APPENDIX 3

Socio-Economic Assessment

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Lynwood Quarry Project

Socio-Economic Assessment

Prepared for

Readymix Holdings Pty. Ltd.

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EXECUTIVE SUMMARY

This report provides a description of the social and economic impacts of a proposal by Readymix Holdings Pty Ltd (Readymix) for the establishment of a new high grade hard rock quarry south west of Marulan. Marulan is located approximately one kilometre from the quarry project area boundary.

Readymix currently operate a smaller quarry at Johniefelds near Marulan which supplies the local and regional market. This development is planned to ensure the uninterrupted supply of hard rock for construction, roadworks and concrete manufacture for the local and Sydney markets. To access these markets, the proposed Lynwood quarry is strategically situated adjacent to rail and road infrastructure.

This report documents the comprehensive social impact assessment and community participation program which enabled the identification of important community issues and social impacts as well as the proactive strategies that have been developed to address these issues.

Marulan is situated in the Southern Tablelands of NSW, about 2 hours drive from Sydney along the Hume Highway and around an hour from Canberra. The area has long had strategic importance as it offers the only easily navigable path across the Great Dividing Range in the region.

After the regional service centre of Goulburn, Marulan is the second largest town in the region. At the time of the 2001 census, Marulan had a recorded population of 442. This includes a 23% population increase since the 1991 census. The trend towards a larger population has continued since the 2001 census and is predicted to continue due to the relative proximity of the township to Sydney and the affordable prices in the region. The growth of Marulan is likely to be substantial in the coming years with one study projecting a “most likely” population of 2850 by 2016 (SGS Economics and Planning Pty Ltd 2003). The Goulburn Mulwaree Local Government is proactively managing this growth to ensure a sustainable future.

A range of survey methods were used to obtain the views and perceptions of the proposed Lynwood Quarry from Stakeholders in and around Marulan. These methods differed according to whether the people consulted were adjoining property owners, members of special interest groups or members of the wider Marulan

community. In the first two cases, personal consultative methods were employed such as face-to-face semi-structured interviews. On the other hand, a random telephone survey was undertaken of 174 households in Marulan and surrounding areas to ascertain the perceptions of the wider community. A number of other methods were also used, primarily to provide information to the community. These included detailed Community Information Sheets which were circulated to over 200 households in the area and an Open Day which was held on 12 March 2005.

The issues raised by Stakeholders centred on the perceived environmental impacts of the proposed Lynwood quarry. These included, in order of importance, dust, blasting, transport; noise; water; property value and flora and fauna. In addition, the issue of potential contribution to the community was discussed.

A random telephone survey was conducted to ascertain the attitude of the wider Marulan community toward the proposed quarry. Respondents were asked a number of questions which examined knowledge and awareness of the proposal, beliefs about the potential impacts of the proposal, evaluative judgments about the proposal, attitudes towards the proposal and questions relating to the social and demographic characteristics of respondents. Attitude statements were also used to assess community attitudes towards the quarry proposal.

In summary, the results of the survey indicated that awareness of the quarry proposal was high, with 85% of respondents aware of the proposal. Forty-one percent of all survey respondents indicated that they had no specific knowledge of the proposal. The majority of respondents (80%) indicated that they either 'strongly approved' or 'approved' of the quarry proposal. Over half (55%) of all respondents indicated that there were no impacts or issues of concern associated with the proposal. Of the remaining respondents, 24% raised the issue of dust from the operation. Other impacts of quarry operations were traffic congestion caused by trucks from the quarry (12%), and noise from quarry operations (12%)

Attitude statements indicated that while a significant percentage of the community believe the quarry will go ahead regardless of what the community thinks (52%), the majority of residents trusted the development approval process that is being undertaken for the quarry (74%). In addition, the majority of respondents (79%) believed that the benefits a quarry would bring to the area would outweigh any of the disadvantages. Nearly all respondents (92%) believed the proposed quarry would

make an important contribution to the local economy in the region and that it would not detract from the area (78%)

The key economic impacts of the construction and operational phases of the proposed quarry are significant and result largely from the increased workforce associated with the two phases.

The economic impacts of the construction phase are based on a two year construction period with a peak construction workforce of 140. It is estimated that of this construction workforce of 140, 119 (85%) will reside in Goulburn, 14 will reside in Marulan (10%) and 7 (5%) will reside outside the Mulwaree LGA. The key construction impacts are therefore estimated to be:

- Household Expenditure: Over a two year construction period household expenditure by construction workers is likely to be $7.9 million in Goulburn, $1.4 million to areas outside the Mulwaree LGA and $0.5 million within the town of Marulan.
- Salaries and Wages: Of the $14.8 million in annual gross salaries and wages paid to the construction workforce, $5.9 in additional gross salaries and wages income will be generated in the local Mulwaree economy.
- Capital Expenditure: The capital expenditure associated with construction is estimated to be approximately $150-195 million on completion of the project. Much of the direct and indirect economic benefits associated with the purchase of capital expenditure items required in construction is likely to occur outside the Mulwaree Shire, primarily within the Sydney metropolitan area.

As far as the operational phase is concerned, it is estimated that there will be an operational workforce of approximately 115 employees. In the initial years it estimated that employees will reside in Goulburn and other rural towns (75), Marulan (34) and locations outside the Mulwaree LGA (6). After several years of operation, it is estimated that the majority of employees would reside in Marulan (92), with additional employees in Goulburn and other rural towns (23). The predicted economic impacts caused by the operational phase are:

- Job Creation: The estimated 108 direct jobs that are created within the Mulwaree LGA, will create an additional 129 additional jobs in other sectors of the economy within the Mulwaree LGA.

- Household Expenditure: In the initial years of quarry operations, it is estimated there will be $4.2 million in annual household expenditure occurring within Goulburn, $0.9 million occurring within Marulan and $0.9 million to locations outside the Mulwaree LGA. It is likely that after several years of established quarry operations the workforce will increasingly reside in Marulan and household expenditure will increase in Marulan.
- Salaries and Wages: In relation to the operational workforce the direct payment of $9.1 million in annual gross salaries and wages would lead to an additional $6.7 million in annual income being generated in other sectors of which $4.5 million would be additional household expenditure.
- Population Impacts: Family size multipliers of 3.5 indicate that on commencement of quarry operations, the Marulan population would increase by an estimated 27% from the population of 442 at the time of the 2001 census. After several years of quarry operations it is expected that the greater proportion of the Readymix workforce will live in Marulan. This predicted population increase will occur within a planned period of rapid urbanisation, as outlined in the Mulwaree Shire Council Settlement Strategy (Goulburn Mulwaree Council 2004).

These predicted economic impacts, especially those resulting from the predicted population increase during the construction and operation phase raise issues that need to be addressed by the Goulburn Mulwaree LGA. If these impacts are well managed, they represent a significant opportunity for the development of Marulan.

To address the issues raised by the community, a range of mitigation strategies have been employed. These include:

- Minimising the impact of noise and blasting through the implementation of noise controls to minimise the noise created by quarry operations, particularly at night;
- Minimising transport impacts on the population of Marulan by constructing a new interchange on the Hume Highway to give operational traffic direct access from the quarry onto the Highway, and routing construction traffic through the Marulan light industrial area;
- Minimising the impact of dust from the quarry on Marulan's air quality through the implementation of dust control measures;

- Minimising the visual impact of the quarry and emplacement areas through planting screening vegetation and trees;
- Minimising the effect of the quarry on ground and surface water through separating clean runoff and re-using water from the disturbed areas; and
- Minimising the impact of the quarry on threatened fauna species through the implementation of fauna and flora management measures;
- Communicating the impacts resulting from an increase in population with the departments and agencies responsible for planning and providing services such as housing, health and education; and,
- The development of a Readymix community contribution program.

The effectiveness of these measures will depend upon ongoing consultation with the community and monitoring of impacts.

1. INTRODUCTION

Readymix Holdings Pty Ltd (hereafter referred to as Readymix) proposes to establish the Lynwood Quarry, a new hard rock quarry south west of Marulan adjacent to the main southern railway line. The quarry project area boundary is approximately one kilometre from Marulan and Readymix owns all of the land proposed for quarrying and associated infrastructure. A buffer has been created between the quarry and the rural residential area to the north-east of the site.

Readymix currently operate the existing Johniefelds hard rock quarry located on Brayton Road, approximately 4km from Marulan. The existing quarry primarily supplies local and regional markets. The proposed quarry, to be known as the Lynwood Quarry, will ensure the uninterrupted future supply of high grade hard rock for concrete, road base and other heavy construction and building products to Sydney, regional and local markets. The proposed quarry is strategically located adjacent to major transport links providing ready access to major markets.

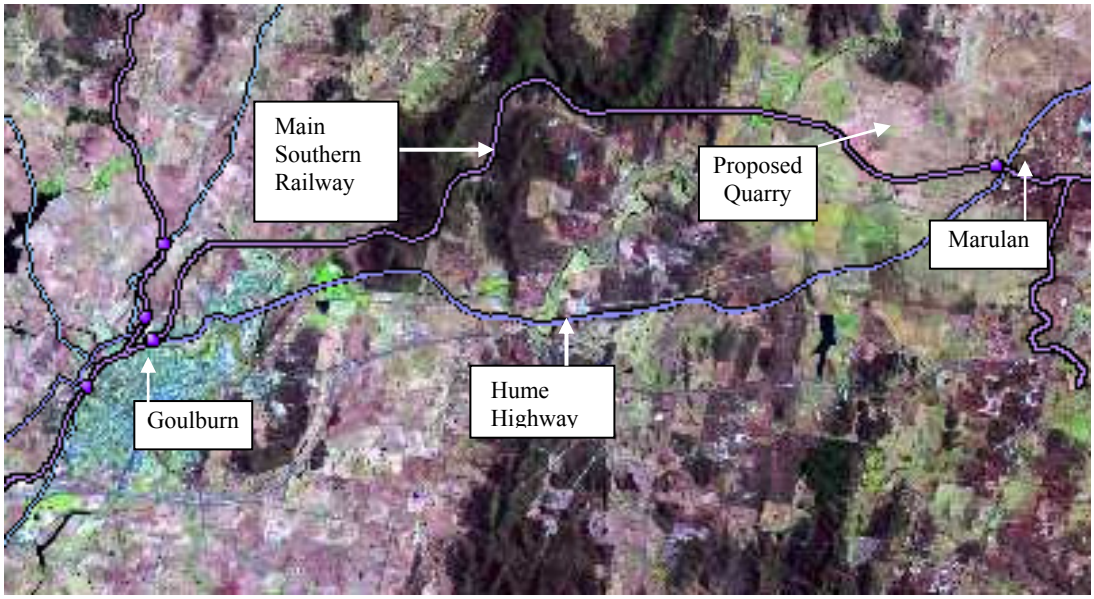

Figure 1 Location of the proposed quarry

The proposed Lynwood Quarry is of significant regional importance and is expected to produce approximately five million tonnes of hard rock each year (5 Mtpa). Initial approval is sought for a 30 year life but quarry reserves are sufficient for a life of over 50 years. Alongside the quarry pit will be a processing plant, a dedicated balloon rail loop and loading facility and access and haulage roads to the Hume Highway. The rail line will be used in the transport of quarry materials to markets in Sydney which will account for between 80-90 percent of material. Road transport

will be used in supplying quarry materials to local and regional markets. Figure 1 shows the location of the quarry in relation to Marulan, the railway line and the Hume Highway.

The proposal has been defined as a State Significant development proposed to extract more than 200,000 tonnes per year, and has a total resource of more than 5 million tonnes. This requires approval from the Minister for Infrastructure, Planning and Natural Resources. In addition, it is a designated development under Schedule 3 of the *Environment Planning and Assessment Regulation* 2000 (Umwelt Environmental Consultants 2004).

This report addresses the socio-economic effects of Readymix's proposal to establish the Lynwood Quarry near Marulan, NSW. The report details the comprehensive socio-economic impact assessment and community participation program which has enabled the identification of salient community issues/impacts associated with the proposal and the identification of proactive strategies to address these issues.

The report begins with an overview of the methodology employed in the socio-economic assessment (Section 2). Section 3 provides a detailed profile of the Marulan and the Mulwaree Local Government Area that includes geographic description, demographic details and social infrastructure information. In 2004, part of the Mulwaree LGA was incorporated into the new Goulburn Mulwaree LGA. The 2001 census details and subsequent social and economic analyses therefore refer to the previous Mulwaree LGA.

Section 4 identifies perceived social impacts associated with the proposal from the perspectives of the general community, Marulan residents living in proximity to the Project Site and Marulan landowners residing in other localities, outside of Marulan This is followed by Section 5 which investigates the economic impacts of the proposal based on surveys of existing Readymix employees and existing customers of Readymix. Section 6 of the report provides an outline of potential strategies to mitigate the issues raised by the community. This section also outlines the need for the development of a program for monitoring predicted and unanticipated socio-economic impacts and further involvement of Readymix in the local community.

2. METHODOLOGY

2.1 Overview

Socio-economic assessment is concerned with assessing and predicting the likely consequences of a proposed action in both social and economic terms. While economic assessment emphasises the monetary effects of an action or proposal, social impact assessment is concerned with assessing benefits and costs in non-monetary terms. This involves understanding impacts from the perspectives of those involved in a personal, community, social or cultural sense. Social and economic assessment processes work together to provide a complete picture of impacts and their meaning.

2.2 Social Impact Assessment

Social impact assessment is a tool used to predict the future effects of a particular proposal on people, that is their way of life (how they live, work and interact with each other); their culture (norms and traditions); and their community (institutions and structures) (Armour 1990).

The social impact assessment process has a number of phases. These include:

- Assessment and evaluation of issues, which includes:
    - Profiling to understand the community; and,
    - Scoping to identify Stakeholder issues;
- Prediction of the likely effects of the project;
- Mitigation or working with the community to develop appropriate strategies; and,
- Monitoring and management of the issues throughout the life of the project.

The *Assessment* component refers to the determination of the potential impacts of a proposal before the change has taken place. This phase involves two key activities: *profiling* and *scoping.*

Profiling involves the documentation of the social environment in order to develop a more detailed understanding of the historical background of the community, contemporary issues, political and social structures, culture, attitudes and basic

socio-economic characteristics. This profile is then used as a basis from which impact predictions can be made.

Scoping involves identifying the important issues that relate to the proposal and describing areas of likely impact. Impact analyses are likely to be inaccurate if they discount the effect of people's values, social dynamics and beliefs about particular events. As Ross (1990) outlines, those people directly affected are in the best position to say how they actually experience events, and people's own predictions, in the form of optimism and fears, are a significant component of their behaviour and hence social impacts. Once identified, these impacts are then evaluated to determine the probability of occurrence and the importance of impacts to those affected.

Burdge (2004) has identified a range of social impact variables that point to measurable change in human populations, communities and social relationships resulting from development projects. These include population impacts, community/institutional arrangements, conflict between local residents and newcomers, individual and family level impacts and community infrastructure needs.

A list of the variables relevant to the current proposal is presented in Table 1.

Table 1 Social Impact Assessment Variables

Community/Institutional Arrangements
• Formation of attitudes towards the project • Interest group activity • Alteration in size and structure of local government • Presence of planning and zoning activity
Individual and Family Input Levels
• Perceptions of public health and safety
Community Infrastructure Needs
• Land acquisition and disposal • Effects on known cultural, historical and archaeological resources

Source: Burdge (2004)

The salience of particular social assessment variables may vary according to the particular development project. For example, a mine development may result in the influx and outflux of workers from a community. In relation to the current proposal, the most relevant variables have been highlighted in Table 1. These variables are discussed in more detail in the concluding section of the report.

As is the case with any type of change, some individuals or groups within the community may benefit, while others may experience costs or losses. If negative

impacts are predicted, it is the role of social impact assessment to determine how such impacts may be ameliorated or mitigated to produce the minimum degree of social disruption to those affected. Monitoring is also a key component of the social impact assessment process, and a program should be developed to identify deviations from the proposed action and to document any unanticipated impacts that may arise in the implementation phase.

Community involvement is an integral part of any social assessment process, and there are a variety of different ways of involving the community and collecting relevant information. The full range of methods and mechanisms used to collect, communicate and disseminate information about the proposal are outlined throughout this report. The methods listed in Table 2 have been used to obtain specific information/data relevant to the current assessment.

Table 2 Social Assessment Methods Adopted for the Lynwood Quarry Proposal

Method	Description
Documentary analysis	Collation, examination and review of relevant reports and studies relating to the assessment area
Social indicators analysis	Examination of census data and other community data sets to develop detailed profiles of townships in the assessment area
Media review	Extensive review of local media to identify community issues associated with quarrying in the area
Personal Interviews	Semi-structured interviews with Stakeholder groups across the community e.g. local residents, government agencies to identify salient community issues and to assess likely impacts of the proposal
Community Presentations	Presentations to community groups to outline and provide feedback on the project.
Open Information Day	Open Information day to present the outcomes of the environmental and social impact assessments and to enable questions to be asked of the project team.
Surveys	Survey of the wider community to identify attitudes towards the proposed quarry.
	Survey of company employees to determine industry and employee expenditure and residential patterns

Where possible, data/information has been collected using a range of methods and techniques. This approach referred to as 'triangulation' has been used to account for some of the problems inherent in the use of single methods, and assists in addressing issues associated with data reliability and validity.

2.3 Economic Impact Assessment

The economic assessment associated with the proposal is based on information provided by Readymix, a survey of existing employees and a survey of existing customers of Readymix's operations in the area. This information has been used to predict likely economic impacts resulting from the proposal and is discussed in detail in Section 5

3. SOCIAL PROFILE OF MARULAN

This section of the report provides a profile of the town of Marulan within its geographical, historical and social context. It contains the following sections:

- Geographical Location
- Local History
- Demographic Profile
- Community Issues
- Development History and Media Review

The report focuses on the town of Marulan and the Local Government Area (LGA) in which the township was based, at the time of the last census - the Mulwaree LGA. The town of Marulan was part of the Mulwaree LGA until 11 February 2004 when, as part of several regional local government amalgamations and boundary changes, the part of the Mulwaree LGA containing the town of Marulan was incorporated into the much larger Greater Argyle Local Government Area. Following a request from Council, the name of this new council was changed to the Goulburn Mulwaree Council on 6 October 2004 (New South Wales Local Government Boundaries Commission 2004). The boundaries of the Mulwaree LGA and the location of Marulan are shown in Figure 2.

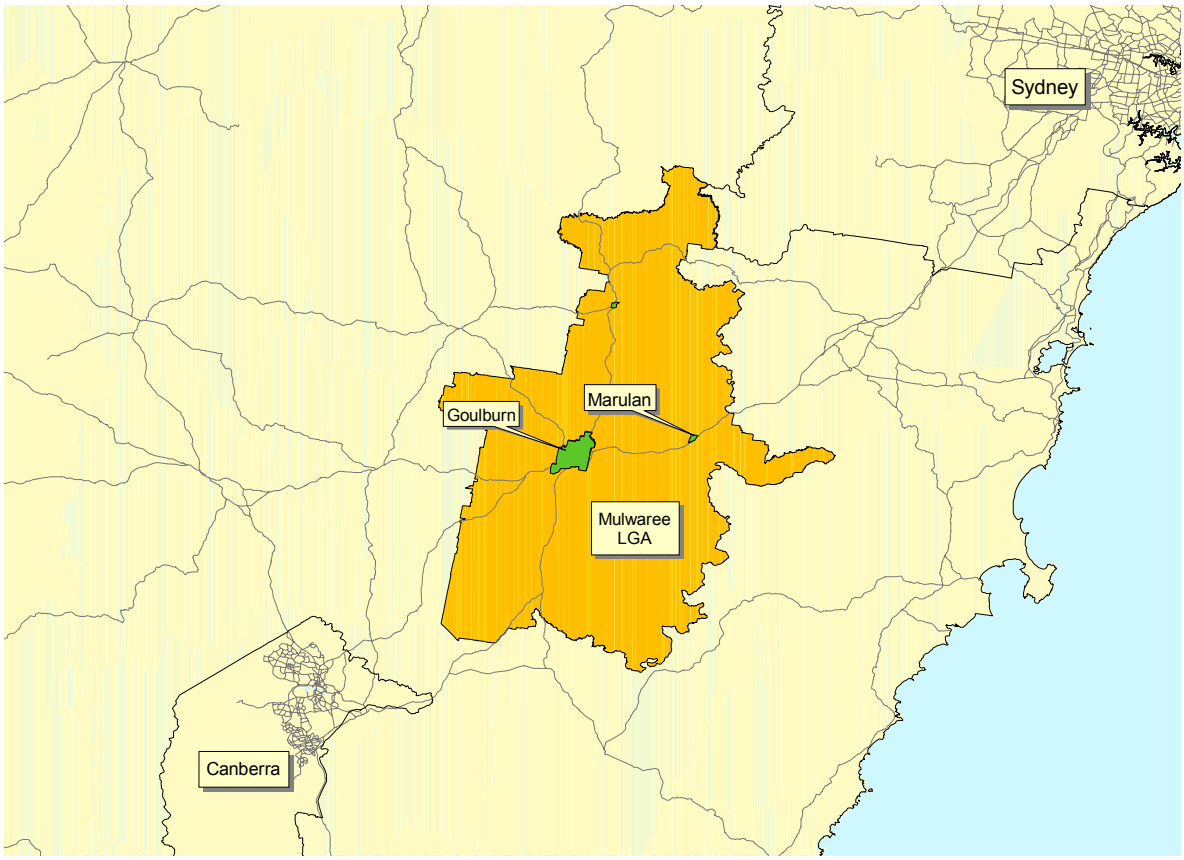

Figure 2 Map of the Mulwaree Shire showing Goulburn and Marulan *(Source: CDATA2001, Australian Bureau of Statistics, 2001)*

3.1 Geographic Location

The town of Marulan and the Goulburn Mulwaree LGA are situated in the Southern Tablelands of New South Wales. The region is strategically located along the Hume Highway, approximately 2 hours drive South-West of Sydney and around an hour from Canberra. Within this district, Goulburn, with an estimated population of 21,400 at the 2001 census, is the largest settlement in the region and serves as a regional service centre. After Goulburn, the town of Marulan, with an estimated population of 442 in 2001, is the next largest township. It is located 164km South West of Sydney, just off the Hume Highway, and 27 km from Goulburn.

The local economy of the area is primarily agricultural with an emphasis on sheep farming. The area also supports some tourism-related activities due to its proximity to Sydney and the number of national parks (Figure 3) and other natural attractions.

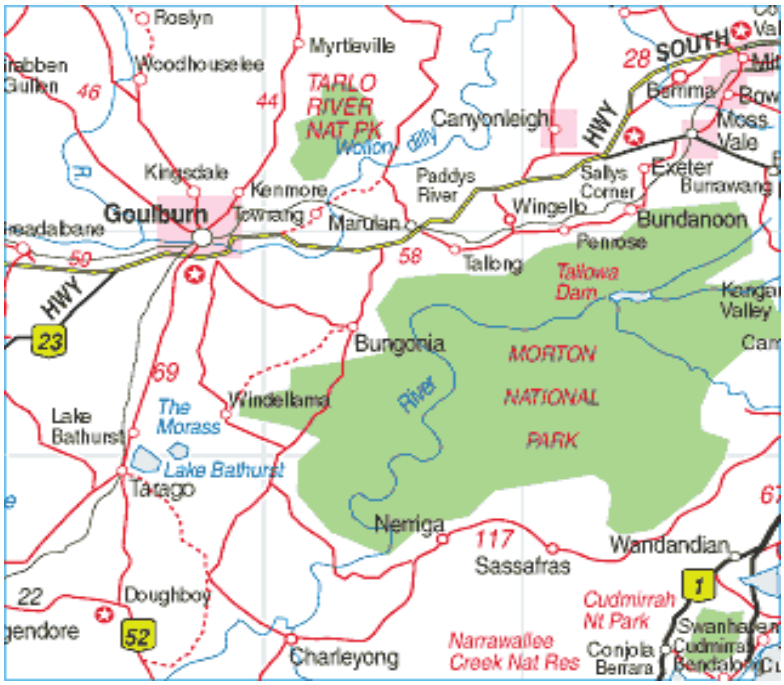

Figure 3 Map of Marulan and Goulburn
(source http://www.wilmap.com.au/)

3.2 Local History

The area around what is now called Marulan has long been an important area because it offered the only easily navigable path across the Great Dividing Range in the region. As such, the area has an important Aboriginal and European History.

3.2.1 Aboriginal Heritage

Marulan is an Aboriginal place name and, according to the Goulburn Historical Society "Origin of Place Names" the correct spelling of the original name is "Murrawoollan". Archaeological excavations near Canberra suggest that there has been Aboriginal occupancy of the area for at least 15,000 years (Eddy 1985).

Marulan is thought to be virtually at the junction of four Aboriginal territories. These include two larger inland territories and two smaller coastal territories. The Gundagarra linguistic group were thought to have occupied the territory inland and to the north of Marulan, whereas the Ngunawal territory was thought to have stretched from Canberra in the south-east and to have included the current settlement of Goulburn. The Wodi-Wodi's territory was thought to have stretched along the coast, north-east of Marulan and from Shoalhaven River to Wollongong. The Wandanian territory was thought to have been south of Marulan, from Ulladulla to Nowra (Eddy 1985).

As a result of its location, as an easily navigable pass to the highlands and the relatively neutral junction between different Aboriginal territories, the Marulan area was apparently a common meeting place and crossover point for Aboriginal groups. There are a number of Aboriginal heritage sites in the area including camp sites and a quarry where material for implements was obtained (Eddy 1985). These are discussed in detail in the Aboriginal Heritage Report in the EIS.

3.2.2 European Heritage

The first European exploration of the area occurred in 1798 but it was not until twenty years later in 1818 that the Goulburn plains and Lake Bathurst areas were discovered by Europeans. Within two years, land grants and settlement of the area occurred.

Marulan was originally established as a private village in the 1820s at the junction of Bungonia Road and the Great Southern Road. The town of Marulan was officially gazetted in March of 1835 but it was not until 1868, with the construction of the Great Southern Railway, that substantial growth of the town began.

This precipitated a chapter in Marulan's history that is probably unique in Australia (Eddy 1985). The original town of Marulan, now called "Old Marulan" was located 2.5 km east of the railway and the economic impact of the railway caused settlement to move closer to the railway line. An article that appeared in the Sydney Morning Herald on 12th May 1868 described the impact of the railway, "The railway crosses the main road at right angles to the little township of Mooroowoolen… Marulan is a curiosity in townships. At one time it was a thriving busy place, but now the buildings are going to decay, and there seems little prospect of improvement".

The original town centre eventually closed and was relocated. The new settlement of Marulan was opened in 1878 and "old Marulan" is now a registered state heritage area.

The history of Marulan has been shaped, like many towns of its kind, by the development of the railway and then the Great Southern Road. The Great Southern Road, originally built by convict labour, was made a State highway in the late 1920s (Hume Highway). Until the late 1980s when the current freeway was built, Marulan was a highway town. Its location on the highway and the fact that trucks could not bypass the town meant that it was a perfect place for a truck checking station. The

first station was built in 1931 and replaced in 1958 and the 1970's – the station can still be seen today.

The current freeway bypasses Marulan, and consequently the township has reverted to a quieter town, utilised as a stop over destination for travellers and truck drivers. Marulan has, more recently, been experiencing a period of reasonably rapid growth and development. This is discussed in more detail under Community Issues.

3.3 Demographic Profile

This section presents an analysis of Marulan's social demographics from the Australian Bureau of Statistics census collected in 2001. The tables on which the analysis is based can be found in Appendix 1.

3.3.1 Population and Dwellings

As can be seen in Table 3 in Appendix 1, in 2001 Marulan had a population of 442 who were accommodated in 171 occupied dwellings. There has been a noticeable population increase in the region since 1991 with a 23% population increase within Marulan and 27% increase in population within the Mulwaree LGA broadly. Based on the Mulwaree Shire Council Settlement Strategy and the Goulburn and Mulwaree Demographic Profile and Projections Report, this trend in population increase is likely to increase substantially. The Goulburn Mulwaree Council has acknowledged the Mulwaree Shire Council Settlement Strategy as its policy on Rural Settlement (SGS Economics and Planning Pty Ltd 2003; Goulburn Mulwaree Council 2004).

The population is also relatively mobile and in 2001 42% of the population in Marulan indicated they were located at a different address five years ago. This level of mobility is also significantly higher than that of the LGA, with 33% of people in the Mulwaree LGA indicating that they had lived at a different address 5 years ago. In both Marulan and the Mulwaree LGA there has also been a trend towards smaller families with a decline in occupancy rate of households from 2.8 in 1991 to 2.6 in 2001.

3.3.2 Housing Tenure

Table 4 in Appendix 1 indicates that in Marulan, since 1991, there has been a significant decline in the number of houses that were fully owned (-18.7%) and an increase in the number of houses being purchased (+20.4%). In contrast, since

1991 in the Mulwaree LGA there has only been a 2.8% decline in the number of houses fully owned and a 0.8% increase in the percentage of houses being purchased.

3.3.3 Community Age Structures

As can be seen in Table 5 in Appendix 1, Marulan has a comparatively young population, with the percentage of Marulan's population above 40 years below that found in NSW. In contrast, the percentage of young people below 24 years of age is above that found in NSW. This translates into a significantly higher child dependency ratio (the proportion of people below 15 years for every 100 persons of working age) in Marulan and the Mulwaree LGA when compared to that of NSW. Similarly in Marulan and the Mulwaree LGA, and again in contrast to many areas in NSW, the percentage of elderly in the population as evident in the elderly dependency ratio is significantly lower than that of the State.

3.3.4 Highest Level of Schooling

Table 6 in Appendix 1 shows the 2001 education levels of the population of Marulan and the Mulwaree LGA. This table indicates that in 2001 42% percent of people in Marulan and 32% of the Mulwaree LGA population Year 10 as their highest level of education compared to 27% of the NSW population.

3.3.5 Birthplace by Region

Table 7 in Appendix 1 shows that in 2001, 85% of the population within Marulan and 77% of the population of Mulwaree LGA were Australian born. This is higher than the NSW State average of 70%. The major group of non Australian born residents in Marulan is from North West Europe (6.7%)

3.3.6 Family Composition

Table 8, in Appendix 1 shows that the 2001 census recorded a significant increase in Marulan since 1991 in the number of people in families with children (+7.2%) and the number of one parent families (+7.5%). In 2001, Marulan's number of people in families with children and one-parent families exceeded the NSW State average. In contrast in the Mulwaree LGA there has been a decline since 1991 in the number of people in families with children (-10.4%) and an increase in the percentage of people in families without children (+6%).

3.3.7 Weekly Household Income

Table 9 in Appendix 1 indicates that, at the time of the 2001 census, Marulan and the Mulwaree LGA had a greater percentage of households on low and middle incomes and fewer households on high weekly incomes, when compared to the State average,

3.3.8 Industry of Employment

Table 10 in Appendix 1 shows that, in relation to industry of employment, Marulan is primarily a retail location with a relatively high percentage of employment in the retail sector and the transport and storage sectors. There are also a relatively high percentage of people employed in mining compared to NSW, but the absolute number of those employed in this sector is relatively small. Outside of Marulan and within the LGA of Mulwaree, there is a relatively high percentage of employment in agriculture, forestry and fishing.

3.3.9 Labour force Characteristics

Table 11 indicates that the percentage of persons employed full-time in Marulan has increased between 1991 and 2001 while the percentage of part-time employment has decreased. However, relative to the NSW State percentages, there are fewer people employed full time and a higher percentage of people employed part-time.

Since 1991 the unemployment rate has declined in Marulan and the Mulwaree LGA

3.4 Community Issues

Several studies that have been recently commissioned on Marulan and its surrounding regions, provide an indicator of likely trends in community composition, and subsequent reaction to changes that may occur in the area. The Mulwaree Shire Settlement Strategy (Mulwaree Shire Council 2003), the Goulburn and Mulwaree Demographic Profile and Projections (SGS Economics and Planning Pty Ltd 2003) and the Cultural Map of Mulwaree (Mulwaree Shire 2004) were reviewed to assess historical response to change. This review has revealed issues that are relevant for the Mulwaree Shire in general and Marulan in particular. These issues assist in shaping an understanding of the community and are discussed in detail in the sections below.

3.4.1 Growth

The growth of Marulan is an issue that is closely linked to the town's identity and is a matter of significant local concern. This was discussed in the Mulwaree Shire Settlement Strategy (Mulwaree Shire Council 2003). The goal of the strategy is "Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends" (Mulwaree Shire Council 2003).

This strategy's aims were to draw the community and their resources together in an economically, environmentally and socially sound manner to ensure a sustainable future for the area.

To ensure this sustainable future, the strategy considered the high cost and limited availability of land in Sydney. In addition, there is limited land available for development between Mulwaree and Sydney.

Marulan now has relatively good access to Sydney, via the M5, and a logical way identified to ensure the sustainability of Marulan is to develop the affordable and available land that Marulan has to offer. This course of action would also provide employment opportunities for community members. The strategy therefore proposes the: "promotion of the growth of Marulan for urban related uses, subject to connection to sewerage, allocation of water and normal planning considerations" (Mulwaree Shire Council 2003). This is to be achieved though a re-zoning proposal that would afford a further 1000 allotments. The re-zoning would also allow existing land owners of at least 40ha to subdivide their land into allotments.

While the Shire is encouraging the growth of the centre, it appears that they have a clear objective to consider the environmental and social impact of change through both long and short term goals that embrace the needs and considerations of community members. The growth of Marulan is a significant issue particularly as changes to geographic and social geographic character of the town will ultimately impact on community identity.

Marulan is already undergoing considerable change and, over the past ten years, has experienced considerable growth. This growth is not across all age groups but seems most pronounced in the under 14 and 40 to 60 year age groups with comparatively few young adults. This trend is indicative of second home buyers interested in adopting a rural lifestyle but with the flexibility of access to centres such

as Sydney and Canberra. Furthermore, it suggests that the types of individuals moving to the area are those with non- dependent children, or in search of a second home.

Generally it has been suggested that the population increase in the area is affected by population pressures in Sydney, affordable prices in the region, the availability of larger areas of land, and the desire for a less urbanised lifestyle for family reasons (SGS Economics and Planning Pty Ltd 2003).

3.4.2 Sustainability

In April 2003, Goulburn and Mulwaree Local Government Authorities commissioned SGS Economics to compile a "Goulburn and Mulwaree Demographic Profile and Projections Report" (SGS Economics and Planning Pty Ltd 2003).

This report examined the existing population, social and economic information on Mulwaree and the nearby service centre of Goulburn. It also examined regional demographic trends before preparing demographic projections for the following 10-15 years, based on the Mulwaree Settlement Strategy discussed above. This information was then assessed and interpreted for the Mulwaree LGA.

The report predicts that it is likely that Marulan will grow significantly in the next decade with a predicted six-fold increase in population – from a population of 442 at the 2001 census to a "most likely" population of 2850 by 2016 (SGS Economics and Planning Pty Ltd 2003).

The report cautions that the development of Marulan should be well managed to ensure that it retains its sense of place. This is particularly relevant given Marulan's current small size. The report also states that the near 1000 lots proposed through subdivision would only account for 26% of the estimated growth that is predicted over the next 15 years in the region. This requires proactive management on the part of the Local Government Authority to ensure that there is sufficient land, infrastructure and associated services.

3.4.3 Connectedness

The issue of connectedness is relevant for the people of Marulan. While the Cultural Map of Mulwaree (Mulwaree Shire 2004) addressed identity, it was also concerned with Marulan's connectedness with other centres. For example, the

internet has provided a medium in which exploration and communication within and between towns provides an opportunity to explore linkages with Sydney and Canberra (Mulwaree Shire 2004).

While there is potential for conflict between the issues of growth and sustainability versus Marulan's identity and sense of place, the issue of connectedness is a common thread in this discussion.

Growth and sustainability appear to have been addressed through the desire to encourage migration to the centre, while simultaneously, the cultural map places an emphasis on encouraging the recollection of history of the region to provide connectedness in the lives and experiences of the people who reside in the area (Mulwaree Shire 2004).

3.5 Development History and Media Review

A review of local media was carried out as part of the social profile to identify general community trends/attitudes towards development in the Marulan area. The review focused on print media from 1994 to 2005, through an analysis of the Goulburn Post. This is a daily newspaper focused on events occurring in the Goulburn area. The Post Weekly is included within the Goulburn Post and covers the community news from Marulan and other villages. There is also a free monthly newspaper entitled 'The Marulan Magazine' that is circulated to every household in Marulan, Tallong, Brayton, Big Hill and surrounding areas. This newsletter deals with local issues and is put together by volunteers as a service to the community.

Development issues received substantial coverage in the Goulburn Post. This coverage centred on the positive aspects that the village of Marulan may receive as a result of industry interest and development. For example, in 2002, Mulwaree Shire councillor and Marulan resident Maureen Eddy, commented "the town has so many benefits, it is not hard to see why there is increasing commercial and residential interest. Marulan has such easy access to the highway and with continual improvements being made to the freeway into Sydney, it makes travelling quicker and easier…. "

The media review indicates that Marulan has never had a major problem with unemployment. There are a range of jobs for people in different areas such as hospitality and although most of the positions are casual, opportunities for young people exist in the area.

There has been a continuing theme of support for small businesses operating in Marulan and protection of local livelihoods. A committee of local residents was set up to discuss a proposal of a small business reform package.

Some notable media events over the last 10 years include a number of local resident campaigns against airport proposals in the surrounding area. In July 2000 Goulburn City Council stated that the airport project had not involved the community and called for 'greater community consultation in light of the noise impact'. A month later a Marulan resident wrote two letters complaining about the proposal.

In 2001 community groups in Marulan were active on the issue of catchment areas for drinking water. Members of the Marulan community formed 'Sustaining the Catchments' Landholders Committee, to protect their rights and to contribute to the governments draft plan. In May 2001 the local community played a key role in revising the draft plan to protect the quality of drinking water after it was documented that there was a high level of concern about some aspects of the plan.

In May 2002, issues concerning the landholders Committee included lack of responsibility for unsealed roads, which contribute pollutants to the catchment, and the rapid population growth in the region.

In January 2000, Marulan residents fought to secure land for the Meridian park area of Marulan. Locals had plans for the proposed erection of a flagpole in Meridian Park to mark the multicultural population of Marulan, with funding hopefully enabling completion by the end of the year.

3.5.1 Community Attitudes towards Development

The town has undergone a substantial development in the last five years, predominantly in residential housing. .The media analysis indicates that Marulan is generally pro-development. It is recognised that appropriate development is a key factor in stimulating the local economy, and there is no clear bias in the local media or the community either for, or against development proposals.

Marulan residents have written letters on issues such as historical boundaries between Goulburn City and Mulwaree, development proposal for an airport near Goulburn, increasing crime in Marulan and issues relating to the catchment's drinking water.

Marulan coverage indicates a strong sense of community spirit and residents are proud of their town. The position of the town, as a stopping route between Sydney and the South is something residents are keen to acknowledge and exploit. In July 2000 a Marulan resident in the letters to editor section of the paper wrote, 'As an important stopping place the only logical land access from Sydney to Canberra must be through Marulan'. A councillor further noted in August 1996, 'There is a strong community feel in Marulan' and the area has been described as a 'country life style with very active community groups' (January 4 1999). Local charities appear to dominate Marulan community news, notably; the local Lions club, who are seen to be very active in the area

3.5.2 Community Consultation

The media review indicated that the community of Marulan is aware of community consultation processes and if carried out in an honest and transparent way the process is respected. Public meetings are the most frequent mechanism to be mentioned in the press as a consultation method and a number of articles documented that these meetings have been well attended by members of the Marulan community. For example, regarding the issue of catchment drinking water an article stated, 'A large attendance at the public meetings is expected given the level of concern from ratepayers'.

A number of public meetings have also taken place on a variety of issues, e.g. "the small towns program" in April 1997. Mulwaree Shire Council held a series of public meetings in the last weekend of June 2003 to explain its position on a boundary change proposed by its three neighbours.

3.5.3 The Lynwood Quarry Proposal

The first mention of the proposed Lynwood Quarry appeared in an article in the Goulburn Post on the 3 December 2004. The article, headlined "Residents back quarry project", outlined the quarry proposal and consultation strategy. It explained that the consultation program had included a telephone survey of 174 homes and personal interviews with more than 50 residents living in proximity to the site, in addition to individual meetings with local government, local businesses and community organisations with an interest in the proposal. It highlighted that almost 80% of people that participated in the telephone survey felt that the proposed quarry

would make an important contribution to the local economy and boost local employment opportunities.

3.6 Future Visions

The former Mulwaree Shire was proactive in developing plans and strategies that address development in the area. In November 2003, the "Mulwaree Shire Council, Settlement Strategy, November 2003" was endorsed as its policy on future growth and settlement patterns (Mulwaree Shire Council 2003). The Goulburn Mulwaree LGA now administers part of the former Mulwaree Shire and has acknowledged the Settlement Strategy in their policy on Rural Settlement. The Mulwaree Shire Council's Settlement Strategy was discussed in reference to the likely growth and development of Marulan. Within the Mulwaree Shire, Marulan's location just off the main Sydney – Canberra corridor means that it is most likely to benefit from this growth.

In summary the Settlement Strategy recommends -

- "promotion of the growth of Marulan for urban related uses, subject to connection to sewerage, allocation of water and normal planning considerations
- promotion of future growth in Taralga and Tarago once sewerage is connected, and subject to water supply
- restriction on development in other villages unless they are sewered or there are other means of sewage disposal that are acceptable in terms of water catchment protection
- limiting urban expansion opportunities to locations within 5km of the City of Goulburn and 2km of existing villages subject to the introduction of an amended Rural-Urban Investigation zone, which will allow further detailed investigations and restrict in the interim, incompatible land uses.
- monitoring and determination of concessional allotment potential
- promotion of industrial and commercial development at Marulan and its environs" (Mulwaree Shire Council 2003).

4 THE SOCIAL IMPACTS OF THE PROPOSAL

4.1 Introduction

Social impact assessment involves the cooperation and coordination of a number of 'social partners' or Stakeholders. As Burdge (2004) outlines, Stakeholders may be affected groups or individuals that:

- Live nearby a resource;
- Are forced to relocate;
- Have an interest in the proposed action or change;
- Those who use or value a resource; or
- Those who are interested in its use.

This section outlines the issues/perceived impacts identified by a range of stakeholders with an interest in the proposed development. As has been highlighted earlier in this report, impact analyses are likely to be inaccurate if they discount the effect of people's values, social dynamics and beliefs about particular events. Those people directly affected are in the best position to say how they actually experience events, and people's own predictions, in the form of optimism and fears, are a significant component of their behaviour and hence social impacts.

In order to determine social impacts associated with the project, survey methods were used to obtain the views of the general community and stakeholders with a specific interest in the proposed development. To ensure appropriate sampling of the community, it was appropriate to divide the community into three different groupings:

Group 1: Adjoining property owners - residents residing in close proximity to the Project Site. This included local landholders and immediate neighbours. The landowners in close proximity to the proposed quarry site include a significant number of non-resident Marulan stakeholders. A separate consultation exercise has been undertaken with these stakeholders.

Group 2: Special interest groups - those groups with a particular interest in the operation i.e. local government and associated sub-committees, state government agencies, environmental groups, recreational groups. These groups are portrayed in Table 12.

Group 3: Wider Community - residents residing within Marulan and Marulan South.

Survey methods employed varied according to the group being sampled. For example, those in groups 1 and 2 were contacted in a more personal manner through face-to-face semi-structured interviews, while group 3 was contacted through a random telephone survey and the community open day.

Community consultation in Marulan and the surrounding area occurred using the following mechanisms:

- Interviews with Stakeholder in groups 1 and 2;:
- Telephone Interviews with group 3;
- Presentations to Group 2;
- Open Day; involving Groups 1, 2 and 3; and,
- Community Information Sheets at significant stages of the consultation process (see Appendices 3, 4 and 5). By March 2005, three Community Information Sheets had been distributed to Stakeholder Groups 1, 2 and 3, including non-resident landowners:
    - Community Information Sheet 1 to provide details of the Lynwood Quarry Development (Appendix 3);
    - Community Information Sheet 2 to provide community feedback on the issues raised during interviews with Marulan-resident landowners and the results of the telephone survey (Appendix 4); and,
    - Community Information Sheet 3 to provide an overview for the community on the Environmental Studies being undertaken (Appendix 5).

Further Community Information Sheets will be produced if the quarry is approved, to keep the community informed of project developments.

This section of the report covers;

- The Consultation Process followed;
- The Stakeholder Interviews;
- Stakeholder Issues;
- The Random Community Survey; and,
- Open Day and Community Information Sheets.

4.2 Consultation Process

This section of the report describes the consultation process and related activities undertaken on the Lynwood Quarry Proposal between August 2004 and March 2005.

During late August and early September 2004, Marulan-based Stakeholders (Groups 1 and 2) in the project were identified and contacted. These Stakeholders were again contacted in late February 2005 to provide feedback on the environmental studies and to inquire whether they had further comments on the process. Ten Stakeholders requested further meetings and eight meetings were held with these ten Stakeholders in March 2005. The Marulan-based stakeholder interviews are discussed in more detail in Section 4.3.1.

Further consultation with landowners not resident in Marulan occurred during March of 2005. These are people who have bought land in Marulan as an investment or retirement option but live elsewhere. Their consultation process is discussed in Section 4.3.2 below.

To determine the attitudes of the broader community within Marulan and Marulan South a telephone survey was undertaken of a random sample of 174 households in late August and early September 2004. The results of the survey can be found in Section 4.5.

4.3 Stakeholder Interviews

4.3.1 Marulan Stakeholder Interviews

Prior to the commencement of Stakeholder Interviews, over 200 Community Information Sheets were distributed to households in Marulan and surrounding areas. The first Community Information Sheet provided an overview of the project and the development approval process. It is attached as Appendix 3. A further two Community Information Sheets have been distributed to the community. These are also attached as Appendices 4 and 5 and are discussed in Section 4.6.

During late August and early September 2004, a total of 37 meetings were held with residents, the primary school, local business and community groups. During this process 55 Stakeholders were interviewed within Marulan and surrounding areas, including representatives from a number of community interest groups. A list of the

key Stakeholder interest groups contacted is outlined in Table 12 and a summary of the issue themes identified is presented in section 4.4.

A range of Stakeholder interest groups were identified in the Marulan area that may have an interest in the Lynwood Quarry Proposal. As part of the first round of the community involvement program, contact was made with the following groups:

Table 12 Stakeholder Groups Contacted

Name of Group
Marulan Progress Association
Country Women's Association
Marulan School and Parents and Citizens Association
Marulan Lions Club
Goulburn Rotary Club
Local Media
Goulburn Mulwaree Council including:
- Environmental Services Department
- Planning and Development Department

Interviews were undertaken at a place convenient to the stakeholder and lasted approximately one hour in duration. The interview was preceded by an explanation of the project, the proponent, Coakes Consulting's role and the purpose of the social impact assessment and community involvement program. The issue themes emerging from these interviews are discussed in 4.4. As part of the face to face interview process, stakeholders were given a copy of the first Community Information Sheet which outlines the proposal. A copy of the stakeholder interview guide used during the interview process is attached as Appendix 2.

4.3.2 Non-Resident Marulan Stakeholder Interviews

As mentioned above, in addition to the Marulan residents and broader community, there is a further distinct group of stakeholders. These are people who either own houses or have bought land in close proximity to the proposed development but do not live permanently in Marulan. These people were contacted on an on-going basis as their contact details became available. In some cases, the Goulburn Mulwaree Council had to be contacted to provide the names of non-resident landowners. The non-resident landowners were contacted by telephone or letter to ask if they would like to participate in the consultation process. The issues raised by these non-resident landowners are discussed in 4.4.2.

4.4 Stakeholder Issues

4.4.1 Marulan Stakeholder Issues

In general, most participants were supportive of the development of a quarry in Marulan citing the economic benefits associated with the proposal, namely increased local employment. Participants indicated that a lack of employment opportunities in the township in the past had meant that people had been required to move out of the locality or travel distances to find work. A participant commented "*It means that our kids won't have to move away to get a job*"

Participants also acknowledged that any new industry in the town would also provide benefits for the community, in terms of an increase in the town's facilities. It was also acknowledged that new people in town would benefit the township. Participants in the interviews commented "*I think more people in town is good for our kids – it means that they are not so insular" and "I am all for having new faces in the town*'.

A range of issues emerged from the initial round of consultation on the proposed Lynwood quarry. These issues are illustrated in Figure 4 and discussed in more detail below.

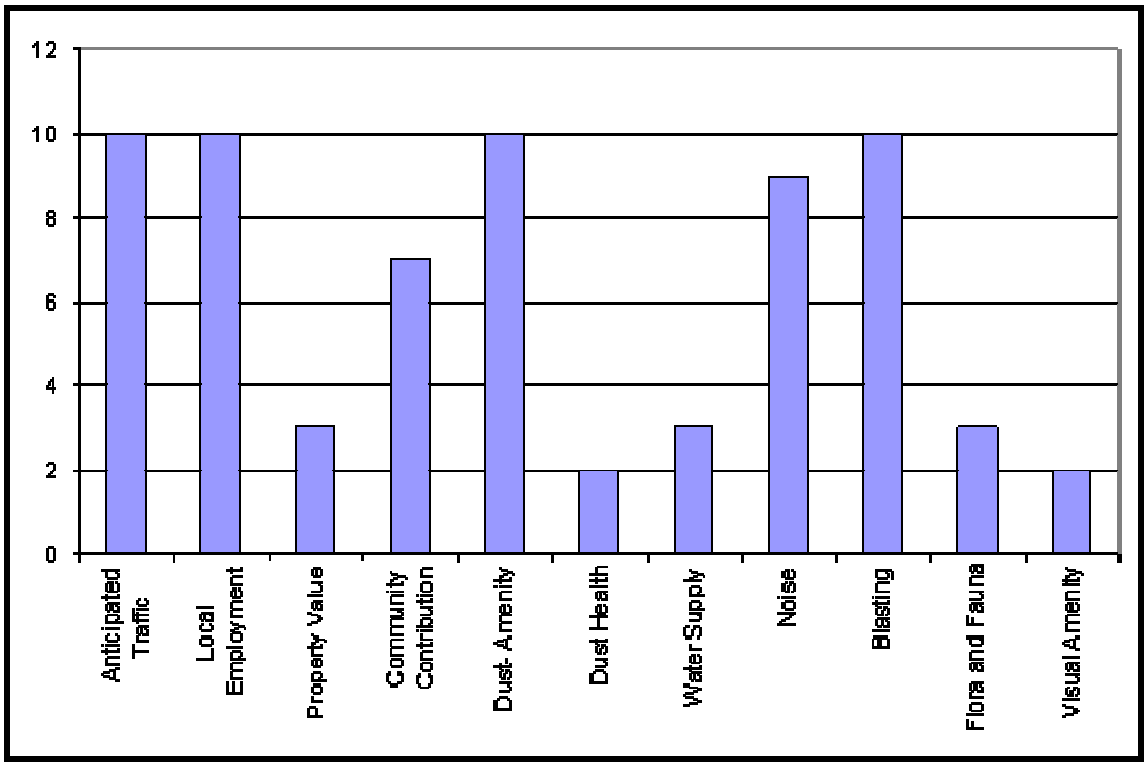

Figure 4 Issue Frequency

Figure 4 shows the issues raised during interviews along the horizontal axis whereas the number of times the particular issue was raised is shown along the vertical axis. It is clear that the four most frequently raised issues were Dust, Blasting, Traffic and the anticipated employment benefits to Marulan.

Dust

In relation to dust, residents outlined that Marulan was a very windy town with a prevailing south-west wind, with frequent dust storms. There were concerns that the quarry was located downwind from the town and therefore the prevailing winds could potentially carry dust generated from the quarry towards the town. It was perceived that this could potentially exacerbate the current dust problem. As one participant commented "*Noise I can live with, but dust is a real problem*". Participants requested further information regarding dust monitoring and modelling.

Two participants raised the potential health effects of the dust, particularly the silica component of the dust. One participant commented "*I am all for new jobs but we have to think about health*".

Blasting

A further prominent issue theme identified by participants related to blasting at the quarry. Participants were particularly concerned about the hours during which blasting would be permitted if the quarry was approved, as well as the frequency of blasting. This issue is related to the issue of noise generated by the quarry, as discussed below. A few participants were concerned about the potential damage to property, such as cracking of walls, from the blasting. As one resident commented "*What guarantees do we have that Readymix will do the right thing in terms of blasting?*"

Transport

The residents of Marulan are aware of the current road traffic from Readymix's existing quarry, Johniefelds, and its related issues. This prompted participants to raise the issue of road traffic to and from the proposed quarry. There was significant concern among participants about the potential increase in the number of trucks on the road. As one resident commented "*there are two key things to make this project work – keep the trucks off the road and local employment*". Several participants also asked about a potential increase in road traffic during the construction phase of the quarry. "*Will this mean more trucks on our roads?"*

Concern was also expressed about the current maintenance of the roads through Marulan. Some of those interviewed felt that the existing roads through Marulan were currently poorly maintained. Participants also stated that any road levies paid by companies to use the road should be directed to the improvement of the main roads in and around Marulan specifically. "*We don't understand what the council does with all the money Readymix pay for the roads*"

A further transport-related issue that was raised by participants related to the transport of material from the quarry via the rail, specifically the impact of loading trains and increased trains travelling through Marulan. *"(Readymix) should have to do something about the level crossing due to more trains*".

The transport-related issues all relate back to the issue of safety for the community. This includes the increase in the number of vehicles (trucks and trains) and the safety of aging and inadequately maintained infrastructure (roads and the level crossing). Participants also expressed concern about the safety measures related to the potential new intersection with the Hume Highway.

Noise

A further issue raised by participants related to the level of noise generated by the quarry operations. In particular, participants were concerned about the potential noise associated with the quarry's infrastructure. Participants asked about the level of noise the quarry would potentially generate outside normal business hours, i.e. during night-time operations. Participants made comments such as "*We have a strong wind here and it will blow the noise this way*" and "*I've retired down here for peace and quiet*". Residents also requested information on noise monitoring and noise predictions, associated with the proposed development.

Water

The availability of water was also an important issue raised by participants. Participants concerns centred on the supply of water to the quarry for production and dust suppression. Participants were concerned that the need for water for quarry activities would impinge on Marulan's town water supply. Comments included "*Where will Readymix source water from to run the quarry – the town has not any to spare*"

Community Contribution

Most of those interviewed agreed that Readymix had been good corporate neighbours, however participants did raise the question of Readymix's further contribution to the community. A number of participants felt that if the proposal was to go ahead, Readymix should make a commitment to the community. Suggestions of corporate donations included: a leisure centre; a bowling club; land for the Pony Club; contribution to the Lions Club; renovation of the Marulan public hall; a swimming pool; and, the development of a play area and leisure facilities at the local primary school that would be available for wider community use.. Participant's comments ranged from "*Readymix have been good in the past in supporting the town, they were marvellous at the Australia Day celebrations*" to "*Readymix should start doing a bit more for the town*".

Property Value and Development

An issue for some residents related to the impact of the proposed quarry development on property value. It was suggested that should a quarry be developed in the area, this may have a negative impact on property values. This was largely seen to be due to a decrease in visual amenity and potential noise impacts such as blasting. However, other residents also saw the potential for property prices to rise due to increased opportunities in the region.

Flora and Fauna

Some participants were also concerned at the amount of land that may need to be cleared in the construction of the Lynwood quarry. A number of participants asked if the quarry would disturb local wildlife in the area and what measures would be put in place to minimise impacts on the local flora and fauna.

4.4.2 Non-Resident Marulan Stakeholder Issues

The issues raised by stakeholders not resident in Marulan were similar to those raised by Marulan residents and discussed above. These include environmental issues such as dust, noise and visual amenity as well as issues around the impact of the quarry on property values, particularly for those landholders who had purchased land for investment purposes. Two issues differ from the issues raised by the Marulan residents. These include:

Lack of Information: The non-resident landowners outlined that in purchasing land in the area, they had not been provided any information on the proposed development. Landholders had first became aware of the proposal through the letter from Coakes Consulting asking for their involvement in the consultation process relating to the proposal.

Lifestyle: Most of the non-resident landowners had purchased land in Marulan for lifestyle or retirement reasons. It was suggested by many of these landholders that the proposed quarry development would have a substantial impact on their lifestyle aspirations.

4.5 Random Community Survey

Following interviews with the key stakeholders discussed above, in August and early September 2004, a random telephone survey was conducted of 174 households in Marulan and Marulan South. The survey was developed to assess community beliefs and attitudes towards the proposal, to establish a quarry near Marulan. This mechanism provided an opportunity for the views of the wider community to be captured.

4.5.1 Survey Methodology

The telephone survey was undertaken between Saturday the 28th of August and Sunday the 5th September 2004. Using the digital White Pages directory (May 2004), all 336 listed household telephone numbers from Marulan and Marulan South were selected. All telephone numbers were sorted into a random order and interviewers worked sequentially throughout the randomly ordered list of phone numbers in an attempt to obtain interviews with residents.

Interviewers were instructed to complete only those interviews where the respondent was aged over 15 years. Where there was no answer on the first telephone call, interviewers were instructed to call the household again on two separate occasions in an attempt to interview respondents at the household. Through this procedure 174 completed interviews were undertaken from households in Marulan South and Marulan.

A survey of 174 households has associated sampling errors in making generalisations from the sample to the population of interest. For example, when a 'yes' or 'no' response is required to a specific question and assuming 50% of

respondents within a sample of 100 responded 'yes' and the remaining 50% responded 'no', this would yield a standard error of 0.07. In other words, if 50% of the sample responded 'yes' to a specific question, there would be a 95% confidence that the true value in the population from which the sample was drawn would be between 42.6% and 57.4%.

Proportions that are higher or lower than 0.50, yield correspondingly lower standard errors. For instance, if 80% of respondents within a sample of 174 responded 'yes' to a specific question, there would be a 95% confidence the true value in the population from which the sample was drawn would be between 75.3% and 84.7%.

Table 13 indicates that 52% of all households with listed telephone numbers in Marulan and Marulan South were interviewed and included in the survey. The effective response rate for the survey, which is the number of completed interviews amongst households that could be contacted, was 84%.

Table 13 Response Rates

Response	Frequency	Percent
Completed Interviews	174	51.8
Effective Response Rate		*84.1*
No answer (after 3 call backs)	74	22.0
No connection (inc. fax line)	55	16.4
Refusal to participate	33	9.8
Total Respondents	**336**	**100.0**

Note: The effective response rate is the response rate amongst those able to be contacted
Source: EBC (2004).

The questionnaire included questions which identified (a) knowledge and awareness of the proposal, (b) beliefs about the potential impacts of the proposal, (c) evaluative judgements about the proposal, (d) attitudes towards the proposal and (e) questions related to the social and demographic characteristics of respondents.

4.5.2 Respondent Characteristics

The ages of survey respondents are presented in Table 14. The age range was from 15 to 79 years, with a mean age of 51.6 years. Percentages associated with each of the age categories are also shown for the 2001 census. A comparison of survey percentages with census percentages for each of the age categories shows that, with the exception of 15-19 year olds, the survey is within plus or minus 7% of census values. As is also apparent from Table 14, there is a trend for the survey to over count individuals above 40 years of age and under count those below 39 years of age.

Table 14 Age of Respondents

Census Response	Sample Frequency	Sample Percent	ABS (2001) Census	Survey-Census Difference
15-19	3	1.7	14.1	-12.4
20-24	3	1.7	8.2	-6.5
25-29	6	3.5	9.4	-5.9
30-34	12	6.9	7.9	-1.0
35-39	14	8.1	11.7	-3.6
40-44	23	13.3	9.7	+3.6
45-49	18	10.4	4.4	+6.0
50-54	14	8.1	4.7	+3.4
55-59	21	12.1	5.9	+6.2
60-64	18	10.4	8.5	+1.9
65-69	18	10.4	4.7	+5.7
70-74	15	8.7	5.3	+3.4
75-79	8	4.6	2.9	+1.7
80+	0	0.0	2.7	-2.7
Total Respondents	**173**	**100.0**	**100.0**	

Note: The mean age was 51.6 years and the standard deviation 14.9.
One individual did not provide their age.
Source: EBC (2004).

Table 15 indicates that 40% of the sample consisted of males and 60% were females. A comparison with Australian Bureau of Statistics census data for 2001 indicates gender profiles for the sample underestimate males and over estimate females.

Table 15 Sex of Respondents

Census Response	Sample Frequency	Sample Percent	ABS (2001) Census	Survey-Census Difference
Male	69	39.7	51.9	-12.2
Female	105	60.3	48.1	+12.2
Total Respondents	**174**	**100.0**	**100.0**	

Source: EBC (2004).

Table 16 shows that 26% of the sample had been resident at their current address for less than five years and that 39% of the sample had been resident at their current address for less than 10 years.

Table 16 "How long have you lived at your current address?"

Response (Years)	Frequency	Percent
1-5	54	25.5
6-10	28	13.2
11-15	29	13.7
16-20	27	12.7
21-25	15	7.1
26-30	17	8.0
31-35	11	5.2
36-40	16	7.5
41-45	3	1.4
46-50	4	1.9
51-55	3	1.4
56-60	1	0.5
61+	4	1.9
Total Respondents	**212**	**100.0**

Source: EBC (2004).

Table 17 shows that 89% of the survey sample owned their own home, suggesting high levels of attachment to community and place.

Table 17 "Do you rent or own your own home?"

Response	Frequency	Percent
Own (inc. mortgage)	155	89.1
Rent	19	10.9
Total Respondents	**174**	**100.0**

Source: EBC (2004).

The majority of survey respondents (81%) as shown in Table 18 were residents of Marulan. Thirteen percent identified themselves as being from Marulan South.

Table 18 "Do you live in…?"

Response	Frequency	Percent
Marulan	140	80.5
Marulan South	23	13.2
Other locations	11	6.3
Total Respondents	**174**	**100.0**

Note: 'Other locations' includes Winfarthing, Brayton, Big Hill, Greenwich Park, West.
Source: EBC (2004).

4.5.3 Knowledge and Awareness of the Proposal

As shown in Table 19, 86% of respondents indicated they were aware that Readymix was proposing to develop a quarry near Marulan.

Table 19 "Were you aware that Readymix was proposing to develop a quarry near Marulan?"

Response	Frequency	Percent
Yes	149	85.6
No	25	14.4
Total Respondents	**174**	**100.0**

Source: EBC (2004).

Table 20 also shows that 14% of respondents had no awareness or knowledge of the proposal and a further 26% of respondents indicated that while they were aware of the proposal they had no specific knowledge of the proposal itself.

Table 20 "Do you know anything about the proposal to develop the quarry?"

Response	Frequency	Percent
No awareness or knowledge	25	14.4
Aware of proposal but no knowledge	46	26.4
Aware of proposal and have some knowledge	103	59.2
Total Respondents	**174**	**100.0**

Source: EBC (2004).

Those respondents (59%) who indicated they had specific knowledge of the quarry proposal (Table 20) were asked to identify the type of knowledge they had of the proposal. It should be noted that the type of knowledge reported by respondents

may not necessarily be correct and is essentially a belief about one or more aspects of the proposal.

Table 21 shows that 62% of respondents indicated they were knowledgeable about the location of the proposed quarry. Thirty-seven percent of respondents indicated they had knowledge of the proposed transport infrastructure, while a further 25% indicated knowledge of the development and approval process, which included specific beliefs about Readymix having purchased land for the proposed quarry.

Table 21 "What do you know about the proposal?"

Response	Frequency	Percent
Know location of proposal	20	38.5
Is a large quarry	4	7.7
Has a buffer zone	4	7.7
Close to town	1	1.9
Will go right around town	1	1.9
Taking up a lot of land	1	1.9
Middle of large block	1	1.9
Site Location	**32**	**61.5**
Rail loop and/or rail link	5	9.6
Has rail infrastructure	5	9.6
Near railway line	3	5.8
Putting in own roads	2	3.8
Trucks will go through town	2	3.8
Rail and trucks via Hume Highway	1	1.9
Shipping by rail and road	1	1.9
Transport Infrastructure	**19**	**36.5**
Bought or purchased land	11	21.2
Waiting on approval	1	1.9
Proposal is going ahead	1	1.9
Development and Approval Process	**13**	**25.0**
Gravel quarry	2	3.8
30 year life	2	3.8
5 million tons per year	1	1.9
Mixing of rock for road base	2	3.8
Long time till production	1	1.9
High quality aggregate	1	1.9
10-20 years supply	1	1.9
Hard rock	1	1.9
Production	**11**	**21.2**
A lot of employment	6	11.5
Employment levels	1	1.9
Employment	**7**	**13.5**
Dust monitoring occurring	1	1.9

Source: EBC (2004).

Table 22 also indicates that the majority of respondents (95%) were aware that Readymix currently operated a quarry near Marulan.

Table 22 Are you aware that Readymix currently operates a quarry near Marulan?"

Response	Frequency	Percent
Yes	165	94.8
No	9	5.2
Total Respondents	**174**	**100.0**

Source: EBC (2004).

4.5.4 Evaluation and Impact Assessment

All respondents were asked whether they approved or disapproved of the proposal to develop a quarry near Marulan. However, prior to asking this question all respondents were given information about the proposal. Interviewers read the following text to all respondents:

> *"Readymix is proposing to develop a quarry on their land to the west of Marulan. The quarry pit will be located to the north of the railway line, with a rail balloon loop and loading facility to the south of the rail line. The quarry will also have an access road linked directly to the Hume Highway. The bulk of the material will be transported to Sydney by rail and to the local region by road transport. There will be about 50 people employed at the quarry."*

Table 23 and Figure 5 show that 80% of all respondents either 'strongly approved' or 'approved' of the quarry proposal. Sixteen percent of respondents expressed 'no opinion either way' and only 5% either 'disapproved' or 'strongly disapproved' of the proposal.

Table 23 "Given what you now know about the proposed quarry, would you…"

Response	Frequency	Percent
Strongly approve	40	23.0
Approve	99	56.9
Have no opinion either way	27	15.5
Disapprove	5	2.9
Strongly Disapprove	3	1.7
Total Respondents	**174**	**100.0**

Source: EBC (2004).

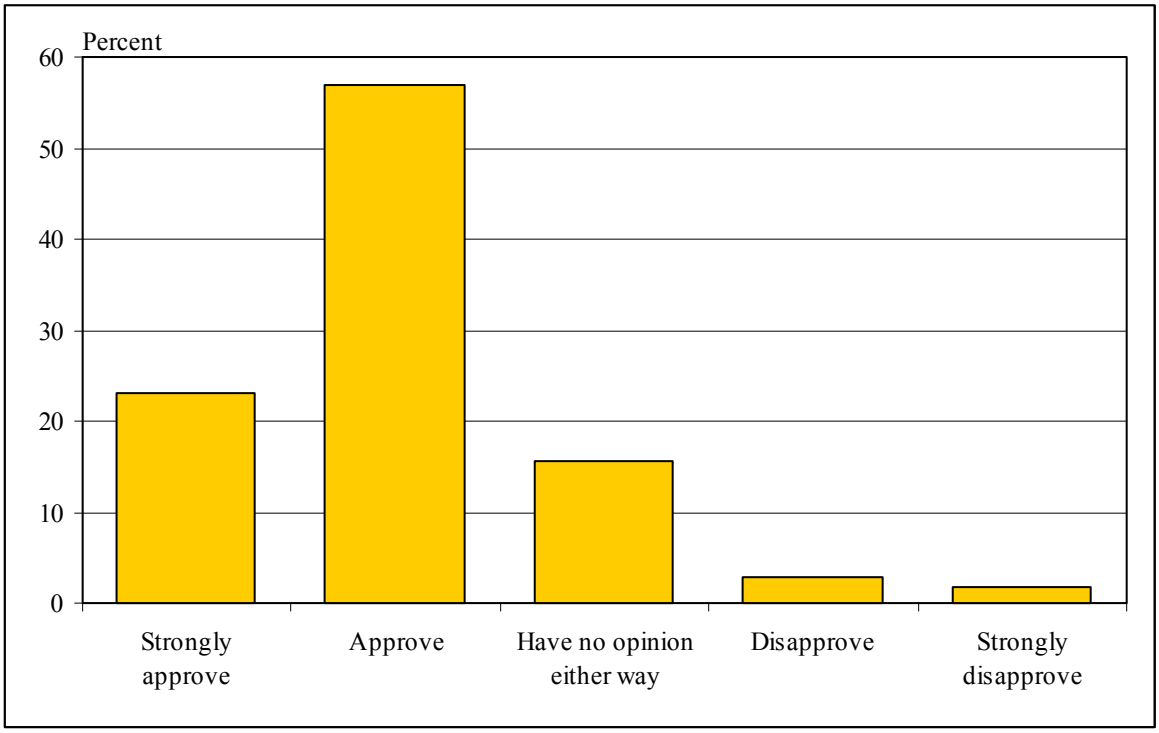

Figure 5 Judgements of approval for the proposed quarry

It is common in the analysis of evaluative responses to attempt to identify what accounts for the variation in the judgments that are given. In other words, it is often possible to identify those specific characteristics of respondents; such as their age, place of residence, or gender, which may explain the variation observed in the support for a specific proposal. In the context of the current proposal there is little variation in the evaluative judgements, with over 80% of residents approving of the proposed quarry and as such there is little variation to explain.

If respondents indicated that they either 'approved' or 'strongly approved' of the proposal, they were also asked to indicate why they approved of the proposal. The reasons given were identified in a free recall format and were unprompted by the interviewer.

Table 24 shows the two most common reasons given by respondents for approving the quarry proposal - that it would 'provide employment' (83%) and 'support the local economy' (43%).

Table 24 "Why would you approve of the quarry?"

Response	Frequency	Percent
Provides employment	115	82.7
Supports the local economy	60	43.2
Doesn't effect me in any way	9	6.5
Provides important quarry materials	7	5.0
Readymix have good record	5	3.6
Population increase to area	5	3.6
Real estate values improve	4	2.9
Good location for quarry	3	2.2
Other reasons	12	8.6
Total Respondents	**139**	**100.0**

Note: Other reasons include all 'other reasons' with a frequency of two or less.
This is a multiple response table where all the rows in the table should be treated as independent and not summed. This is due do an individual being able to provide multiple responses to the question that has been asked.
Source: EBC (2004).

All respondents were also asked if there were any potential impacts associated with the quarry that they were concerned about. Again the reasons given were identified in a free recall format and were unprompted by the interviewer.

Table 25 shows that 55% of respondents indicated there were no impacts or issues of concern. Concerns about the impacts of dust were raised by 24% of respondents, with dust from the operation of the quarry being the primary focus of concern (22%).

Potential impacts of the quarry operations on traffic and transport systems were raised by 21% of respondents, with the most common focus being in relation to traffic congestion caused by trucks from the quarry (12%).

In addition to concerns about dust and impacts on traffic and transport systems an additional area of concern was noise (16%), including specifically noise from quarry operations (12%)

Table 25 "Are there any potential impacts associated with the quarry and the transport of quarry materials that you are concerned about?"

Response	Frequency	Percent
No issues or impacts of concern	**96**	**55.2**
Dust from quarry operations	38	21.8
Dust from the transport of quarry materials	15	8.6
Total number of people (impacts of dust)	**42**	**24.1**
Traffic congestions with trucks on the road	20	11.5
Safety of other road users (pedestrians, cyclists)	17	9.8
Damage to road surfaces	5	2.9
Total number of people (impacts of transport)	**36**	**20.7**
Noise from quarry operations	20	11.5
Noise from trucks transporting materials	14	8.0
Noise from rail transport	5	2.9
Total number of people (impacts of noise)	**28**	**16.1**
Ground vibrations from quarry operations (i.e., blasting, machinery)	6	3.4
Ground vibrations from trucks and trains	0	0.0
Total number of people (impacts of vibrations)	**6**	**3.4**
Surface water contamination (rivers, creeks, streams)	2	1.1
Groundwater contamination	2	1.1
Impact on flora (i.e. vegetation clearing)	0	0.0
Impact on Fauna (i.e. native animals)	1	0.6
Total number of people (natural environment)	**3**	**1.7**
Potential effect on house and land values	5	2.9
Increase in use of water at the quarry	5	2.9
Visual impact of the quarry site	3	1.7
Changes to the character of the community	2	1.1
Ability to rehabilitate the site	2	1.1
Health impacts	2	1.1
Other impacts	10	5.7
Total Respondents	**174**	**100.0**

Note: *Other impacts include all 'other impacts' occurring with a frequency of one. This is a multiple response table where all the rows in the table should be treated as independent and not summed. This is due do an individual being able to provide multiple responses to the question that has been asked.*

Source: *EBC (2004).*

The three most commonly reported areas of concern in relation to the development of the proposed quarry were (i) the impacts of dust, (ii) impacts on traffic and transport systems and (iii) noise from the quarry and its operation.

For each of these three areas, Table 26 identifies the level of concern expressed by survey respondents. Approximately two-thirds of those respondents who indicated a concern about the impacts of dust, also indicated they were 'very concerned' about this issue. Amongst those concerned about the impacts on transport and traffic, 58% also indicated they were 'very concerned' about these issues.

In contrast, Table 26 shows that amongst those respondents who indicated a concern about noise impacts, only 46% indicated they were 'very concerned' about

the impacts of noise, with a third of respondents (32%) indicating this issue was only of minor concern.

Table 26 "…would you say you were very concerned, somewhat concerned or have only a minor concern in relation to this issue?"

Response	Very Concerned		Somewhat Concerned		Minor Concern	
	Freq	%	Freq	%	Freq	%
Dust from quarry operations	25	69.4	8	22.2	3	8.3
Dust from the transport of quarry materials	10	71.4	3	21.4	1	7.1
Total number of people (impacts of dust)	**29**	**69.0**	**9**	**21.4**	**4**	**9.5**
Traffic congestions with trucks on the road	10	55.6	3	16.7	5	27.8
Safety of other road users (pedestrians, cyclists)	10	62.5	2	12.5	4	25.0
Damage to road surfaces	2	40.0	1	20.0	2	40.0
Total number of people (impacts of transport)	**18**	**58.1**	**5**	**16.1**	**8**	**25.8**
Noise from quarry operations	8	47.1	4	23.5	5	29.4
Noise from trucks transporting materials	6	42.9	3	21.4	5	35.7
Noise from rail transport	2	50.0	0	0.0	2	50.0
Total number of people (impacts of noise)	**13**	**46.4**	**8**	**28.6**	**9**	**32.1**

Note: Other impacts include all 'other impacts' occurring with a frequency of one. This is a multiple response table where all the rows in the table should be treated as independent and not summed. This is due do an individual being able to provide multiple responses to the question that has been asked.
Source: EBC (2004).

As shown in Table 27, 31% of respondents indicated they had previously experienced effects from quarry operations or the transport of quarry materials.

Table 27 "Looking back over the past three years, have you experienced any effects from quarry operations or the transport of quarry materials while living in the area?"

Response	Frequency	Percent
Yes	53	30.6
No	120	69.4
Total Respondents	**173**	**100.0**

Source: EBC (2004).

Table 28 shows that, with the exception of dust in the air (19%), the three most commonly reported impacts from previous quarry operations were transport related and included trucks on the road (44%), road deterioration or damage (19%) and transport noise (13%).

Table 28 "What effects have you experienced…?"

Response	Frequency	Percent
Trucks on the road	21	43.8
Road deteriorated and/or damage	9	18.8
Dust in the air	9	18.8
Transport noise	6	12.5
Vibrations from blasting	4	8.3
Noise from quarry operation	3	6.3
Traffic through the town	3	6.3
Poor traffic safety	3	6.3
Cracking in buildings	2	4.2
Noise from blasting	1	2.1
Positive – ability to purchase from the quarry	1	2.1
Spill in the creek	1	2.1
Private drivers not covering loads properly	1	2.1
Total Respondents	48	100.0

Note: Other impacts include all 'other impacts' occurring with a frequency of one.
This is a multiple response table where all the rows in the table should be treated as independent and not summed. This is due do an individual being able to provide multiple responses to the question that has been asked.
Source: EBC (2004).

4.5.5 Attitudes towards the Proposal

A series of nine attitude statements were used to assess community attitudes towards the quarry proposal. Respondents were told by the interviewer that they were "going to read out some statements that people have made about the proposal" and that they were to indicate whether they "strongly agreed, agreed, disagreed or strongly disagreed with each statement". Table 29 lists the eight attitude statements used in the questionnaire.

Table 29 Attitude Statements

Attitude Statement
1. The benefits of the proposed quarry to the region outweigh any of the disadvantages
2. The proposal will go ahead regardless of what the community thinks
3. The proposed quarry will make an important contribution to the local economy in the region
4. I am unsure about the impacts of the proposed quarry
5. I am not really concerned about the quarry proposal
6. I think developing the quarry will detract from the character of the area
7. I trust the approval process for the quarry
8. I would live here for the rest of my life

Source: EBC (2004)

Percentage and frequency counts associated with each of the eight attitude statements are given in Table 30 and in Figures 6a to 6h.

The attitude statements indicate that while a significant percentage of the community believe the quarry will go ahead regardless of what the community thinks (52%), the majority of residents trust the development approval process that is being undertaken for the quarry (74%).

In addition, while many residents were unsure about the impacts (47%) or were unconcerned about the proposed quarry (52%), the majority believed the benefits of the quarry would outweigh any of the disadvantages (79%).

Most importantly, nearly all residents believed the proposed quarry would make an important contribution to the local economy in the region (92%) and that it would not detract from the character of the area (78%).

Table 30 "The benefits of the proposed quarry to the region outweigh any of the disadvantages"

Response	Strongly Agree	Agree	Disagree	Strongly Disagree	Undecided
The benefits of the proposed quarry to the region outweigh any of the disadvantages	18 *10.3*	120 *69.0*	16 *9.2*	2 *1.1*	18 *10.3*
The proposal will go ahead regardless of what the community thinks	3 *1.7*	88 *50.6*	60 *34.5*	5 *2.9*	18 *10.3*
The proposed quarry will make an important contribution to the local economy in the region	34 *19.5*	126 *72.4*	7 *4.0*	1 *0.6*	6 *3.4*
I am unsure about the impacts of the proposed quarry	5 *2.9*	77 *44.3*	70 *40.2*	5 *2.9*	17 *9.8*
I am not really concerned about the quarry proposal	5 *2.9*	85 *48.9*	74 *42.5*	5 *2.9*	5 *2.9*
I think developing the quarry will detract from the character of the area	1 *0.6*	20 *11.5*	126 *72.4*	9 *5.2*	18 *10.3*
I trust the approval process for the quarry	7 *4.0*	122 *70.1*	28 *16.1*	3 *1.7*	14 *8.0*
I would live here for the rest of my life	22 12.6	92 52.9	41 23.6	3 1.7	16 9.2

Source: EBC (2004).

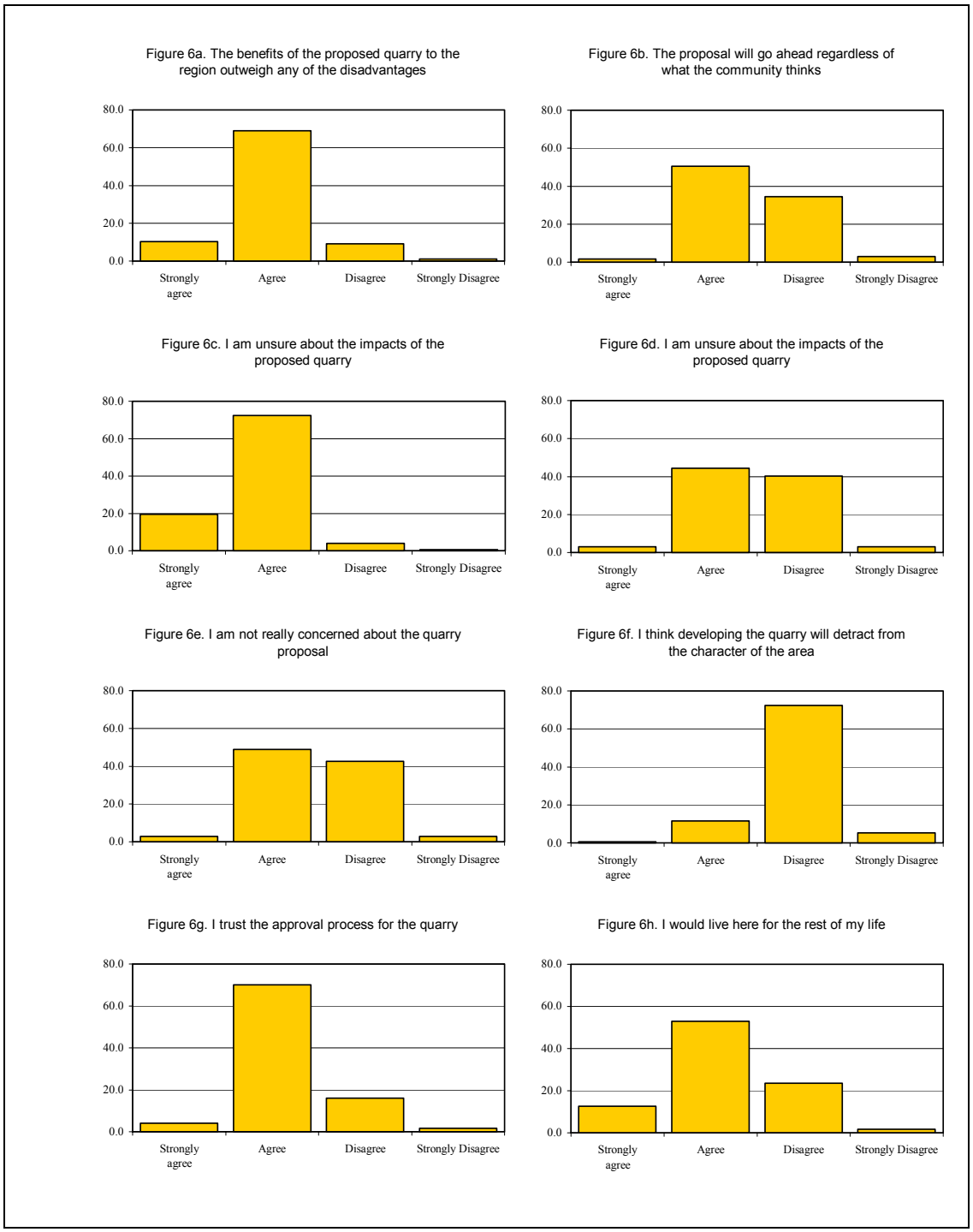

Figure 6 Attitude Statements *(Source:EBC 2004)*

4.5.6 Community Consultation and Information

After providing a description of the quarry proposal to respondents and after having asked respondents to evaluate the quarry proposal, all respondents were asked if there was additional information about the quarry proposal they would like Readymix to provide. Responses to this question have been grouped in relation to several broad themes. Table 31 shows that respondents most frequently asked for further information about road access to the quarry (26%), the geographic location of the quarry (23%), the operational characteristics of the quarry (19%), road transport to and from the quarry (13%) and the impacts and effects of dust (11%).

Of particular note in relation to the themes that have been identified in Table 31, is that while there is a theme which focuses on the provision of information about the location of the quarry, locational issues also occur in relation to road access and rail transport. It is apparent from the analysis of responses to this question that there is a need to provide additional mapping and spatial information to the community which identifies not only the location of the quarry but the location of road and rail access to the quarry.

Table 31 "Is there any additional information about the quarry and its operation you would like Readymix to provide?"

Response	Frequency	Percent
Road Access		
Where will the road enter the highway?	8	12.9
What is the location of the access road?	2	3.2
What road system is going to be used?	2	3.2
Are they going to cross the highway?	1	1.6
Will they access the town?	1	1.6
Is there a flyover of South Marulan?	1	1.6
Existing road or new access?	1	1.6
Is Jerrara Rd to be used?	1	1.6
Total Respondents	**16**	**25.8**
Location		
Where it will be located (need for map)?	9	14.5
Will they use entire area?	2	3.2
How far from Marulan?	2	3.2
How close is the rail loop to Marulan?	1	1.6
Total Respondents	**14**	**22.6**
Operational		
What hours will they operate?	3	4.8
What year will they first produce?	1	1.6
What is the silicon content of rock to be quarried?	1	1.6
What will be the pricing structure?	1	1.6
How large/big/size?	1	1.6
What will be the water consumption levels?	1	1.6
Are they working at night?	1	1.6
What are the production levels?	1	1.6
Is there a 5 year, 10 year plan?	1	1.6
How it will operate?	1	1.6
Total Respondents	**12**	**19.4**

….continued

Table 31 (Continued)"Is there any additional information about the quarry and its operation you would like Readymix to provide?"

Response	Frequency	Percent
Road Transport		
Will trucks come thru town?	2	3.2
When and where trucks will operate?	2	3.2
Safety issues about extra traffic	1	1.6
Frequency of road use	1	1.6
Maintenance of roads	1	1.6
The number of trucks on the road	1	1.6
Total Respondents	**8**	**12.9**
Employment		
Will local people be employed?	5	8.1
Will there be new employees or transfers?	1	1.6
Are jobs casual or fulltime?	1	1.6
Will they employ local subcontractors?	1	1.6
How many will be employed?	1	1.6
Total Respondents	**7**	**11.3**
Effects of Dust		
Concerns and need for information about dust	7	11.3
Dust from trucks - will they be covered?	1	1.6
Total Respondents	**7**	**11.3**
Environmental Impacts		
What are the environmental impacts?	2	3.2
What will be the noise levels?	1	1.6
Will there be any pollutants?	1	1.6
Will revegetation be undertaken?	1	1.6
Total Respondents	**5**	**8.1**
Rail Transport		
How many extra trains?	2	3.2
Will traffic use local road?	1	1.6
Where will be the railway siding?	1	1.6
Total Respondents	**4**	**6.4**
Information Dissemination		
Provide progress reports	1	1.6
Distribute flyer further	1	1.6
More newsletters	1	1.6
Total Respondents	**3**	**4.8**
Other Issues	**15**	**24.2**
Total Respondents	**62**	**100.0**

Note: *Other issues include all 'other issues' with a frequency of one.*
This is a multiple response table where all the rows in the table should be treated as independent and not summed. This is due do an individual being able to provide multiple responses to the question that has been asked.
Source: *EBC (2004).*

A community information sheet has been produced and distributed to the community by Readymix. Table 32 found that 51% of respondents had read the community information sheet.

Table 32 "Have you read the community information sheet produced by Readymix about the proposal?"

Response	Frequency	Percent
Yes	89	51.1
No	85	48.9
Total Respondents	**174**	**100.0**

Source: EBC (2004).

In relation to the community information sheet, Table 33 shows that a third (33%) of all respondents considered it 'very useful' and an additional 53% considered it 'somewhat useful'.

Table 33 "Was this useful to you in understanding the quarry proposal?"

Response	Frequency	Percent
Very useful	29	33.0
Somewhat useful	47	53.4
Not useful at all	12	13.6
Total Respondents	**88**	**100.0**

Source: EBC (2004).

The age and sex of respondents did not discriminate between those who had and had not read the community information sheet. However, Table 34 shows that respondents from Marulan were more likely to have read the information sheet (56%) than respondents from Marulan South (30%).

Table 34 Use of the Community Information Sheet by Town Location of Respondents

	Marulan		Marulan South	
Response	Frequency	Percent	Frequency	Percent
Yes	79	56.4	7	30.4
No	61	43.6	16	69.6
Total Respondents	**140**	**100.0**	**23**	**100.0**

Source: EBC (2004).

Table 35 shows a significant association between a respondent's evaluation of the proposed quarry and whether they had read the community information sheet. Although it is not possible to state a causal relationship, it does appear that those respondents who had read the community information sheet were more likely to approve of the quarry proposal than those respondents who had not read the community information sheet. Again it is difficult to infer a causal relationship; although it is possible that providing the community information sheet may have created more positive evaluations of the quarry proposal.

Table 35 Use of the Community Information Sheet and Approval of Quarry Proposal

Response	Community Information Sheet			
	Have Read		Have not Read	
	Frequency	Percent	Frequency	Percent
Strongly approve	23	25.8	17	20.0
Approve	57	64.0	42	49.4
Have no opinion either way	5	5.6	22	25.9
Disapprove	2	2.2	3	3.5
Strongly disapprove	2	2.2	1	1.2
Total Respondents	**89**	**100.0**	**85**	**100.0**

Source: EBC (2004).

One component of the community consultation process associated with the proposed quarry has been the use of individual face-to-face community consultation processes. Table 36 shows that 12% of survey respondents had participated in these consultations.

Table 36 "As part of the community involvement program being undertaken in relation to the approval process for the quarry, consultations are occurring with many residents. Have you been consulted in this process?"

Response	Frequency	Percent
Yes	21	12.1
No	153	87.9
Total Respondents	**174**	**100.0**

Source: EBC (2004).

Amongst those respondents who had participated in the consultation process, Table 37 shows that only one respondent indicated the consultation was 'not useful at all'.

Table 37 "Was the consultation you had useful?"

Response	Frequency	Percent
Very useful	10	47.6
Somewhat useful	10	47.6
Not useful at all	1	4.8
Total Respondents	**21**	**100.0**

Source: EBC (2004).

Table 38 also shows a significant association between participation in the consultation process and respondents' approval of the proposed quarry. While it is difficult to show a direct causal relationship, it does appear that those respondents who participated in face-to-face consultations were more likely to approve of the quarry (86%) than those who did not participate in these consultations (79%).

Table 38 Involvement in Consultation Process and Approval of Quarry Proposal

Response	Community Consultation			
	Participation		No Participation	
	Frequency	Percent	Frequency	Percent
Strongly approve	9	42.9	31	20.3
Approve	9	42.9	90	58.8
Have no opinion either way	1	4.8	26	17.0
Disapprove	2	9.5	3	2.0
Strongly disapprove	0	0.0	3	2.0
Total Respondents	**21**	**100.0**	**153**	**100.0**

Source: EBC (2004).

4.6 Information Provision: Open Day and Community Information Sheets

4.6.1 Community Information Sheets

As was discussed in the Introduction of this section, three Community Information sheets were developed and circulated to more than 200 households in Marulan and the surrounding area at significant milestones of the project. These are summarised in Table 39:

Table 39 Community Information Sheets

Number	Date	Title	Purpose
1	August 2004	Lynwood Quarry Development Proposal	To inform the community about the proposed quarry, the approval process and that a community involvement program will be conducted
2	November 2004	Lynwood Quarry Proposal: Community Comment	To provide feedback to the community on the Marulan-based stakeholder interviews and the random community survey undertaken in Marulan and Marulan South.
3	March 2005	Lynwood Quarry Proposal: Environmental Studies Overview	To inform community members of the key findings of the environmental studies undertaken as part of the Environmental Impact Statement.

4.6.2 Open Day

A well-attended open day was held at the Marulan Public Hall on Saturday 12 March 2005 from 8 am to 5 pm. The open day was publicised through the Goulburn Post and The Post Weekly and a flyer was developed and distributed to households in Marulan and the surrounding villages. Around 90 people attended the open day including community members, local government and political representatives.

The open day provided an opportunity to explain the results of the environmental issues discussed such as dust, noise, traffic as well as Readymix's potential contribution to the community and the potential local employment generated by the project. A number of the people who attended to open day were interested in understanding the noise and dust modelling conducted for the environmental studies. The day also afforded the opportunity for people to ask other questions such as the time frame for the project and its potential impact on the local businesses. Positive feedback on the presentation and professionalism of the open day was noted in the visitors book and project–related comments included "Should be very good for Marulan", "We feel it will be an asset to the community" Asthmatic family against quarries", and "Great - will bring employment".

5 ECONOMIC IMPACTS OF THE PROPOSAL

The economic impacts of the Construction and Operational Phases of the proposed Lynwood Quarry have been analysed and are discussed below.

5.1 Construction Phase

The construction phase for the quarry is likely to be undertaken over a period of two years. In relation to specific social and economic impacts of construction activities, these focus on identifying (i) the size and residential location of the construction workforce, (ii) the impacts of household expenditure by the construction workforce and (iii) the economic impacts of capital expenditure incurred during the construction phase.

5.1.1 Workforce Size and Residential Location

While the construction workforce is likely to peak at approximately 140 employees there is also likely to be variation in construction workforce numbers as different phases of construction are undertaken. Although there will be a management team

estimated at 15 employees throughout the two year construction period, different phases of quarry construction will require a specialist construction workforce and as a consequence workforce numbers will vary as construction demands are undertaken and met. Figure 7 shows the estimated monthly variation in the construction workforce over the construction period of two years.

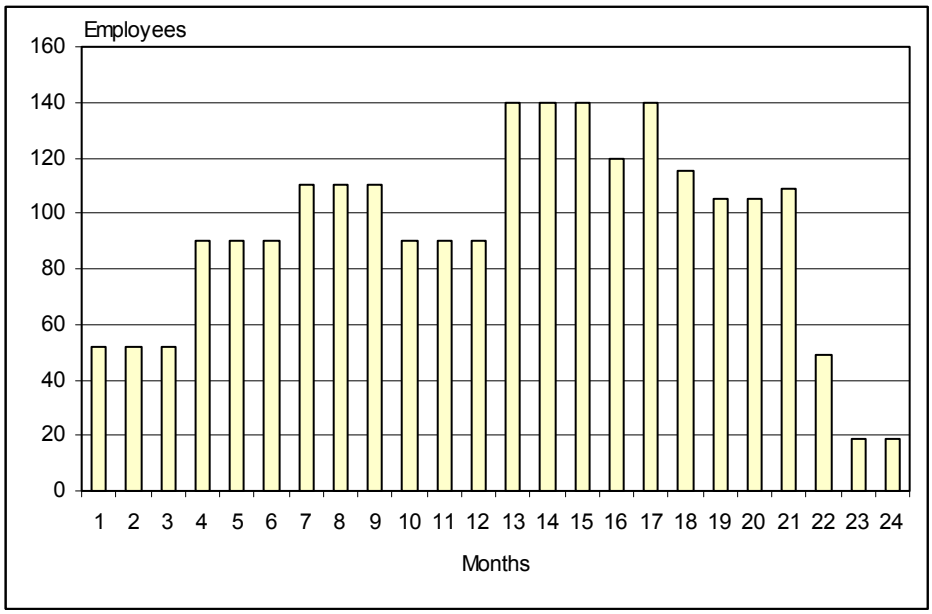

Figure 7 Estimated monthly variation in construction workforce numbers

Source Readymix (2005).

It is assumed that 85% of construction employees would reside in Goulbourn, 10% would reside in Marulan and a further 5% would reside outside of the Mulwaree LGA. These percentages are based on the assumption that the construction workforce is relatively temporary, and that there is limited existing accommodation in Marulan. There are also several smaller towns and localities in the area including Tallong, Marulan South, Wingello, Bungonia, and Towrang and a limited number of construction employees may reside at these locations.

5.1.2 Employee Household Expenditure

Average gross wages and salaries for construction employees are assumed to be $80,000 per annum including all taxes, superannuation contributions and other allowances. This information is used in Table 40 to show the gross wages and disposable income amongst construction employees across the two year period. Total gross wages to construction employees over the two year period are estimated as $14.8 million, with $9.8 million being disposable income available for the purchase of goods and services.

Table 40 Construction Employees and Wages and Salaries over a Two Year Construction Period

Month	Number of Employees	Gross Wages Monthly ($Million)	Gross Wages Cumulative ($Million)	Disposable Income Monthly ($Million)	Disposable Income Cumulative ($Million)
Month 1	52	0.347	0.347	0.229	229
Month 2	52	0.347	0.693	0.229	458
Month 3	52	0.347	1.040	0.229	686
Month 4	90	0.600	1.640	0.396	1.082
Month 5	90	0.600	2.240	0.396	1.478
Month 6	90	0.600	2.840	0.396	1.874
Month 7	110	0.733	3.574	0.484	2.359
Month 8	110	0.733	4.307	0.484	2.843
Month 9	110	0.733	5.040	0.484	3.327
Month 10	90	0.600	5.640	0.396	3.723
Month 11	90	0.600	6.240	0.396	4.119
Month 12	90	0.600	6.840	0.396	4.515
1st Year Total			**6.840**		**4.515**
Month 1	140	0.933	7.774	0.616	5.131
Month 2	140	0.933	8.707	0.616	5.747
Month 3	140	0.933	9.640	0.616	6.363
Month 4	120	0.800	10.441	0.528	6.891
Month 5	140	0.933	11.374	0.616	7.507
Month 6	115	0.767	12.141	0.506	8.013
Month 7	105	0.700	12.841	0.462	8.475
Month 8	105	0.700	13.541	0.462	8.937
Month 9	109	0.727	14.267	0.480	9.416
Month 10	49	0.327	14.594	0.216	9.632
Month 11	19	0.127	14.721	0.084	9.716
Month 12	19	0.127	14.847	0.084	9.799
2nd Year Total			**8.007**		**5.285**
Total for 2 years			**14.847**		**9.800**

Note: *$6,667gross wages and salaries per month inc. superannuation contributions. Assumes 34% of wages is paid in taxation, superannuation and investments*
Source *EBC (2005).*

For the purpose of estimating the distribution of disposable income or household expenditure associated with the payment of wages during the construction phase and as described in Section 5.1.2, it is assumed that 85% of construction employees would reside in Goulburn, 10% would reside in Marulan and a further 5% would reside outside of the Mulwaree LGA.

Table 41 shows for each of the three primary residential locations, the location of expenditure on household goods and services. The percentage location of household expenditure for construction workers residing in Goulburn has been estimated; however the percentage location of expenditure for construction workers resident in Marulan has been derived from survey research with Readymix employees in Marulan.

Table 41 shows that amongst construction workers resident in Marulan, 39% of household expenditure is likely to occur in Goulburn and 46% in Marulan and the balance of 15% is likely to occur in other locations outside the Mulwaree LGA (i.e., Sydney, Wollongong, Canberra etc).

Table 41 Percentage Distribution of Household Expenditure

	Location of Residence		
Location of Expenditure	Goulburn	Marulan	Other Locations Outside the LGA
Goulburn	90.0	39.0	0
Marulan	1.0	46.0	0
Other Locations outside the LGA	9.0	15.0	100.0
Total	**100.0**	**100.0**	**100.0**

Sources: EBC (2005)

Table 42 shows the amount and location of household expenditure for the construction workforce. Over a two year construction period household expenditure by construction workers is likely to be $7.9 million in Goulburn, $1.4 million to areas outside the Mulwaree LGA and $0.5 million within the town of Marulan.

Table 42 Distribution of Household Expenditure for the Construction Workforce ($Million)

	Location of Residence			
Location of Expenditure	Goulburn (85%)	Marulan (10%)	Other Locations (5%)	Total
1st Year				
Goulburn	3.454	0.176	0.000	3.630
Marulan	0.038	0.208	0.000	0.246
Other locations	0.345	0.068	0.226	0.639
Total	**3.838**	**0.452**	**0.226**	**4.515**
2nd Year				
Goulburn	4.043	0.206	0.000	4.249
Marulan	0.045	0.243	0.000	0.288
Other locations	0.404	0.079	0.264	0.748
Total	**4.492**	**0.529**	**0.264**	**5.285**
Total (over 2 years)				
Goulburn	7.497	0.382	0.000	**7.879**
Marulan	0.083	0.451	0.000	**0.534**
Other locations	0.749	0.147	0.490	**1.387**
Total	**8.329**	**0.981**	**0.490**	**9.800**

Note: $4,122 per month inc. superannuation contributions.
Assumes 34% of wages is paid in taxation, superannuation and investments
Source EBC (2005).

The initial economic impacts from employment have been identified in the above analyses. These are the impacts associated with wages paid in relation to the construction of the proposed Lynwood Quarry. These initial economic impacts will flow-on to other sectors and industries within the local and regional economy. For instance Table 42 shows that of the total $9.8 million in household expenditure, $8.4

million (85.8%) occurs locally within the Mulwaree LGA and $1.4 million (14.1%) is 'leakage' to other regions and locations outside the LGA.

Assuming that 57% of gross income will be spent locally (Tables 40 and 42) and that 50% of local consumption expenditure will eventually become local income (i.e., salaries and wages, profits and interest payments), the income multiplier is estimated to be 1.40. This suggests that of the $14.8 million in annual gross salaries and wages paid to the construction workforce, $5.9 in additional gross income will be generated in the local economy.

5.1.3 Construction Expenditure

Capital expenditure associated with construction is estimated to be approximately $150 to 195 million on completion of the project. Local expenditure to construction contractors within the Mulwaree LGA is likely to be relatively low and dependent upon the contractor responsible for construction and the use of specific sub contractors. It may well be the case that local earthmoving contractors within the Marulan area are awarded earthmoving contracts for construction; however this will be dependent upon the outcome of any contracts that are awarded.

It is anticipated that much of the direct and indirect economic benefits associated with the purchase of capital expenditure items required in the construction of the quarry will occur outside the Mulwaree Shire and primarily within the Greater Sydney Metropolitan area.

5.2 Operational Phase[1]

Impacts associated with the operational phase of the quarry focus on identifying (i) the size and residential location of the operational workforce, (ii) the impacts of household expenditure by the operational workforce, (iii) the impacts associated with operational expenditure and (iv) the impacts associated with sales and production consumption amongst other industries.

[1] *Information presented in this section in relation to the number of operational employees and expenditure is based on full production and road distribution capacities. Full production capacity will not be reached until the third year of production and full road distribution is not likely to be reached until year 13 or later. There will be a minor difference in quarry personnel in the first three years (less than 10), but a large difference in transport personnel (over 30). As such workforce and expenditure changes and impacts are likely to be incremental until full production and road capacity is reached.*

5.2.1 Workforce Size and Residential Location

It is anticipated that there would be an operational workforce of about 115 employees of which between 11 to 17 employees would be full time casual. Table 43 indicates the number of employees working in specific operational areas of the quarry.

Table 43 Operational Workforce

Workforce Sector	Number
Managers & Supervisors	11
Production Personnel	42
Stores & Administration	2
Laboratory	5
Road Transport	35
Transport Maintenance	7
Non-permanent Positions (contractor) – blasting, equipment operators	13
Total employees (approximate)	**115**

Source Readymix (2005).

In addition to these personnel, specialist contractors will also be required to complete specific maintenance tasks and to provide other services to the quarry. This will include road haulage contractors as not all road deliveries will be able to be undertaken by the Readymix road truck fleet.

A recent survey of 10 current employees at the Readymix quarry near Marulan showed that eight employees (80%) lived in Marulan and one each in Tallong (10%) and Goulburn (10%). It is anticipated that after several years of quarry operations it is likely that these percentages may also be similar for the current operational workforce.

Census data collected in 2001 showed that of the 199 dwellings in the town of Marulan, only 28 were unoccupied. Furthermore over a 12 month period in 2004, 21 houses were sold in Marulan. Without any new housing stock in Marulan it is likely that only 30% of the workforce would reside in Marulan. Sixty-five percent of the workforce would likely reside in Goulburn or towns and locations within the Mulwaree LGA in close proximity to Goulburn and Marulan and 5% would likely reside outside the Mulwaree LGA.

Goulburn is the local regional service centre and is 27km from Marulan. At the time of the 2001 census, Goulburn had 642 of 8,454 (7.59%) private dwellings unoccupied. The census also indicated that approximately 24% of houses within the

Mulwaree LGA (including Marulan but not Goulburn) were unoccupied in 2001 (some 817 residences).

Table 44 shows the likely residential location of employees on commencement of quarry operations and the likely residential location of these employees after several years of operation.

Table 44 Operational Workforce: Location of Residence

	Commencement		Established	
Location of Residence	Percent	Count	Percent	Count
Goulburn (inc. small rural towns)	65.0	75	20.0	23
Marulan	30.0	34	80.0	92
Locations outside the LGA	5.0	6	0.0	0
Total employees	**100.0**	**115**	**100.0**	**115**

Source EBC (2005).

Within the Mulwaree LGA the employment multiplier for mining is 2.19[2], which indicates that the Mulwaree LGA has a relative specialisation in this sector when compared to the average for NSW. The employment multiplier indicates that for every job created in the mining sector, an additional 1.19 jobs are created in other sectors within the local economy. In this case the 108 direct jobs that are created for people living within the Mulwaree LGA (Table 44) will create an additional 129 additional jobs in other sectors of the economy within the Mulwaree LGA.

5.2.2 Employee Household Expenditure

If average salaries and wages across all employees are assumed to be $80,000 per annum (including taxation, allowances and superannuation contributions), then gross annual salaries and wages for the operational workforce would be $9.1 million. Of this amount, annual household expenditure would be $6 million.

Using estimates in relation to the likely residential location of employees and the distribution of household expenditure (Table 41) an indication of the amount of household expenditure occurring at specific town locations is given in Table 42.

Table 45 shows that amongst the operational workforce at commencement it is estimated that there will be $4.2 million in annual household expenditure occurring within Goulburn, $0.9 million occurring within Marulan and $0.9 million to locations outside the Mulwaree LGA.

[2] *The employment multiplier has been derived using a location quotient for employment in the mining industry within the Mulwaree LGA and NSW State.*

Table 45 Distribution of Household Expenditure for the Operational Workforce ($Million)

	Location of Residence			
Location of Expenditure	Goulburn (65%)	Marulan (30%)	Other Locations (5%)	Total
Goulburn	3.521	0.704	0.000	**4.225**
Marulan	0.039	0.831	0.000	**0.870**
Other locations outside the LGA	0.352	0.271	0.301	**0.924**
Total	**3.912**	**1.806**	**0.301**	**6.019**

Source EBC (2005).

As shown in Table 45, it is probable that the location of household expenditure may change the longer the quarry is in operation as it is likely that an increasing number of employees will seek to reside in close proximity to the quarry site at Marulan. Over the years as new and existing housing stock becomes available in Marulan, employees are likely to move from Goulburn to Marulan and as a consequence household expenditure is likely to increase. This would of course also necessitate an increase in the size and number of commercial businesses within Marulan in order to supply goods and services to an increasing number of employees.

An income multiplier[3] has been defined for current employee expenditure patterns as 1.74, indicating that for each additional dollar of income within the local economy, the indirect or flow on impacts on incomes can be expected to be 0.74 cents. In relation to the operational workforce the direct payment of $9.1 million in annual gross salaries and wages would lead to an additional $6.7 million in annual income being generated in other sectors of which $4.5 million would be additional household expenditure.

5.2.3 Operational Expenditure

On the basis of information provided by Readymix, the total direct and indirect economic impacts of the predicted operational expenditure within the Mulwaree LGA is approximately $10.5 million per annum.

It is possible that the level of local expenditure would increase during the operational period of the quarry as some of the major suppliers may locate to the local area to enable greater competitive supply of goods and services.

[3] *This is based on the derivation of an income multiplier as described by Jensen and West (2002), is defined as k= 1/(1-MPC_L x PSY), where K is the income multiplier, MPC_L is the propensity to spend locally and PSY is the proportion of local consumption expenditures that eventually becomes local income. MPC_L is estimated at 0.85 and the PSY is estimated at 0.5, which is based on the midpoint of likely range defined by Jensen and West (2002)*

5.2.4 Social Profiles and Characteristics of the Operational Workforce

A survey of the employee workforce at the Johniefelds quarry near Marulan was also undertaken. This information, which is based on responses from 10 employees, has been used in previous analyses to identify potential residential locations of employees and the amount and distribution of household expenditure. Table 46 also identifies additional social characteristics of the existing Johniefelds workforce.

Table 46 Social Profiles and Characteristics of the Existing Quarry Workforce at Marulan

Profile	Value
Median age of employee	42 years
Mean family size	3.5 persons
Median years resident at current address	20 years
Percent with partner in same household	80%
Percent resident in Marulan	80%
Housing	
Rental	40%
Have a mortgage	30%
Own the home	30%
Partners income	
No partner	20%
Full-time work	30%
Part-time work	20%
Not employed	40%
Percent using sport, recreation, community groups and organisations	50%

Source EBC (2005).

While the existing workforce is well established, having lived at their current address for an average of 20 years and with employees having a mean age of 42 years, the profile does indicate a family size of 3.5 people currently living within the same household as the employee. This family multiplier is slightly higher than the family multiplier for NSW. This is to be expected given the demographic profile of the current Marulan workforce and the likely profile of the projected workforce. The age range of the Marulan workforce usually implies a family structure of parent/s and children. This is in contrast to the NSW family multiplier which is lowered by the proportion of couples and single people.

If this family multiplier is applied to the estimated employee numbers identified in Table 43 it is estimated that 402 employees and family members would be

dependent upon the proposed quarry operations[4]. At the commencement of quarry operations 262 employees and dependent family members would reside in Goulburn and 119 in Marulan (Table 47). After several years of the quarry being established it is estimated that this would change and 81 employees and family members would be resident in Goulburn and 321 in Marulan.

Given that the population of Marulan in 2001 was 442 persons, on commencement of quarry operations the Marulan population would increase by an estimated 27% from the population size at the time of the 2001 census. After several years of quarry operations the population of Marulan as shown in Table 49 could increase substantially from the 442, 2001 census population figure. When viewed in the context of the substantial predicted growth of Marulan, with one study projecting a "most likely" population of 2850 by 2016, the potential future population increase from the Lynwood Quarry does not represent a substantial increase in the population of Marulan (SGS Economics and Planning Pty Ltd 2003)

These population changes and increases whilst having a limited impact on an existing regional centre such as Goulburn may have a very significant impact on the community of Marulan. It can be expected that there would be a significant increase in demand for housing and social infrastructure services and facility provision.

Table 47 Total family sizes of operational workforce

	Commencement			Established		
Location of Residence	Employees	Family	Total	Employees	Family	Total
Goulburn (inc. small rural towns)	75	188	262	23	58	81
Marulan	34	85	119	92	230	321
Locations outside the LGA	6	15	21	0	0	0
Total employees	**115**	**288**	**402**	**115**	**288**	**402**

Source EBC (2005).

6 AMELIORATION AND MONITORING

Amelioration strategies are processes, programs or plans designed to address the perceived impacts/issues raised by stakeholders during the social assessment process. Such strategies can go some way in ensuring that perceived impacts raised by the community are addressed or off-set in an appropriate manner. In more specific instances, a particular strategy may fully address the concern raised. For example, the re-design of an intersection to a proposed site to address the

[4] *The employment estimates are based on full production capacity which will not be reached until year 3 and full road distribution which will not be reached for at least 13 years.*

issues of traffic congestion and safety may fully address these issues in the view of the local community. However in other instances, where particular values are held i.e. historic and cultural values about a particular place, such strategies may only assist in making a proposal more acceptable to the community, rather than changing the values held by particular Stakeholder groups. Through community involvement in the development and implementation of such strategies, Stakeholders may develop a greater knowledge of the project, a heightened level of trust in the proponent and a greater ownership over issue solutions. Such factors are essential in effective amelioration of social impact.

In response to the perceived issues/impacts raised by the community in Section 4.4 of the report, Stakeholders identified a range of mitigation and amelioration strategies that could be employed to address their concerns.

6.1 Management of Social and Economic Impacts

The issues raised by the Marulan-based Stakeholders, as discussed in Section 4 included:

- Dust,
- Blasting,
- Transport;
- Noise;
- Water;
- Flora and Fauna;
- Community Contribution; and
- Property Value and Development.

These issues can be separated into environmental and non-environmental issues. As far as the environmental issues raised by the community are concerned, the appropriate mitigation and management measures put in place to address these issues are outlined in other sections of the Environmental Impact Statement. These are summarised under Environmental Mitigation Measures in Section 6.1.1 below. This is followed by a discussion of the non-environmental issues of community contribution and property value and development

6.1.1 Environmental Mitigation Measures

Over the past 6 to 12 months, Readymix has undertaken a range of environmental studies to define the potential impacts of the proposed Lynwood Quarry. These studies are now complete and are detailed in the Environmental Impact Statement (EIS) for the project.

The following table summarises the mitigation strategies employed for each of the key environmental issues raised by the community. A further discussion of these strategies can be found in the relevant sections of the EIS.

Table 48 Environmental Mitigation and Management Measures

Environmental Issue	Mitigation and Management Measures
Noise and Blasting	Noise Controls such as: • Enclosing all above ground crushing and screening plant; • Operating much of the mobile equipment in daytime hours only; • Lining the truck and train loading bins to reduce noise during loading; • Noise attenuation work on the trucks working on the eastern overburden emplacement area; and, • Restricting the number of night-time truck deliveries.
Transport	• Routing construction traffic access through the Marulan light industrial area; and, • Constructing a new interchange on the Hume Highway to give operational traffic direct access from the quarry onto the Highway.
Dust/Air Quality	Dust Controls such as: • Enclosure of the crushing and screening plant and installation of a dust extraction system; • Covering of all conveyors; • Installing water sprays on some stockpiles; • Watering of haul roads to reduce dust; and • Timely rehabilitation of disturbed areas.

6.1.2 Community Contribution

During the consultation process, as well as being asked about their issues, stakeholders were asked to provide suggestions on mitigation strategies. Most stakeholders acknowledged that Readymix was a good corporate citizen; however the majority of land holders believed, if the proposal was to go ahead, the company should make a significant contribution to the community such as the development of a play area and leisure facilities at the local primary school that would be available for wider community use. Several stakeholders commented that they were against the selection of certain projects which would favour particular groups in the community.

Readymix has agreed to establish and maintain open community communication channels throughout the life of the project, including during the approval process and construction and operational phases. These communication channels will include periodic community newsletters which will provide information about the quarry operations, community involvement programs and environmental performance. A feedback mechanism will be provided with these newsletters.

Readymix have also committed to establishing a process whereby they meet regularly with representatives of the local community. This process will provide the local community with a mechanism through which to provide feedback, raise any concerns and to provide input into the Lynwood Quarry contributions program. The group will also provide a mechanism by which Readymix can provide information about the operation, including environmental performance information, to the local community. Readymix will consult with Goulburn-Mulwaree Council regarding the establishment of this group.

Readymix has also agreed to an ongoing targeted program of community contributions supported by a clear contributions policy. This includes the establishment of funding criteria and a process to determine community priorities. This process should involve key stakeholders, including the local Council, and should ensure that the company's contribution is used to meet key local community needs and priorities. It will be managed from the local Readymix quarry and would best be initiated with an inclusive community workshop or series of workshops where a Community Partnering Program could be developed. The output of these workshops would be clear goals, objectives and funding criteria for a potential

Community Partnering Program as well as an agreed structure to manage the program.

Readymix are major sponsors of the Beacon Foundation, a national not-for profit organisation that seeks to influence the attitudes and culture of young Australians. Although the Beacon Foundation usually operates within high schools and there is no high school in Marulan, Readymix will investigate possible ways for Marulan to benefit from the foundation. These opportunities will be discussed with local community representatives and Goulburn-Mulwaree Council.

6.1.3 Property Value and Development

This issue of property value was mentioned by a number of Marulan residents and particularly by the non-residents who have bought land in Marulan for retirement, lifestyle or investment reasons. The latter category of non-resident land-owners was particularly concerned about a potential loss in property value. Property-owners varied in their opinion whether the quarry and other developments in the area would have a negative or positive impact on property values.

Coakes Consulting (2002) conducted a detailed review of the impact of mining on property values that indicated that there are a range of factors that influence the impact of a facility on property values. These include the distance of the site from the property, the phase of the development and the type of facility. It is therefore best to evaluate property changes on a case by case basis. There is currently a quarry close to Marulan and, coupled with the expected growth in the size of Marulan, it is unlikely that the proposed Lynwood quarry will dramatically affect property values.

6.2 Mitigation and Management of the Economic Impacts

The economic impacts of the project result largely from the increased workforce during construction and operation. These impacts, if properly managed, could provide an important boost to the development of Marulan. The growth of Marulan is in line with the Mulwaree Shire Settlement Strategy (Mulwaree Shire Council 2003) as discussed in 3.4 above. This strategy envisages that the future sustainability of Marulan will be based on urban growth. The new Goulburn Mulwaree Council that now administers part of the Mulwaree Shire now recognises the Mulwaree Shire Settlement Strategy as its current (15 June 2004) policy on Rural Settlement pattern (Goulburn Mulwaree Council 2004).

The economic assessment details the significant projected income to the region through household expenditure, salaries and wages and other expenditure during the construction and operational phases. The location of this expenditure is primarily influenced by the place of residence of the workforce. For Marulan to derive the most benefit from this expenditure, it needs to embark on a proactive process to manage these impacts. The key variable that will affect whether this income will accrue to Marulan or other centres in the region is the availability of suitable accommodation and related services in Marulan.

This economic assessment has assumed that the majority of the construction workforce will be located outside Marulan, with the associated economic benefits therefore flowing to their place of residence. If a program of multipurpose housing development was commenced, they may be in a position to harness the economic benefits of both the construction and the operational phases.

The Mulwaree Shire Settlement Strategy needs to be reviewed and updated in light of the economic impacts of this project and a clear program developed to maximise the benefits for Marulan. This program will need to be carefully designed and managed to ensure that the considerable potential benefits of the project accrue to Marulan. A key aspect of this program is an effective communication strategy including consultations with housing, health, education and other service providers as well as with Marulan stakeholders.

6.3 Monitoring

An often neglected but crucial part of any socio-economic assessment is the monitoring of impacts to enable any unanticipated impacts to be addressed. It is therefore recommended that an integrated social and environmental impact monitoring program be developed should the proposal be approved, to assess and document any important unanticipated impacts that may arise when the project is implemented. Such a monitoring program is useful in tracking project development and comparing actual impacts with projected social impacts. While the community may perceive particular impacts, in relation to the proposal, the monitoring program will be essential in determining the occurrence or non occurrence of such effects. Variables that may be assessed in the program and mechanisms for assessment are outlined in Table 49.

Readymix has committed to employing a person who will be responsible for implementing the community and environment management measures and the

associated monitoring. This person will ensure stakeholder feedback on the recommended monitoring measures such as those in Table 49.

Table 49 Recommended social monitoring variables and mechanisms

Perceived Impact	Indicator	Mechanism
Community Contribution	Contribution to community priorities by Company	• Community Partnering Program
Environmental Impacts:		Complaints Hot Line
Noise and Blasting	Resident satisfaction with noise and blasting controls	• Stakeholder consultation
Transport Impacts (Rail, Construction traffic and Operational traffic)	No.accidents/incidents reported Stakeholder feedback on success of program	• Community monitoring program – statistics • Stakeholder evaluation survey • Stakeholder consultation
Air Quality	Resident satisfaction with dust mitigation and management measures	• Stakeholder consultation
Economic Impacts	Contribution of the operation to the local community in terms of employment and expenditure	Employee and Business Surveys

7. Conclusion

The community consultation process raised issues on the perceived environmental impacts of the proposed quarry including dust, blasting, transport, noise, water, and fauna. These issues were addressed in detail in the environmental studies and mitigation measures put in place. These are outlined in Table 48 and many of these mitigation measures require close monitoring to assess whether these measures are successfully implemented. To this end, a series of social and environmental monitoring mechanisms are recommended and are outlined in Table 49. These mechanisms will require consultation with stakeholders which, if conducted on an ongoing basis, will provide early warnings of problems that may arise.

One of the most significant impacts and potential opportunities for Marulan was highlighted by the economic analysis which was conducted for the construction and operational phases. The analysis was made on a two-year construction period with a construction workforce peaking at approximately 140 employees. This construction workforce has been estimated to have $9.8 million in disposable income over the two years. The construction workforce is assumed to be temporary in nature and the economic analysis therefore estimated that 10% of the workforce

would reside in Marulan and the majority (85%) would live in Goulburn. Based on the expenditure patterns of Readymix employees currently residing in Marulan, who spend an estimated 39% of household expenditure in Goulburn and 46% in Marulan, this 10% of the construction workforce would spend an estimated $0.5 million over two years in Marulan. Were Marulan to decide to provide accommodation and related services for the construction workers in Marulan, they would be in a position to access the majority of the $7.9 million household expenditure that the analysis attributes to Goulburn.

The economic analysis indicates potentially greater long-term economic opportunities for Marulan if they were to provide accommodation and services for the estimated 115 operational employees. Eighty percent of the current Readymix employees currently live in Marulan but there are not enough houses for the 80% of the predicted operational employees. The economic analysis was conducted on the assumption that only 30% of the operational workforce would initially live in Marulan while 65% would live in Goulburn. Based on the expenditure patterns of the current Readymix Marulan workforce, this equates to an annual household expenditure of $0.9 million in Marulan and $4.2 million in Goulburn. Significant economic benefits from household expenditure would accrue to Marulan if it were to make more housing available for the operational employees.

The economic analysis indicates that while the proposed Lynwood quarry has the potential to significantly impact on Marulan, the quarry provides significant economic opportunities. If these opportunities are to be fully harnessed, a program needs to be developed to facilitate the the development of Marulan by the Goulburn Mulwaree LGA. This program of housing and related development could, for example, include the construction of multi-purpose housing that could be leased to the construction workforce and then made available for the operational workforce.

The majority of stakeholders supported the development of the potential Lynwood quarry at Marulan, given the implementation of the mitigation strategies outlined above. Stakeholder comments included: "*Get it right and go for it*", and "*As long as you can manage the proposal by running the place properly then the impacts will be outweighed by the positives. Readymix will need to ensure that the project is done properly, environmentally sensitively – plant trees etc*"

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Annexure 1: Demographic Tables

Table 3 Population and Dwellings, 1991 - 2001

	Census Years		
	1991	1996	2001
MARULAN LOCALITY			
POPULATION			
Total persons counted	**359**	**411**	**442**
Persons in private dwellings	351	403	442
% in private dwellings	*97.8*	*98.0*	*100.0*
PRIVATE DWELLINGS			
Occupied	127	163	171
Unoccupied	17	20	28
Total	**144**	**183**	**199**
PERSONS PER PRIVATE DWELLING	2.8	2.5	2.6
Different address 1 year ago	na	na	77
Percent different address 1 year ago	na	na	17.4
Different address 5 years ago	122	141	184
Percent different address 5 years ago	37.6	34.3	41.6
MULWAREE LGA			
POPULATION			
Total persons counted	**5,366**	**5,625**	**6,834**
Persons in private dwellings	5,228	5,557	6,648
% in private dwellings	*97.4*	*98.8*	*97.3*
PRIVATE DWELLINGS			
Occupied	1,852	2,082	2,622
Unoccupied	622	885	817
Total	**2,474**	**2,967**	**3,439**
PERSONS PER PRIVATE DWELLING	2.8	2.7	2.6
Different address 1 year ago	na	na	869
Percent different address 1 year ago	na	na	12.7
Different address 5 years ago	na	2,015	2,275
Percent different address 5 years ago	na	35.8	33.3

Note: 'na' indicates the information is not available
Source: ABS (1991, 1996, 2001)
Prepared by: EBC (2004)

Table 4 Housing Tenure, 1991 – 2001 (Occupied Private Dwellings)

	Census Years		
	1991	1996	2001
MARULAN LOCALITY			
Fully owned	85	76	79
	65.4	*46.6*	*46.7*
Being purchased	12	46	47
	9.2	*28.2*	*29.6*
Rental	25	32	32
	19.2	*19.6*	*18.9*
Other tenure	8	9	8
	6.1	*5.5*	*4.7*
Total occupied dwellings	**130**	**163**	**169**
	100.0	***100.0***	***100.0***
MULWAREE LGA			
Fully owned	929	1103	1245
	50.2	*53.0*	*47.4*
Being purchased	394	490	580
	21.3	*23.5*	*22.1*
Rental	318	280	284
	17.2	*13.5*	*10.8*
Other tenure	211	208	515
	11.4	*10.0*	*19.6*
Total occupied dwellings	**1,852**	**2,081**	**2,624**
	100.0	***100.0***	***100.0***

Note: 'Other tenure' includes not stated
Source: ABS (1991, 1996, 2001)
Prepared by: EBC (2004).

Table 5 Community Age Structures, 1991 - 2001

	Census Years			NSW State
	1991	1996	2001	2001
MARULAN LOCALITY				
0-4 Pre-School	35	28	40	422,341
	19.5	*6.9*	*8.9*	*6.7*
5-12 Primary School	41	53	59	716,350
	11.4	*13.0*	*13.2*	*11.4*
13-17 High School	18	33	39	439,592
	5.0	*8.1*	*8.7*	*7.0*
18-24 Young Singles/Couples	39	24	45	580,412
	10.9	*5.9*	*10.0*	*9.2*
25-39 Young/Middle Families	69	113	99	1,398,042
	19.2	*27.8*	*22.1*	*22.2*
40-49 Mature Families	42	38	48	920,595
	11.7	*9.3*	*10.7*	*14.6*
50-64 Pre-Retirement	78	79	65	1,005,361
	21.7	*19.4*	*14.5*	*15.9*
65+ Elderly	37	39	53	828,475
	10.3	*9.6*	*11.8*	*13.1*
Total	**359**	**407**	**448**	**6,311,168**
	100.0	***100.0***	***100.0***	***100.0***
Age Dependency Ratio	47.1	50.2	60.7	49.6
Elderly Dependency Ratio	15.2	14.4	22.5	29.8
Child Dependency Ratio	31.9	35.7	38.2	19.8
MULWAREE LGA				
0-4 Pre-School	436	400	404	422,341
	8.1	*7.1*	*5.9*	*6.7*
5-12 Primary School	740	713	822	716,350
	13.8	*12.7*	*12.1*	*11.4*
13-17 High School	433	444	620	439,592
	8.1	*7.9*	*9.1*	*7.0*
18-24 Young Singles/Couples	366	318	390	580,412
	6.8	*5.7*	*5.7*	*9.2*
25-39 Young/Middle Families	1,141	1,115	1,199	1,398,042
	21.3	*19.9*	*17.6*	*22.2*
40-49 Mature Families	879	917	1064	920,595
	16.4	*16.4*	*15.6*	*14.6*
50-64 Pre-Retirement	901	1117	1502	1,005,361
	16.8	*19.9*	*22.1*	*15.9*
65+ Elderly	464	579	809	828,475
	8.7	*10.3*	*11.9*	*13.1*
Total	**5,360**	**5,603**	**6,810**	**6,311,168**
	100.0	***100.0***	***100.0***	***100***
Age Dependency Ratio	51.5	50.3	52.5	49.6
Elderly Dependency Ratio	13.2	15.5	18.2	29.8
Child Dependency Ratio	38.3	34.8	34.3	19.8

Note: **The age dependency ratio is the proportion of the population (below 14 years and above 65 years) that is economically dependent for every 100 persons of working age (15-64 years).**

The elderly dependency ration is the proportion of elderly persons (above 65 years) for every 100 persons of working age (15-64 years).
The child dependency ration is the proportion of young persons (below 15 years) for every 100 persons of working age (15-64 years).

Source: *ABS (1991, 1996, 2001)*
Prepared by: *EBC (2004).*

Table 6 Highest Level of Schooling Completed (2001 Census: Persons over 15 years)

	Marulan Locality	Mulwaree LGA	NSW State
Year 8 or below	42	526	429,941
	12.4	*10.0*	*8.6*
Year 9 or equivalent	52	574	417,858
	15.4	*10.9*	*8.4*
Year 10 or equivalent	143	1,663	1,338,279
	42.3	*31.5*	*26.8*
Year 11 or equivalent	19	252	267,332
	5.6	*4.8*	*5.3*
Year 12 or equivalent	40	1,320	1,899,691
	11.8	*25.0*	*38.0*
Still at school	12	161	164,468
	3.6	*3.1*	*3.3*
Did not go to school	3	27	60,824
	0.9	*0.5*	*1.2*
Not stated	27	753	419,425
	8.0	*14.3*	*8.4*
Total	**338**	**5,276**	**4,997,818**
	100.0	***100.0***	***100.0***

Source: *ABS (2001)*
Prepared by: *EBC (2004).*

Table 7 Birthplace by Region (2001 Census)

	Marulan Locality	Mulwaree LGA	NSW State
Australia	382	5,284	4,450,772
	85.3	*77.4*	*69.9%*
Asia	3	30	441,791
	0.7	*0.4*	*6.9%*
North-West Europe	30	400	372,025
	6.7	*5.9*	*5.8%*
Southern and Eastern Europe	9	104	258,430
	2.0	*1.5*	*4.1%*
Oceania (excluding Australia)	3	79	154,177
	0.7	*1.2*	*2.4%*
Africa and Middle East	0	29	171,898
	0.0	*0.4*	*2.7%*
Americas	3	27	69,950
	0.7	*0.4*	*1.1%*
Other Locations	0	0	6,717
	0.0	*0.0*	*0.1%*
Not stated	18	852	385,409
	4.0	*12.5*	*6%*
Overseas visitors	0	23	60,577
	0.0	*0.3*	*1%*
Total	**448**	**6,828**	**6,371,746**
	100.0	***100.0***	***100.0%***

Source: *ABS (2001)*
Prepared by: *EBC (2004).*

Table 8 Family Composition (1991-2001 Census: Persons)

	Census Years			NSW State
	1991	1996	2001	2001
MARULAN LOCALITY				
Family couples with children	188	196	222	3,052,747
	52.8	*48.2*	*60.0*	*52.9%*
Family couples without children	90	103	86	1,103,878
	25.3	*25.3*	*23.2*	*19.1%*
One parent families	30	52	59	645,639
	8.4	*12.8*	*15.9*	*11.2%*
Other family types	48	56	3	972,185
	13.5	*13.8*	*0.8*	*16.8%*
Total Persons	**356**	***407***	***370***	***5,774,449***
	100.0	***100.0***	***100.0***	***100.0%***
MULWAREE LGA				
Family couples with children	3,203	3,095	3,097	3,052,747
	64.7	*58.6*	*54.3*	*52.9%*
Family couples without children	1,024	1,271	1,523	1,103,878
	20.7	*24.1*	*26.7*	*19.1%*
One parent families	264	320	417	645,639
	5.3	*6.1*	*7.3*	*11.2%*
Other family types	459	596	671	972,185
	9.3	*11.3*	*11.8*	*16.8%*
Total Persons	**4,950**	**5,282**	**5,708**	**5,774,449**
	100.0	***100.0***	***100.0***	***100.0%***

Source: *ABS (1991, 1996, 2001)*
Prepared by: *EBC (2004).*

Table 9 Weekly Household Income 2001 (Persons over 15 years of age)

	Marulan Locality	Mulwaree LGA	NSW State
Negative/Nil income	6	35	17,248
	3.6	*1.6*	*0.8%*
$1 - $199	10	95	90,065
	6.1	*4.3*	*4.0%*
Low Weekly Incomes	**16**	**130**	**107,313**
	9.7	***5.8***	***4.8%***
$200-$399	30	355	357,083
	18.2	*16.0*	*16.0%*
$400-$599	24	298	269,226
	14.5	*13.4*	*12.1%*
$600 - $799	28	260	226,660
	17.0	*11.7*	*10.2%*
$800 - $999	20	222	192,175
	12.1	*10.0*	*8.6%*
Middle Weekly Incomes	**102**	**1,135**	**1,045,144**
	61.8	***51.1***	***46.8***
$1,000-$1,499	23	350	350,916
	13.9	*15.7*	*15.7%*
$1,500 or more	12	318	472,654
	7.3	*14.3*	*21.2%*
High Weekly Incomes	**35**	**668**	**823,570**
	21.2	***30.0***	***36.9%***
Income not stated	12	290	256,804
	7.3	*13.0*	*11.5%*
Total	**165**	**2,223**	**2,232,831**
	100.0	***100.0***	***100.0%***

Source: *ABS (2001)*
Prepared by: *EBC (2004).*

Table 10 Industry of Employment (1996-2001: Employed Persons)

	Census Years		NSW State
	1996	2001	2001
MARULAN LOCALITY			
Agriculture, Forestry and Fishing	0	6	92,358
	0.0	*3.2*	*3.4%*
Mining	11	12	14,823
	7.3	*6.5*	*0.5%*
Manufacturing	21	23	316,113
	13.9	*12.4*	*11.5%*
Electricity, Gas and Water Supply	0	0	20,389
	0.0	*0.0*	*0.7%*
Construction	10	14	189,740
	6.6	*7.6*	*6.9%*
Wholesale Trade	6	12	152,790
	4.0	*6.5*	*5.6%*
Retail Trade	27	43	390,914
	17.9	*23.2*	*14.2%*
Accommodation, Cafes and Restaurants	28	12	141,927
	18.5	*6.5*	*5.2%*
Transport and Storage	21	23	125,752
	13.9	*12.4*	*4.6%*
Communication Services	3	0	54,958
	2.0	*0.0*	*2.0%*
Finance and Insurance	0	0	131,955
	0.0	*0.0*	*4.8%*
Property and Business Services	0	9	334,299
	0.0	*4.9*	*12.2%*
Government Administration and Defence	3	0	105,380
	2.0	*0.0*	*3.8%*
Education	3	6	187,168
	2.0	*3.2*	*6.8%*
Health and Community Services	6	10	258,522
	4.0	*5.4*	*9.4%*
Cultural and Recreational Services	0	0	67,595
	0.0	*0.0*	*2.5%*
Personal and Other Services	9	9	98,321
	6.0	*4.9*	*3.6%*
Non-classifiable economic units	0	3	14,884
	0.0	*1.6*	*0.5%*
Not stated	3	3	50,508
	2.0	*1.6*	*1.8%*
Total	*151*	*185*	*2,748,396*
	100.0	***100.0***	***100.0%***

…Continued

Table 10 ***(Continued)*** **Industry of Employment (1991- 2001: Employed Persons)**

	Census Years			NSW State
	1991	1996	2001	2001
MULWAREE LGA				
Agriculture, Forestry and Fishing	629	539	556	92,358
	25.3	*21.5*	*20.0*	*3.4%*
Mining	50	65	33	14,823
	2.0	*2.6*	*1.2*	*0.5%*
Manufacturing	201	194	205	316,113
	8.1	*7.7*	*7.4*	*11.5%*
Electricity, Gas and Water Supply	21	21	17	20,389
	0.8	*0.8*	*0.6*	*0.7%*
Construction	173	127	174	189,740
	6.9	*5.1*	*6.2*	*6.9%*
Wholesale Trade	110	99	122	152,790
	4.4	*4.0*	*4.4*	*5.6%*
Retail Trade	259	266	354	390,914
	10.4	*10.6*	*12.7*	*14.2%*
Accommodation, Cafes and Restaurants	66	131	121	141,927
	2.7	*5.2*	*4.3*	*5.2%*
Transport and Storage	116	139	131	125,752
	4.7	*5.5*	*4.7*	*4.6%*
Communication Services	34	53	38	54,958
	1.4	*2.1*	*1.4*	*2.0%*
Finance and Insurance	33	26	14	131,955
	1.3	*1.0*	*0.5*	*4.8%*
Property and Business Services	82	118	175	334,299
	3.3	*4.7*	*6.3*	*12.2%*
Government Administration and Defence	104	82	114	105,380
	4.2	*3.3*	*4.1*	*3.8%*
Education	151	158	198	187,168
	6.1	*6.3*	*7.1*	*6.8%*
Health and Community Services	185	236	266	258,522
	7.4	*9.4*	*9.6*	*9.4%*
Cultural and Recreational Services	39	46	58	67,595
	1.6	*1.8*	*2.1*	*2.5%*
Personal and Other Services	93	143	134	98,321
	3.7	*5.7*	*4.8*	*3.6%*
Non-classifiable economic units	7	30	7	14,884
	0.3	*1.2*	*0.3*	*0.5%*
Not stated	137	33	68	50,508
	5.5	*1.3*	*2.4*	*1.8%*
Total	**2,490**	**2,506**	**2,785**	**2,748,396**
	100.0	***100.0***	***100.0***	***100.0%***

Source: *ABS (1991,1996, 2001)*
Prepared by: *EBC (2004).*

Table 11 Labour Force Characteristics 1991-2001 (Persons aged 15 years and over)

	Census Years			NSW State
	1991	1996	2001	2001
MARULAN LOCALITY				
Employed				
Full-time	45	100	98	1,805,433
	27.8	*62.1*	*57.6*	*65.7%*
Part-time	110	61	65	858,483
	67.9	*37.9*	*38.2*	*31.2%*
Not stated	7	0	7	84,480
	4.3	*0.0*	*4.1*	*3.1%*
Total	**162**	**161**	**170**	**2,748,396**
	100.0	***100.0***	***100.0***	***100.0%***
Unemployed	16	9	14	213,196
Total labour force	181	170	184	2,961,592
Not in the labour force	93	117	149	1,799,540
Unemployment rate (%)	**8.8**	**5.3**	**7.6**	**7.2**
MULWAREE LGA				
Employed				
Full-time	1,721	1,662	1,749	1,805,433
	69.1	*66.3*	*62.8*	*65.7%*
Part-time	659	777	931	858,483
	26.5	*31.0*	*33.4*	*31.2%*
Not stated	111	68	107	84,480
	4.5	*2.7*	*3.8*	*3.1%*
Total	**2,491**	**2,507**	**2,787**	**2,748,396**
	100.0	***100.0***	***100.0***	***100.0%***
Unemployed	202	179	131	213,196
Total labour force	2,693	2,686	2,918	2,961,592
Not in the labour force	1,193	1,517	1,732	1,799,540
Unemployment rate (%)	**7.5**	**6.7**	**4.5**	**7.2%**

Source: *ABS (1991, 1996, 2001)*
Prepared by: *EBC (2002).*

Annexure 2: Stakeholder Interview Guide

Interviewer: General introduction on Coakes Consulting, the proposal and the purpose of the SIA and community involvement program.

Demographics:

Sex: *M/F*
Age: *Approximate age-group*
Length of residence in the area: Years

1. Can you describe the community? How long have you lived in the area? What was your reason for moving into the area?

2. How active are you in the local community? What groups are prominent within the community?

3. What has been your understanding of the history of quarrying in the area?

4. Have you had any previous interaction with Readymix? If so, by what means? How do you feel about your interaction so far?

Interviewer: Brief overview of the project (using Information Sheet)

5. In relation to the Lynwood Quarry proposal what issues are of concern to you?

6. What questions do you have about the proposal? What would you like to know?

7. How might Readymix better address your concerns?

9. What are the best ways to get information about the proposal to you?

10. Who else do you think we should be talking to?

11. Any other information you feel may be useful?

Readymix™

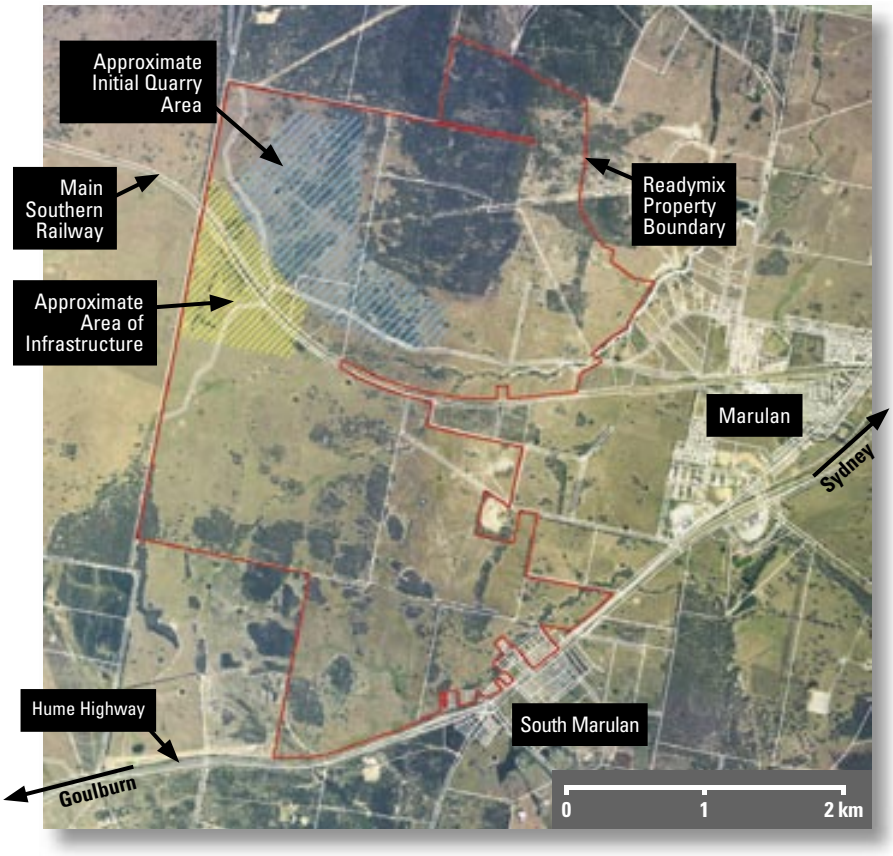
Lynwood Quarry

Development Proposal

AUGUST 2004

COMMUNITY INFORMATION SHEET NO.1

Readymix Holdings Pty Ltd proposes to establish a major hard rock quarry on their land to the west of Marulan. The quarry is intended to provide a long-term supply of high quality construction material into the Sydney, regional and local markets. The general area proposed for the quarry is shown below.



WHO IS READYMIX?

Readymix Holdings Pty Ltd, a member of the Rinker group, is one of Australia's largest quarry operators with 87 active and proposed quarries throughout Australia. Readymix also operates over 200 pre-mixed concrete plants. Readymix is one of the largest suppliers of quarry materials to the Sydney market with much of this material currently sourced from their Penrith Lakes operations. In the Marulan area, Readymix operates the Johniefields hard rock quarry which is located on Brayton Road approximately 4 kilometres from the Marulan Township.

THE PROPOSAL

The company is proposing to develop a hard rock quarry to the west of Marulan township to provide high quality construction grade rock suitable for producing concrete, road and other heavy construction and building products. The project is of significant regional importance and is located adjacent to major transport links providing ready access to major markets.

The proposed quarry will be located approximately 190 km southwest of Sydney and 27 km northeast of Goulburn. If approved, the quarry is expected to produce up to five million tonnes of hard rock each year, with an expected life of over 50 years. The Development Application for the quarry will be seeking approval to operate for a period of up to 30 years.

The hard rock resource on Readymix's land occurs both to the north and south of the main southern railway line, with the initial quarry proposed to be to the north of the railway. The processing plant will be located on Readymix's land as will a dedicated balloon rail loop and loading facility. The quarry will also have an access and haulage road linking directly with the Hume Highway. It is proposed to transport the bulk of the quarry's output by rail to Sydney markets and to service local and regional markets by road transport. The proposed quarry will generate local jobs both through direct employment, associated services and Readymix's financial investment in the project.

READYMIX APPROACH TO DEVELOPMENT

Readymix places high priority on community and environmental issues, and is committed to community consultation and sound environmental management. Readymix is co-developer of the NSW Penrith Lakes scheme – a current quarry operation which hosted rowing events at the 2000 Sydney Olympic Games, and demonstrates Readymix's commitment to ongoing rehabilitation.

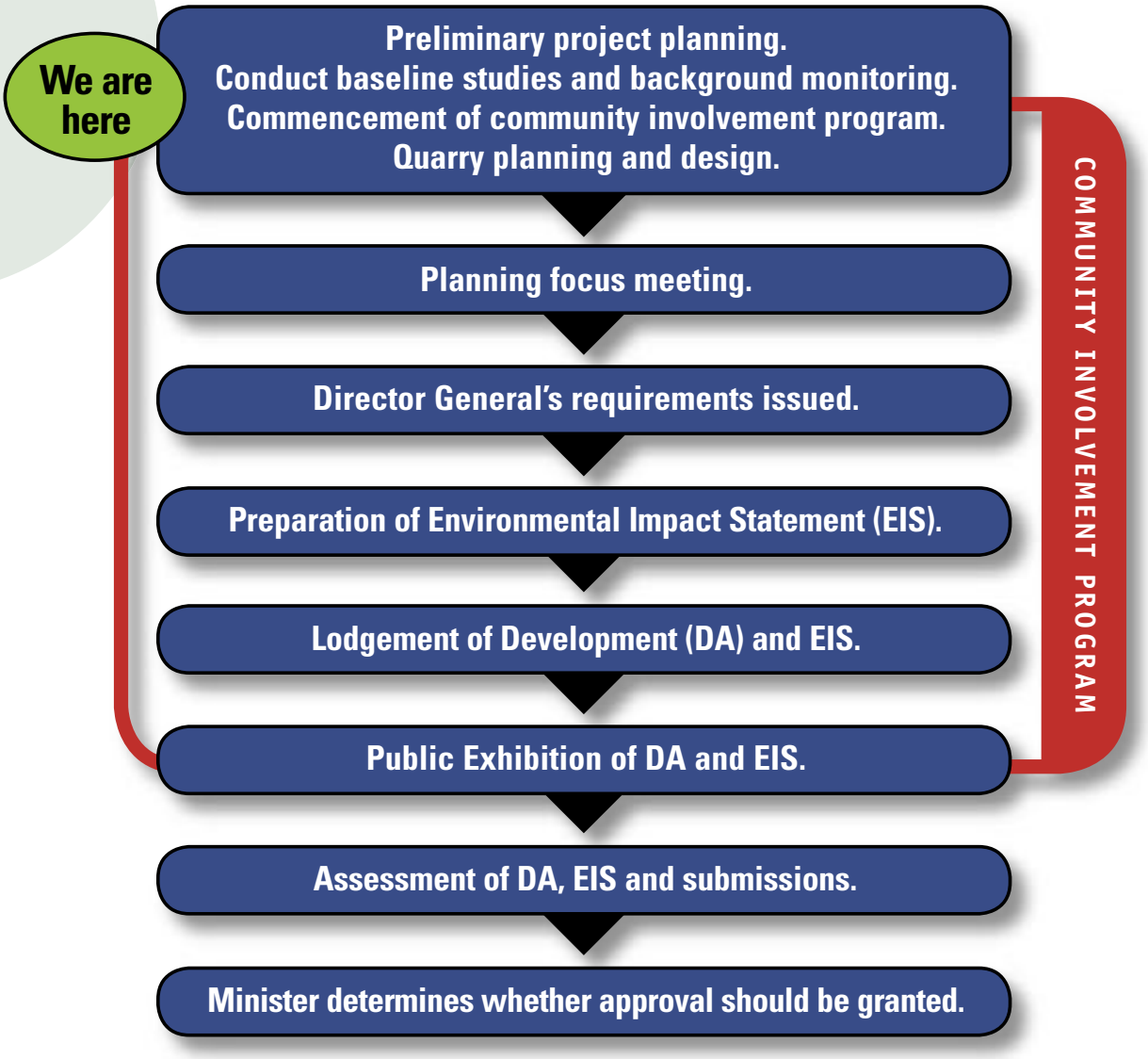
Readymix's Project Manager Michael Heath has appointed Umwelt, a specialist environmental consultancy, to manage the approval process including the preparation of the Environmental Impact Statement (EIS). Coakes Consulting has been appointed as part of the project team to undertake the Social Impact Assessment (SIA) and conduct the community involvement program.

The main purpose of the community involvement program is to identify the key issues of importance to the community and to ensure that community views are incorporated as part of the planning process and are included in the EIS.

THE APPROVAL PROCESS

The size and scale of the hard rock resource makes the proposed quarry a state significant development which requires the approval of the NSW Minster for Infrastructure and Planning.

The following flow chart provides a summary of the process Readymix has to follow to obtain approval for the proposed Lynwood quarry.



As you can see from the chart, Readymix is at the beginning of the environmental impact assessment process and is currently undertaking preliminary project planning and preparing background information about the project.

Following commencement of the community involvement program, the next step in the process will be a planning focus meeting. During the meeting, Readymix will provide the Department of Infrastructure, Planning and Natural Resources (DIPNR), Greater Argyle Council and other relevant government agencies with information about the project to enable the Director General's requirements for the EIS to be prepared.

The EIS will include an assessment of the environmental impact of the project and propose detailed management to minimise such impacts. A number of specialist studies will be undertaken as part of the EIS, including dust, noise, vibration, visual amenity, flora and fauna, Aboriginal and historic heritage, water management, and traffic.

Once the EIS is completed, it will be submitted to DIPNR together with the Development Application for the proposed quarry. The EIS will then be placed on public exhibition for a minimum of 28 days. During this time, government agencies and the community can make submissions to DIPNR on the Development Application. The Minister with the assistance of DIPNR will then weigh up all the information about the proposal including, environmental, economic and social aspects, and determine whether or not the project should proceed. Any development consent granted for the project will be subject to conditions which will specify environmental management requirements for the development and operation of the quarry.

INVOLVING THE COMMUNITY

The community involvement program will involve a range of mechanisms to provide information and obtain the views of the community. These include face to face meetings, presentations, telephone surveys and community information sheets etc.

Meetings with local residents, individuals and groups with an interest in the project will commence during August 2004.

>> FURTHER INFORMATION

If you would like further information on the proposal or would like to make a time to meet with someone to discuss the proposal in more detail, please call to speak to either Jacqueline Stokes from Coakes Consulting (0417 454 727) or Michael Heath from Readymix (0438 243 054).

We welcome your input.

Facilitated by

COAKES CONSULTING

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Readymix™

Lynwood Quarry Proposal

Community Comment

NOVEMBER 2004

COMMUNITY INFORMATION SHEET NO.2

Readymix Holdings Pty Ltd proposes to establish a major hard rock quarry on their land to the West of Marulan to provide high quality construction grade rock suitable for producing concrete, road and other heavy construction and building products. The project is of significant regional importance and is located adjacent to major transport links providing ready access to major markets.

Coakes Consulting has been appointed to undertake a social impact assessment and community involvement program for the proposed quarry. As part of this program an initial round of community consultation was undertaken in August 2004. The purpose of the consultation was to provide the community with an overview of Readymix's proposal and to identify any issues associated with the development. This information sheet provides a summary of the key issues raised as part of the initial round of consultation with community residents.

THE PROCESS

The Social Impact Assessment process has a number of distinct phases:

1. Identification of community issues
2. Assessment and evaluation of issues — WE ARE HERE
3. Development of mitigation strategies to address issues raised
4. Completion of EIS/SIA, including impact monitoring

To inform the community and identify stakeholder issues, a number of methods have been used. These include:

- **Community information Sheet** – Information sheets providing an overview of the proposal were distributed to over 200 households in Marulan and surrounding areas.
- **Stakeholder interviews** – personal interviews were undertaken with 55 stakeholders including local residents living in proximity to the site, local government, local businesses and community organisations with an interest in the proposal.
- **Random Survey** – a random telephone survey of 174 households was undertaken across the township of Marulan and surrounding suburbs.

Having identified the issue of importance and concern to the community, these issues will be assessed and evaluated as part of the Environmental Impact Statement prepared for the project. Where appropriate, strategies will be developed to maximize the positive and minimize the negative impacts of the proposal.

STAKEHOLDER INTERVIEWS

In general, most participants were supportive of the development of a quarry in Marulan citing the economic benefits i.e. principally local employment, associated with the proposal. Participants indicated that a lack of employment opportunities in the township in the past had meant that people had to move out of the locality or travel significant distances to find work.

Participants also acknowledged that any new industry in the town would also provide benefits for the community, in terms of an increase in the town's facilities. It was also acknowledged that new people in town could be of benefit to the town's social fabric.

>> *'I think more people in town is good for our kids – it means that they are not so insular'*

>> *'I am all for having new faces in the town'*

A number of key themes emerged from the consultation process. These issue themes are outlined in detail below.

Dust

Dust was a key issue identified by participants in relation to the quarry proposal. Some participants were concerned that the prevailing south west wind could potentially carry dust from the quarry in the direction of the town.

>> *'Noise I can live with, but dust is a real problem'*

Two participants raised the issue of health effects associated with dust:

'I am all for new jobs but we have to think about health'

Participants also requested further information regarding dust monitoring and modeling.

Blasting

A further prominent issue theme identified by participants related to blasting at the quarry. Concern related to the potential time and frequency of blasting and the potential damage to property i.e. cracking of walls.

'What guarantees do we have that Readymix will do the right thing in terms of blasting?'

Transport

Current road traffic from Readymix's existing quarry, Johniefelds, prompted participants to raise the issue of road traffic to and from the proposed quarry.

'There are two key things to make this project work – keep the trucks off the road and local employment'

Some participants asked about a potential increase in road traffic during the construction phase of the quarry.

'Will this mean more trucks on our roads?'

Some of those interviewed felt that the existing roads through Marulan were poorly maintained. It was also expressed that any road levies paid by companies to use public roads should be directed to improve the roads directly affected by the trucks.

'We don't understand what the Council does with all the money Readymix pay for the roads'

Participants also raised the issue of transport of material from the quarry via the rail, specifically the impact of loading trains and increased trains travelling through Marulan.

'(Readymix) should have to do something about the level crossing due to more trains'

Noise

A further issue raised by participants related to the level of noise generated by the quarry operations. Specifically, participants were concerned about potential noise associated with the quarry's infrastructure. Participants also asked what amount of noise would be generated by the quarry outside normal business hours, i.e. night time operations.

>> *'We have a strong wind here and it will blow the noise this way'*

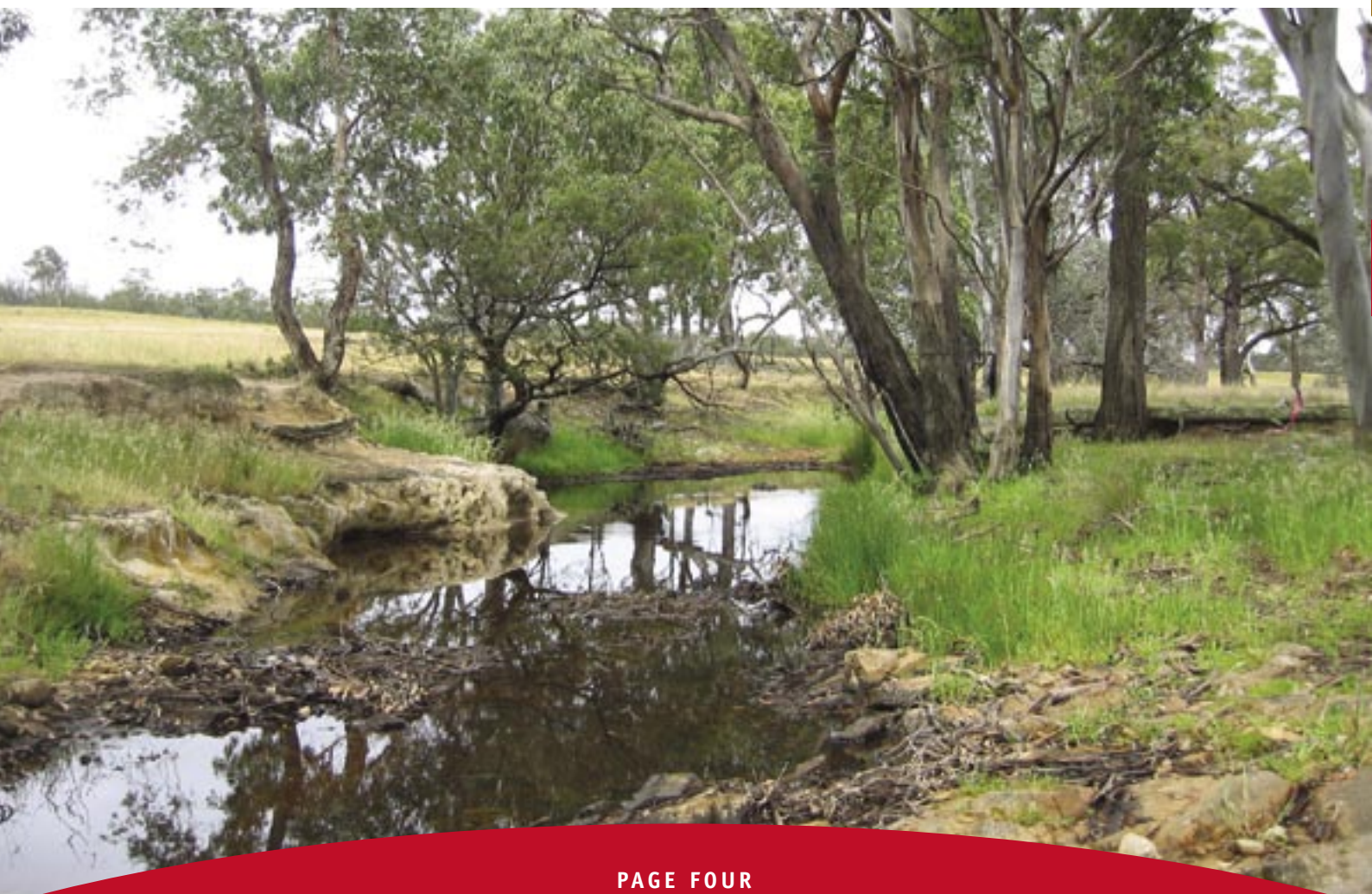
>> *'I've retired down here for peace and quiet'*

Residents requested information on noise monitoring and noise predictions, associated with the proposed development.

Water

The issue of water was also an important issue raised by participants. Concerns centred on the supply of water to the quarry for production and dust suppression. Participants were concerned that the need for water for quarry activities would impinge on Marulan's town water supply.

>> *'Where will Readymix source water from to run the quarry – the town has not any to spare'*



Community contribution

Most of those interviewed agreed that Readymix had been good corporate neighbours; however participants did raise the question of Readymix's contribution to the community. A number of participants felt that if the proposal was to go ahead, Readymix should make a commitment to the community e.g. financial donations or in-kind support. Suggestions ranged from the provision of assistance for the development of a sports recreation centre in the township, donations to the local school, to the supply of gravel for community buildings.

'Readymix have been good in the past in supporting the town, they were marvellous at the Australia Day celebrations'

'Readymix should start doing a bit more for the town'

Property value and development

A key issue for some residents related to the impact of the proposed quarry development on property value. It was suggested that should a quarry be developed in the area, that this may have a negative impact on property values. This was largely seen to be due to a decrease in visual amenity and potential noise impacts e.g. blasting. However, other residents also saw the potential for property prices to rise due to increased opportunities in the region.

Flora and fauna

Some participants were also concerned at the amount of land that may need to be cleared for construction of the Lynwood quarry. A number of participants asked if the quarry would disturb local wildlife in the area and what measures would be put in place to minimise impacts on the local flora and fauna.

RANDOM COMMUNITY SURVEY

Following interviews with key stakeholders i.e. residents in close proximity to the quarry site and groups with an interest in the proposal; a random telephone survey of households in Marulan and Marulan South was undertaken in late August/early September, to provide an opportunity for the wider community to also have an input to the proposal. Respondents were asked a number of questions relating to their knowledge and awareness of the proposal and their attitudes towards the proposal.

Those responding to the survey were aged between 15 and 79 years, with an average age of 51.6 years. Approximately 40% of respondents were male and 60% were female. Thirty-eight percent of respondents had been residents at their address for less than five years and 58% had been resident at their current address for less than ten years.

The points below summarise the key findings of the survey.

Key Findings of the Survey

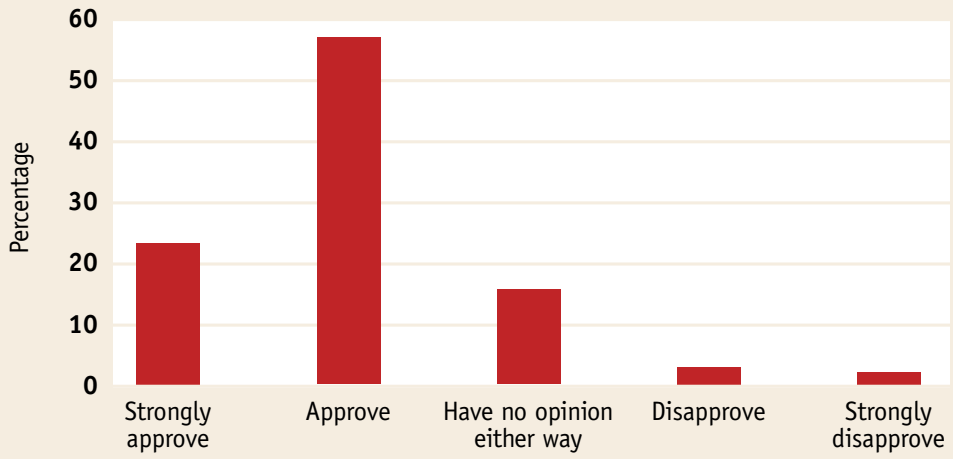
- Awareness of the quarry proposal was high (85%), however 41% of all survey respondents indicated that, while aware, they had no specific knowledge of the proposal.
- 80% of all respondents indicated that they either 'strongly approved' or 'approved' of the quarry proposal.
- 55% of all respondents indicated that they had no issues of concern associated with the proposal. Of the remaining respondents, 24% raised the issue of dust impacts from the operation. Other perceived impacts of quarry operations were traffic congestion related to trucks from the quarry (12%) and noise from quarry operations (12%).
- Attitude statements indicated that while a significant percentage of the community believed the quarry would go ahead regardless of what the community thinks (52%), the majority of residents trust the development approval process that is being undertaken for the quarry (74%).
- 79% of respondents believed that the benefits a quarry would bring to the area would outweigh any of the disadvantages. Nearly all respondents (92%) believed the proposed quarry would make an important contribution to the local economy in the region and that it would not detract from the area (78%).

In summary, the survey highlighted the views of the broader community in and around Marulan and Marulan South in relation to the Lynwood quarry proposal. Furthermore, the survey assisted in identifying the issues of importance to the community that require further consideration as part of the formal Environmental Impact Statement for the proposal.

'Given what you now know about the proposed quarry, would you...'

Response	Frequency	Percent
Strongly approve	40	23.0
Approve	99	56.9
Have no opinion either way	27	15.5
Disapprove	5	2.9
Strongly disapprove	3	1.7
Total Respondents	**174**	**100.0**

Source: EBC (2004).



COMMUNITY QUESTIONS

During the consultation, participants raised a number of questions in regard to the development of the quarry. The most frequently asked questions are listed below:

How many people will be employed by Readymix at the new quarry?

At this stage Readymix estimate that there will be in the order of 50 permanent employees working at the Lynwood quarry.

What is the timing for this project? How long will it take to get approval?

Readymix plan to lodge the Development Application and Environmental Impact Statement in the first half of 2005 with the view to gaining approval in the first half of 2006. Construction would then commence in 2006.

What will happen to the existing Readymix Quarry - Johniefelds?

Johniefelds will continue to service the local market in accordance with it's current approvals.

Will the Lynwood Quarry be accessing the same type of rock as is currently being sourced from Johniefelds?

Yes, the proposed Marulan quarry will target the same type of rock currently quarried by Johniefelds, although the Lynwood site has a much larger resource. The resource on the Lynwood site is a high grade igneous hard rock, suitable for a range of construction projects and will provide high quality construction grade rock suitable for producing concrete, roads and other heavy construction products.

Will the new quarry mean more trucks on the road through the Marulan township?

No, once the quarry is operational, it is proposed that the bulk of the quarry's output will be transported by rail to Sydney. Local and regional markets will be serviced by road transport via a direct link onto the Hume Highway. The proximity of the proposed Lynwood Quarry to the Hume Highway and main southern railway is a major consideration in the planned development of the resource.

What about traffic during construction phase?

During contruction of the new road, there will need to be construction traffic access through the Marulan township. This access is planned to be primarily through Marulan's industrial area.

Does Readymix plan to put any other industry on the site?

No, this proposal is for the development and operation of a quarry only.

Where will the rail loop be located?

A dedicated balloon rail loop will be located on Readymix's land to the south of railway line.

Will there be a flyover over the road?

Readymix is currently designing the intersection with the Roads Traffic authority.
A flyover is one of the options being considered.

FEEDBACK

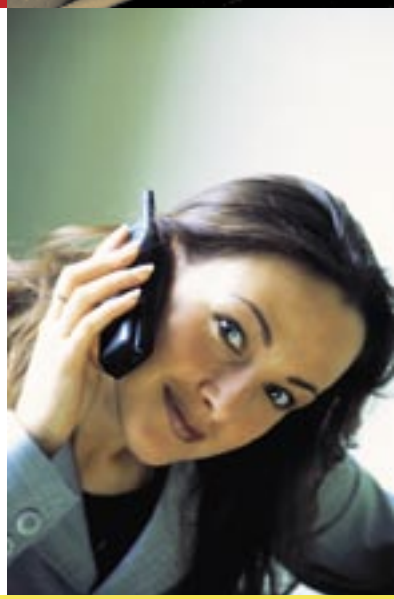
We have enclosed a Fax Feedback Form with this information sheet to obtain any comments or feedback that you may have on the information presented. If you feel we have omitted any issues, please note your issue/ concern on the form and fax to Coakes Consulting on 02 4862 3936.

THANK YOU

Thank you to all participants who gave up their time to discuss their issues with Jacqueline and John or who participated in the telephone survey. If you would like further information on the proposal or would like to meet with us individually, please do not hesitate to contact:

Jacqueline Stokes	Coakes Consulting	0417 454 727
Mike Heath	Readymix	0438 243 054

We look forward to further contact in relation to the proposal.



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Readymix™

Lynwood Quarry Proposal

Environmental Studies Overview

MARCH 2005

COMMUNITY INFORMATION SHEET NO.3

Readymix Holdings Pty Ltd proposes to establish a major hard rock quarry on their land to the west of Marulan to provide high quality construction grade rock suitable for road, construction and building projects.

In November 2004, following consultation with over 200 residents in Marulan, a number of community issues were identified relating to the proposal (Community Information Sheet No.2).

The purpose of this information sheet is to summarise the key findings of the environmental studies undertaken as part of the Environmental Impact Statement (EIS) for the project. These studies have been undertaken by Umwelt (Australia) Pty Limited, specialised environmental consultants.

KEY FEATURES OF THE PROPOSED LYNWOOD QUARRY

Details of the proposed Lynwood Quarry were included in our first community information sheet (No.1) which was sent to all local residents in August/ September 2004.

Since this time, the project design has been refined taking into account a range of factors, including the findings of the environmental impact assessment and issues raised by the community during the consultation program.

The key features to date of the refined Lynwood Quarry proposal and the layout of the quarry are outlined in the map on page 2.

Key features

- Approval is being sought for an initial minimum 30 year quarry life. Readymix is likely to continue quarrying at the site beyond this 30 year period, but the company would need to seek future approvals to extend the quarry life.
- Production of up to 5 million tonnes per annum (Mtpa) of hard rock products.
- Approval to transport up to 5 Mtpa from the site by rail – between 4 and 5 trains per day.
- Approval to transport up to 1.5 Mtpa of the 5 Mtpa from the site by road for delivery to local and regional markets.

- Key infrastructure to be established for the quarry will include:
  - a modern three phase crushing and screening plant which will be enclosed and have a dust extraction system;
  - a balloon rail loop and rail loading facility for loading product onto trains;
  - a truck loading facility for loading product into road haulage trucks;
  - an access road linking directly with the Hume Highway via an intersection proposed to be constructed at one of two locations south of Marulan. The final location will be determined in consultation with the RTA;
  - various other infrastructure including a pre-coat plant, workshop, laboratory, office buildings, truck wash station, weighbridge and other minor infrastructure.
- Hours of operation will vary for different quarry activities: drilling and overburden removal will occur during daytime hours only; quarrying during daytime and evening periods; and crushing, screening and product loading undertaken 24 hours per day.
- The quarry is expected to employ approximately 80 people at full production, approximately 15 of which are likely to be full-time contractor positions. There will be additional contract workers required for activities including maintenance and product haulage.

As this is a new quarry, there will also need to be substantial construction works undertaken prior to the commencement of quarrying. The key features of the construction phase are outlined below.

Key features of the construction phase:

- the construction phase will last for approximately 2 years;
- construction phase employment will peak at approximately 140 personnel;
- prior to the completion of the interchange and access road, construction access will be through the Marulan light industrial area (via Wilson Drive).

ENVIRONMENTAL STUDIES

Over the past 6 to 12 months, Readymix has appointed Umwelt Australia Pty Ltd to undertake a range of environmental studies to define the potential impacts of the proposed Lynwood Quarry.

These studies are now almost complete and are being used in the preparation of the Environmental Impact Statement (EIS) for the project.

The key findings of each of the major studies are discussed below. Many of these issues were raised during the initial round of community consultation conducted in August 2004.

>> NOISE AND BLASTING

Noise has been a key issue raised by community residents and a detailed noise and blasting assessment was undertaken for the proposed quarry to assess the potential impacts of noise, ground vibration and air-blast on surrounding residences.

Noise – key findings

- A survey of existing noise levels was undertaken on and around the project area. This existing noise level information was used to determine the noise goals for the project – the noise goals are set in accordance with the NSW Department of Environment and Conservation (DEC) guidelines.
- Initial modelling was undertaken early in the design phase to identify possible noisy parts of the operation and based on this modelling numerous noise controls have been included in the project design. Some of these controls include:
  - Enclosing all sections of the crushing and screening plant located above ground.
  - The operation of much of the mobile equipment in daytime hours only.
  - Lining of the truck and train loading bins to reduce noise during loading.
  - Noise attenuation work will be undertaken on the trucks working on the eastern overburden emplacement area; and
  - Restriction on the number of night-time truck deliveries.
- The modelling results indicate that with these controls in place, the proposal will meet the relevant noise goals at all surrounding residences.
- Noise modelling of the construction phase was also undertaken and again indicated that noise goals will be met at all residences.
- The assessment also specifically considered noise impacts associated with rail and road haulage of product and found that the proposal's additional trains and trucks would make insignificant contributions to the existing noise levels along the transport routes.

Blasting – key findings

- A detailed blasting impact assessment was undertaken to assess potential ground vibration and air blast impacts on all residential locations and infrastructure.
- The assessment compared predicted levels with the relevant ground vibration and air blast limits for private residences.
- The assessment found that predicted ground vibration and air blast levels from the proposed quarry will be within the limits for all surrounding residences and below the level which may impact on surrounding infrastructure.

In summary, the noise and blasting assessment found that with management controls in place, noise and blasting limits will be met at all surrounding residences.

TRANSPORT

Transport was a further issue raised by community residents in relation to the quarry proposal. Impacts can be divided into three key sections, these are: rail transport; construction traffic; and operational traffic. These issues are discussed further below.

Rail transport – key findings

- The Main Southern Railway has sufficient capacity for the additional trains proposed by this development.

Construction traffic – key findings

- Construction access will be through the Marulan light industrial area.
- Readymix will hold further discussions with Council about the use and condition of the roads planned for construction access.

Operational traffic – key findings

- Construction of the major interchange on the Hume Highway allows direct access from the quarry onto the Highway preventing operational traffic impacts on Marulan. The intersection has been designed to comply with the RTA's requirements ensuring safety for road users.

>> AIR QUALITY

An air quality assessment has been undertaken to assess potential dust impacts associated with the proposed quarry. Once again, this was a key issue raised by local residents during the consultation process.

Key findings

- A dust monitoring network was established early in the project to measure existing dust levels in the vicinity of the proposed quarry. This included both depositional dust (dust which settles onto the ground) and fine dust which remains suspended in the air.
- A detailed dust model was developed to determine the potential dust impacts associated with the quarry. The model included a range of dust controls which were built into the project design including:
  - Enclosure of the crushing and screening plant and installation of a dust extraction system;
  - Covering of all conveyors;
  - Installation of water sprays on some stockpiles;
  - Watering of haul roads to reduce dust; and
  - Timely rehabilitation of disturbed areas.
- The predicted dust impacts were compared to DEC specified dust limits. These criteria are designed to ensure that projects don't impact on either health or public amenity (i.e. don't create nuisance dust).

In summary, the air quality assessment found that with management controls in place, dust limits will be met at all surrounding residences.

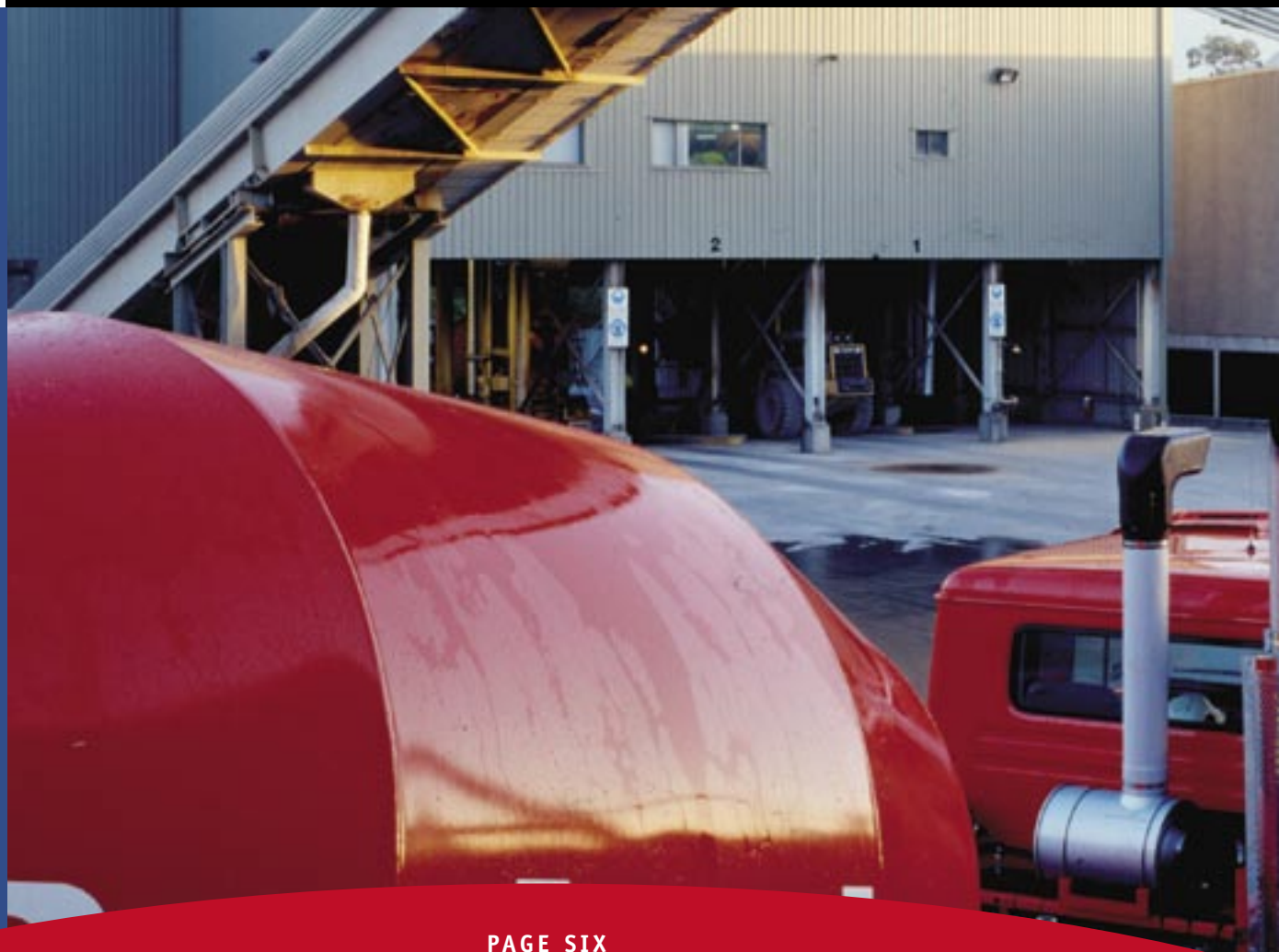
VISUAL

A visual assessment has been undertaken to determine the impact of the proposed quarry on the visual amenity of the area.

Key findings

- Views of the quarry pit and quarry infrastructure are only expected to be possible from one residence to the south of the quarry. This residence will also have views of overburden and excess product emplacement areas. Readymix will discuss management of these impacts with this resident.
- The tops of the overburden emplacement areas and excess product emplacement areas will be visible from a number of residences to the east of the quarry (potentially including residences on the western edge of Marulan), however, these views will be partially screened by existing vegetation.
- The emplacement areas will be rehabilitated in a timely manner so that the visual impacts associated with their establishment are as short-term as possible.
- In addition to timely rehabilitation, Readymix also propose to plant trees in specific locations to assist in screening views of the emplacement areas.

In summary, elevated sections of the proposed quarry emplacement areas will be visible from residences to the east of the quarry, including residences on the edge of Marulan, however, significant views of the quarry will be limited to an isolated residence.



>> WATER MANAGEMENT

Assessments of the potential impacts of the quarry on both surface water and groundwater have been undertaken. Of particular concern to the community is the supply of water for production and dust suppression and the impact on the local water supply. The key findings are discussed below.

Groundwater – key findings

- There will be minimal groundwater inflow into the quarry pit.
- Groundwater drawdown effects associated with the quarry will be limited to the area surrounding the quarry and will not therefore impact on any surrounding groundwater bores.

Surface water – key findings

- The quarry has been designed to ensure that clean runoff is separated from runoff from disturbed quarry and infrastructure areas. Sediment and erosion controls have been designed to ensure any runoff from disturbed areas is appropriately treated.
- No groundwater or water from the infrastructure areas or quarry pit will be allowed to discharge from the site. This water will be captured and used on-site in the crushing and screening plant and for dust suppression.

In summary, the quarry design maximises water efficiency and reuse, with other water supply options currently being investigated by Readymix to provide security of supply.

ECOLOGY

During the consultation process, residents raised the issue of clearing land for development of the quarry and the impacts on local flora and fauna. The ecology study was undertaken to assess the impact of the proposed quarry on native flora and fauna.

Key findings

- Much of the study area has been cleared, however, areas of woodland and dry forest vegetation remain, particularly to the north of the Main Southern Railway.
- Five threatened fauna species were recoded at the site, including one glider, one woodland bird and three insectivorous bats.
- No threatened flora species were recorded.
- An assessment of the potential impact of the project on the threatened fauna species recorded indicated that the local populations were unlikely to be significantly impacted. However, a range of management measures will be put in place to further reduce potential impacts.
- Management measures proposed include:
  - All vegetation not required to be disturbed for the initial quarry life will be retained and protected;
  - A flora and fauna management area will be established;
  - Riparian corridor areas will be protected and enhanced through natural and assisted regeneration; and
  - Readymix proposes to plant additional vegetation aiming to provide connections between existing areas of native vegetation.

In summary, with the proposed management measures in place, the proposed quarry is considered unlikely to significantly impact on locally occurring threatened flora and fauna species.

>> ABORIGINAL ARCHAEOLOGY

The Aboriginal Archaeology study was undertaken to identify and assess the nature and significance of Aboriginal cultural heritage within the study area. The study was undertaken in conjunction with the Pejar Local Aboriginal Land Council and the Gundungurra Tribal Council Aboriginal Corporation who are representatives of the local Aboriginal community.

Key findings

- A total of 52 previously unrecorded Aboriginal heritage sites were located during the study. Of these, 31 were artefact scatters; 12 were isolated finds (single artefacts); seven were scarred trees and two were stone arrangements.
- Of the sites recorded in the study area, several will be need to be disturbed for the proposed quarry and associated infrastructure. The remaining sites will be protected including the formation of an Aboriginal Cultural Heritage Management Area.
- Permits for the destruction of the sites within the quarry footprint will be required from the NSW DEC.

In summary, the proposed quarry will impact on a number of Aboriginal heritage sites, however, the majority of sites will be protected.

HISTORIC HERITAGE

The Historic Heritage study was undertaken to identify any items of European heritage within the study area and to assess the potential impacts of the proposed quarry on these items.

Key findings

- A section of the Readymix land adjacent to the Hume Highway was formerly part of the old Marulan township and is listed on the State Heritage Register (SHR).
- In addition to the SHR area, the study located another eight historic heritage sites within the study area.
- Up to four of these sites plus a section of the SHR area may be impacted by the proposed quarry and permits to impact these sites will be required from the NSW Heritage Office.

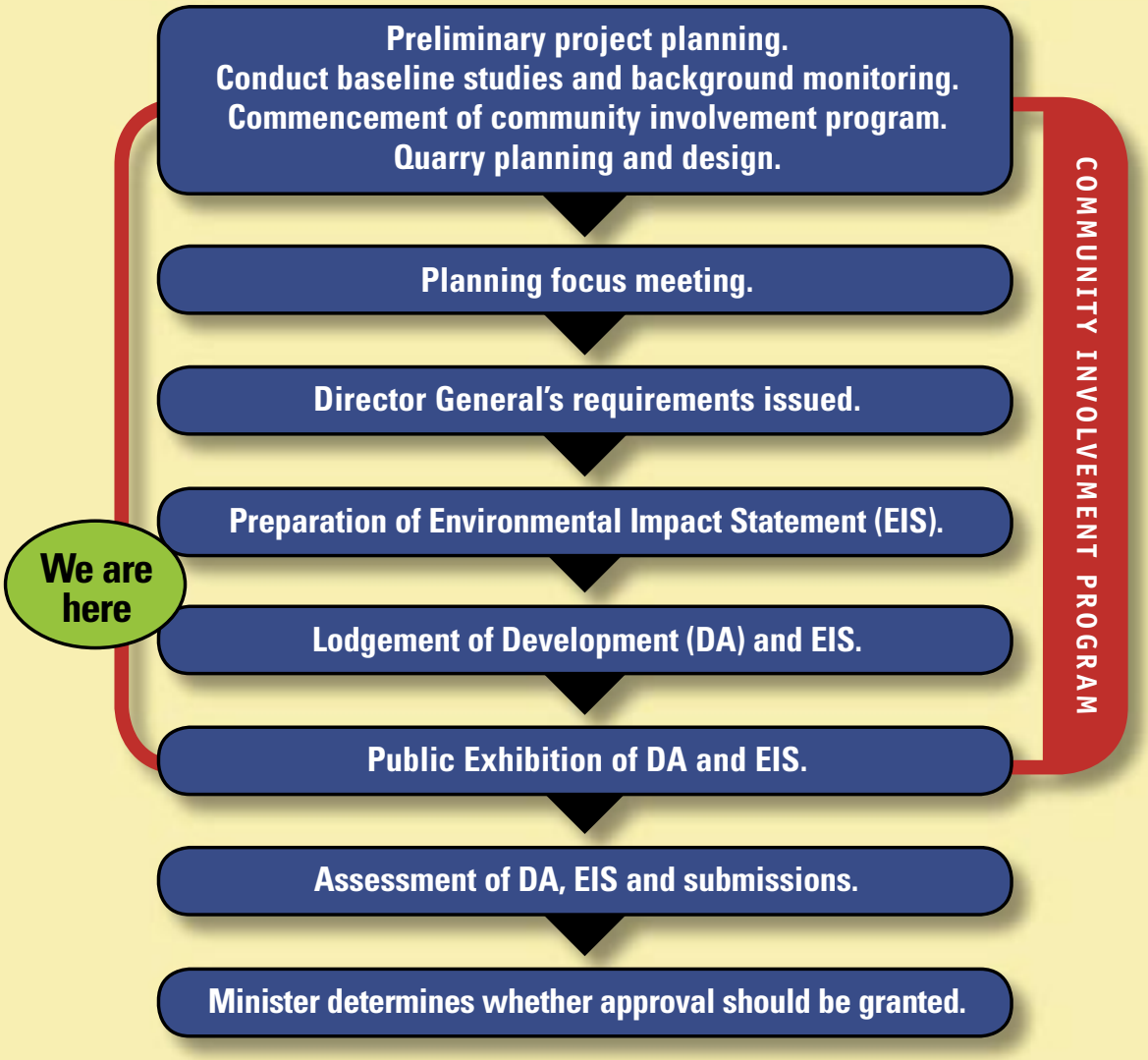
In summary, the proposed quarry will impact on several historic heritage sites and a section of the old Marulan township SHR area and will require specific approvals to undertake works in these areas.

WHERE TO FROM HERE?

Given that the environmental studies are nearing completion, the environmental impact statement is in the process of being finalised. However, prior to finalisation, further consultation is being undertaken with residents in the Marulan township. This is involving personal meetings with residents and key stakeholder groups and an information day on the project, which is being held on Saturday 12th March in the Marulan Public Hall in George Street, Marulan (adjacent to the Post Office).

Information and feedback collected as part of the consultation program will also be reported in the Social Impact Assessment, as part of the Environmental Impact Statement (EIS). This section will outline the likely social and economic impacts of the project on the community and will discuss the issues raised by residents during the consultation process.

However this is not the only opportunity for further input, community residents will be able to provide comments on the proposal once the Environmental Impact Statement (EIS) has been submitted to government as part of the formal public exhibition phase (see the chart below).



>> FURTHER INFORMATION

If you would like to obtain further information on any of the environmental studies or on the proposal generally, please don't hesitate to contact:

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Mike Heath	Readymix	0438 243 054

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