 365 days per year.

The proposed quarry contains high quality basalt rock, which are required for the constriction of buildings and roads, with the primary requirement for supplying the local concreting plant for precast concrete products, including certified septic tanks, head walls etc as well as supplying concrete for local development. Currently aggregate of similar nature is imported from the neighbouring Local Government area and therefore the opening of the local quarry will reduce the impacts on the local road network, provide direct money from the quarry to the local community through S94 contributions and employment.

The potential impacts of the development have been presented and amelioration measures are proposed within the EIS and the quarry operators will require to conform with conditions of consent from Council and the Environmental Protection License from Office of Environment and Heritage.

## REFERENCES

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