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Planning

**MAJOR PROJECT ASSESSMENT:
Tharbogang Quarry and Landfill
(MP 06_0334)**



Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

July 2010

Cover photograph: existing sediment pond on site (source: Black Mountain Projects Pty Ltd)

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EXECUTIVE SUMMARY

Griffith City Council (Council) proposes to expand its existing quarry and landfill operations in Tharbogang, located approximately 9.5km northwest of Griffith.

Quarrying operations would be extended into 2 additional quarry pits, located in Lot 202. Council seeks approval for the extraction of up to 315,000 tonnes per annum of quarry product, for up to 25 years, to provide road base and construction materials to the local market.

Council also has limited capacity at the existing landfill on site and a growing population in the Griffith region to contend with. As a result Council is also seeking approval to expand landfilling operations into the existing quarry void once quarrying has ceased.

The proposal has a capital investment value of \$3 million and would employ 10-12 people. The proposal constitutes a 'major project' under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), and consequently the Minister is the approval authority.

During the exhibition period, the Department received 12 submissions, including 5 from public authorities and 7 from the general public. Submissions from public authorities generally support the proposal. However, all submissions received from the general public objected to the proposal and raised concerns regarding noise and blasting, air quality, groundwater contamination and the land to which the originally proposed biodiversity offset strategy applied.

The Department has assessed the project application, Environmental Assessment (EA), submissions received and the Council's Response to Submissions in accordance with the requirements of the *Environmental Planning and Assessment Act 1979*.

The Department is satisfied that the potential impacts of the project can be mitigated, offset and/or managed to ensure an acceptable level of environmental performance. The Department recommends approval of the project, subject to conditions which address extraction and landfilling operations, on-going environmental monitoring and management, rehabilitation, compliance mechanisms, independent reviews and performance audits. The Department believes that through the implementation of these conditions the site would operate with an improved level of environmental performance.

The Department is further satisfied that there is a demand for additional landfill space given the expanding population and the lack of environmentally sound alternatives.

1. PROPOSED PROJECT

1.1 Background

Griffith City Council (the Proponent) proposes to expand operations at its existing quarry and landfill development on McPhersons Range (Range) near Tharbogang, approximately 9.5 kilometres (km) northwest of Griffith (see Figure 1). The project is known as the 'Tharbogang Quarry and Landfill Project'.

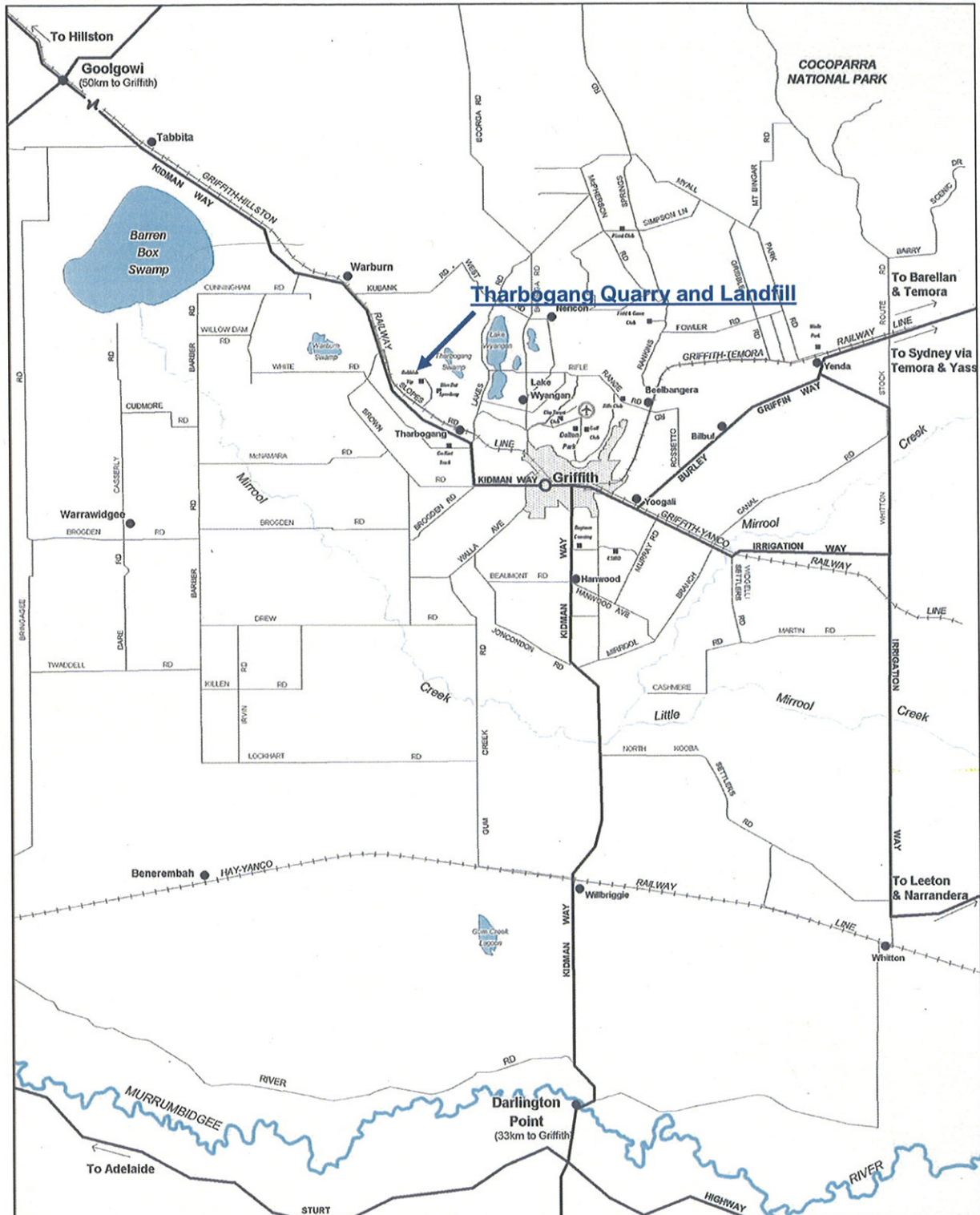


Figure 1: Project Location

The existing quarry has been operational since 1991 providing road base for developments within the LGA. The requirement for gravel has significantly increased in the last 10 years and on some occasions, Council has exceeded the limit of extraction outlined in the Environmental Protection Licence (EPL), of 50,000 tonnes per annum (tpa).

The existing landfill has been operational since 1984 and has approval to receive up to 100,000 tonnes per year of general solid and construction waste, however the site generally only receives up to 20,000 tpa. There is no restriction on the airspace for the current landfill and therefore no specific limit to what can be received, other than the physical limitations of the site's topography.

Existing operations within Lot 202 include:

Quarrying:

- Crushing, stockpiling and blending of rock carried out between 7.00am – 3.00pm Monday to Saturday;
- stockpiling and transporting of gravel materials from site by haulage trucks;
- extraction of between 79,000 tpa and 155,000 tpa (since 2002, which exceeds the extraction limits outlined in the EPL); and

Landfilling:

- landfill operations undertaken since 1984 (under Council approval);
- landfill operations carried out between 7.00am – 5.00pm Monday to Friday.
- receipt of up to 20,000 tpa of solid waste;
- receipt of domestic and industrial waste streams; and
- cut and fill sub-ground layers to bedrock using an advancing cell face.

1.2 Project Setting

The existing quarry and landfill is located in a natural depression in the central section of Lot 202, just below the ridgeline of McPhersons Range (see Figure 2), in the Griffith Local Government Area.

McPhersons Range ridgeline follows the south western boundary of Lot 201 and crosses Lot 202. The upper sections of the ridgeline have been previously cleared and surface gravel removed for road construction purposes. This area is now covered with regrowth vegetation. The Range mainly contains open woodland of Bimble Box and White Cypress Pine association on the gentle slopes, with Dwyer's Gum and Currawong association on the steeper slopes.

The 'Blue-Dot' speedway and associated infrastructure is located in the southern end of Lot 202 and covers an area of 12 ha, which is largely cleared of vegetation. The northern section of the site (Lot 201), which covers 100 ha, is undeveloped and covered with remnant native open woodlands.

The surrounding areas are primarily rural and agricultural, with pastoral grasslands and orchards adjacent to the site. Agricultural produce in the surrounding areas includes citrus and stone fruits, wine grapes and almonds. A number of residential dwellings lie within the vicinity of the site, the closest being 600m away (see Figure 8 in section 4.7).

There are a number of ephemeral swamps or wetlands in the region of the proposed quarry and landfill. The closest of which, Tharbogang Swamp, is an ephemeral swamp located approximately 1.5km to the east of Lot 202. Also, Lake Wyangan, a large and permanent surface water feature of approximately 300 ha, which is used for water sports, is located approximately 4km to the east of the site and is separated from Tharbogang Swamp by a minor topographic high.

1.3 Project Description

The major components of the project are summarised in Table 1, and depicted in Figures 2 and 3. The project is described in full in the Council's Environmental Assessment (EA), which is attached as Appendix F.

The initial proposal submitted to the Department in September 2009, involved the extraction of up to 600,000 tonnes of quarry product for a period of 50 years and the concurrent operation of the landfill. However, this was not considered consistent with the Director-General's requirements and was also not considered to be an acceptable time for such an approval by the Department, principally because the EA did not assess the full impact of the 50 year project, and in addition, such a lengthy approval would not allow for technological or environmental advancements. The project was subsequently modified to include the extraction and processing of quarry product for a period of 25 years, being

restricted to pits 101 and 103 in Lot 202 only, and the continuation and expansion of land filling operations for a 25 year timeframe also.

Table 1: Major components of the project

Aspect	Description
Project Summary	Expansion of the quarry and landfill at Tharbogang, including: - staged extraction of up to 315,000 tonnes per annum (tpa) of gravel material from quarry pits 101 and 103, over 25 years; - landfilling of up to 35,000 tpa of waste materials; - extension of the landfill into the existing quarry void; - construction of secure fencing, a second crusher, sealed carpark for utility vehicles, bunded concrete washdown area and associated quarry infrastructure; - construction of secure fencing, upgrades to the washdown bay, a waste transfer station and associated landfill infrastructure; - improvements to the site access road and intersection; and - progressive rehabilitation of the site.
Total Site Area	357.1 hectares (ha) (Lots 201 and 202)
Existing Quarry and Landfill area	15 ha
Project Life	Up to 25 years.
Employment	10-12
Capital Investment Value	\$3 million.
Access/ Product Transport	All products would be transported by road, via Kidman Way.
Quarry	
Proposed Extraction Area	15.2ha for pits 101 and 103
Extraction Method	Drilling, blasting, excavations, pneumatic rock breaking and crushing.
Extraction Staging	The existing quarry and landfill is described as Stage 1. Once extraction is completed in the existing quarry, extraction will commence in Pit 103 and then Pit 101 (see Figures 2 and 3).
Extraction Area Setbacks	A minimum 100m buffer along the western and eastern boundaries.
Resources	6.08 million tonnes of quarry product available in Pits 101 and 103
Depth of Extraction	The existing quarry and landfill is located on McPhersons Range at elevations generally above 145 metres. Extraction is to a variable depth of 10m below ground surface level, however due to the raised level of the site this would amount to a maximum depth of 125m above AHD (sea level).
Processing and Facilities	Quarry: Construction and operation of processing facilities, including two mobile primary crushers, 1 tracked rock drill and 1-2 front end loaders.
Main Products	Road base and building foundations.
Production	Up to a maximum of 315 000 tpa of product.
Hours of Operation	7.00am - 5.00pm Monday to Friday
Rehabilitation and Offsets	Progressive rehabilitation to a stable landform with native vegetation, compatible with the surrounding land use. The quarry uses an offset ration of approximately 12:1

Aspect	Description
Landfill	
Landfill Staging	Landfill operations will extend into the existing quarry area once extraction is completed and the current landfill is at capacity. The landfill will consist of 8 fully engineered cells, the cell sequence is shown in Figure 3.
Processing and Facilities	Landfill: Weighbridge platform and gatehouse, Waste Transfer Station (WTS), bins and skips, mobile machinery including: compactor, tipper truck and front end bucket loader.
Leachate and Gas Management	Isolated leachate collection system for each cell, with a flexible membrane liner, drainage layer and collection pipes and pump to pump the leachate to the holding tank. Leachate pumped back into the landfill areas to promote bioremediation of pollutants. Gases produced during the decomposition process are harvested and flared.
Waste Stream	Recival of up to 35,000 tpa of municipal waste, including: • general solid waste • asbestos • waste oil • lead acid batteries • triple rinsed pesticide and herbicide containers, in accord with DrumMuster requirements.
Hours of Operation	8.00am – 5.00pm daily
Rehabilitation	The landfill would be capped with a minimum of 0.5m of impermeable matter such as clay or geo-fabric. The top profile would be domed with a gradient of 5% and revegetated with shallow rooted shrub and ground layer species.

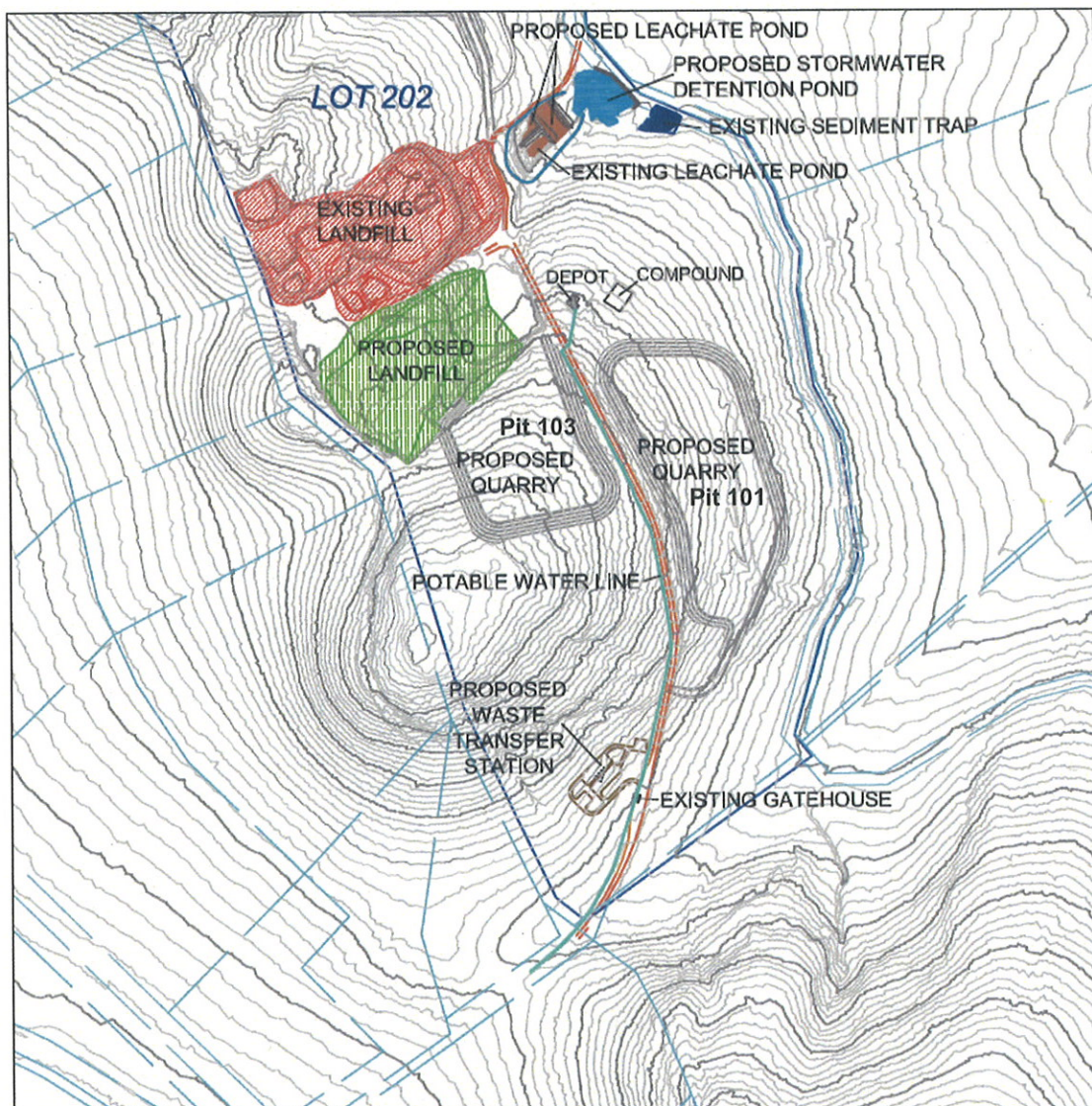


Figure 2: Project Layout

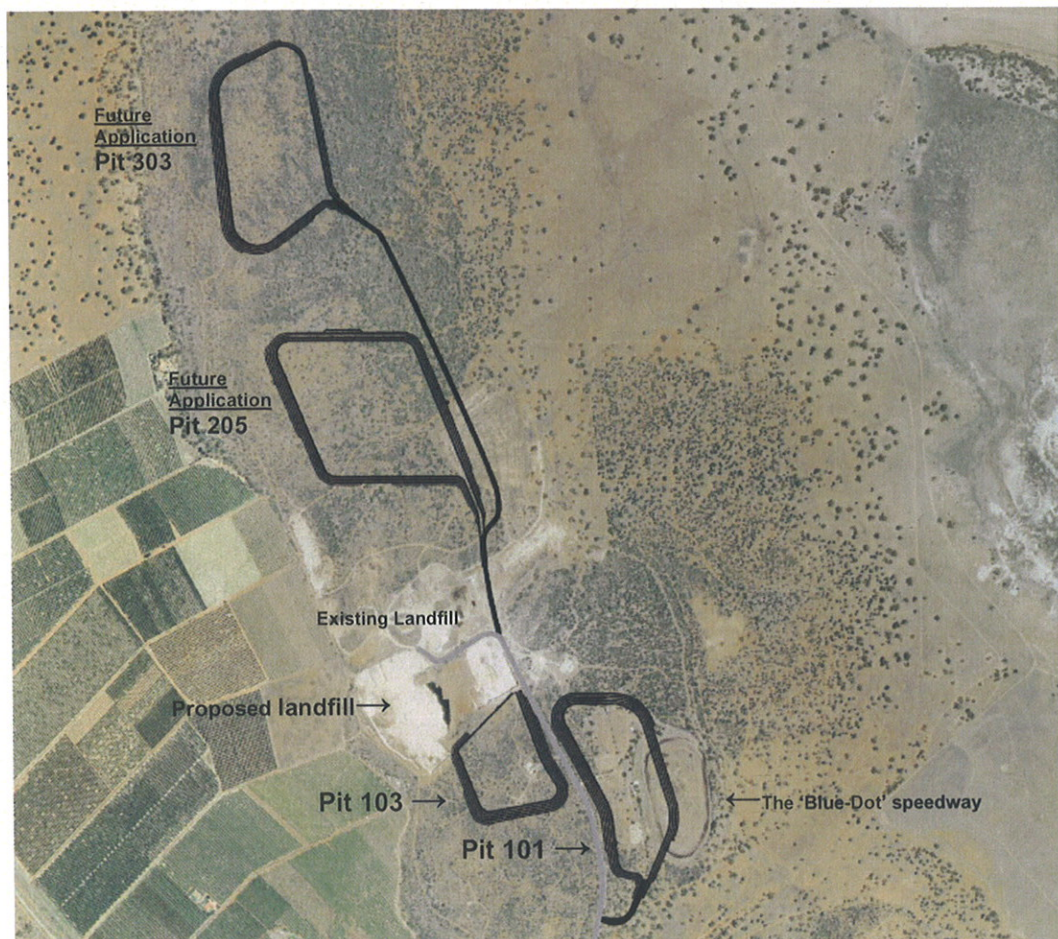


Figure 3: Project Staging

1.4 Project Need and Strategic Context

Griffith has experienced population growth over the past 5 years, which is expected to continue into the future. For instance, according to the Australia Bureau of Statistics, the LGA has seen an increase in population of 1.2% from 2008-2009, with an overall population growth of 0.9% since 2004. The proposal aims to produce up to 315,000 tpa of gravel products for use in road construction, as well as the expansion of the existing landfill area to accommodate for an increase in the population growth to the region of 1.2% per annum.

Griffith City Council maintains 191.65km of urban sealed roads and 380.93km of rural sealed roads within the LGA. Griffith is also a significant supplier of agricultural produce throughout NSW. The region produces 70% of the NSW wine grape production and 70% of the NSW citrus crop production, requiring a large number of trucks to use these roads each year. The Council is required to reseal approximately 37km of road each year due to general wear and tear. As the area continues to expand materials for road construction would be required for resealing and for the construction of new roads. The Department recognises that there is an ongoing need to produce high quality construction materials to meet ongoing demand for the region.

In addition, the Department acknowledges Griffith City Council will continue to need landfill capacity, in order to dispose of residual waste produced by the growing LGA, particularly because Griffith does not currently have a recycling program in place. As well as this, the added capacity allows for the potential for other surrounding LGAs to access the landfill, subject to further approval.

While the existing licence allows for the receipt of 100,000 tpa of general solid waste, this excessive amount is not justified and it is considered that approving this volume would hinder Council's plan to implement a successful recycling program for the region. In addition, the Department considers allowing 100,000 tpa of waste would act as a disincentive for Council to explore and invest in alternative waste treatments; as well as being inconsistent with Government's Policy to Waste Avoidance and Resource Recovery Strategy. Subsequently, the Department has recommended a significantly lower receipt rate of 35,000 tpa.

Importantly, the proposal also offers a project with the potential for improved environmental performance, as it would provide for a lined landfill, with a leachate and stormwater management system onsite, as well as a more updated waste management operation.

A number of project alternatives were presented in the EA, including sites such as Wumbulgal Quarry and Tyson Quarry located within the LGA. However, the EA considered that the project provides the best economic and social outcomes, with limited environmental impacts.

2. STATUTORY CONTEXT

2.1 Major Project

The proposal is classified as a major project under Part 3A of the EP&A Act, because it is development for the purpose of extractive industry with an extraction rate of more than 200,000 tpa, and therefore meets the criteria in Clause 7 of Schedule 1 of *State Environmental Planning Policy (Major Development) 2005*.

Consequently, the Minister for Planning is the approval authority for the project. On 25 January 2010, the Minister delegated his powers and functions as a determining authority under section 75J of the EP&A Act to the Deputy Director-General, to approve project applications with less than 25 public submissions and with a capital investment value under \$50 million. Consequently, the Deputy Director-General may determine the application under delegated authority.

2.2 Permissibility

The land subject to the application is currently zoned 5(a) - Special Uses (Quarry and Waste Depot). Under the Griffith Local Environmental Plan (LEP) 2002, extractive industries and landfill operations are permissible in this zone.

2.3 Exhibition and Notification

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the EA for a project publicly available for at least 30 days. After accepting the EA for the project, the Department:

- made it publicly available from 8 September until 9 October 2009:
 - on the Department's website;
 - at the Department's Information Centre, Griffith City Council and the Nature Conservation Council;
- notified landowners in the vicinity of the site by letter about the exhibition;
- notified relevant State Government authorities by letter; and
- advertised the exhibition in the Griffith Area News.

This satisfies the requirements in Section 75H(3) of the EP&A Act.

2.4 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director-General's report is required to include a copy of, or reference to, the relevant environmental planning instruments (EPIs) that substantially govern the carrying out of the project.

In relation to this particular project, the key relevant EPIs (notwithstanding the Major Development SEPP) are:

- *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development*;
- *State Environmental Planning Policy No. 55 – Remediation of Land*;
- *State Environmental Planning Policy (Infrastructure) 2007*;
- *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP)*; and
- *Griffith Local Environmental Plan 2002*.

Copies of these instruments are included in Appendix H.

Council has assessed the project against the relevant provisions in these EPIs in the EA (see Appendix E), and concluded that:

- the site is suitable for the proposed development and does not require remediation;
- there is justifiable demand for the proposed new landfill;
- the location of the proposed landfill is consistent with the locational principles in the EIS guideline for landfilling published by the Department; and
- the proposal is generally consistent with the objectives of the Griffith LEP and zone.

2.5 Other Approvals

The development may require additional approvals from other government agencies, including:

- a licence variation and/or a new EPL to be issued by DECCW; and
- approvals by the RTA under the Roads Act 1993, with regard to upgrading the site access.

2.6 Objects of the Environmental Planning and Assessment Act 1979

The Minister is required to consider the objects of the EP&A Act when making decisions under the Act. These objects are detailed in Section 5 of the Act, and include:

'The objects of this Act are:

- (a) to encourage:*
 - (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
 - (ii) the promotion and co-ordination of the orderly and economic use and development of land,*
 - (iii) the protection, provision and co-ordination of communication and utility services,*
 - (iv) the provision of land for public purposes,*
 - (v) the provision and co-ordination of community services and facilities, and*
 - (vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
 - (vii) ecologically sustainable development (ESD), and*
 - (viii) the provision and maintenance of affordable housing, and*
- (b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and*
- (c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.'*

The objects of most relevance to the Minister's decision on whether or not to approve this project are those under Section 5(a)(i), (ii), (vi) and (vii).

The Department is satisfied that the project encourages the proper use of resources and the promotion of orderly and economic use of the land. Environmental protection is considered in detail in Section 4 below. Following its consideration, both the Department and DECCW are satisfied that the project (and associated offset strategy) is able to be undertaken in a manner that would not result in a net loss of biodiversity values over the medium to long term, and would not significantly impact threatened species in the locality.

The Department has also considered the encouragement of ESD in its assessment of the project. This assessment integrates all significant economic and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences. The Council has also considered the project in the light of the ESD principles. Following its consideration, the Department is satisfied that the project is able to be conducted in a manner that is consistent with the principles of ESD. This is reflected in the conditions of approval, for example conditions requiring Council to carefully manage water onsite and to develop a community education program in order to encourage recycling in the region.

2.7 Statement of Compliance

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the Director-General's environmental assessment requirements issued with respect to the project. The Department is satisfied that the environmental assessment requirements have been complied with.

3. ISSUES RAISED IN SUBMISSIONS

During the exhibition period, the Department received a total of 12 submissions on the project:

- 5 from public authorities; and
- 7 from the general public.

A summary of the issues raised in submissions is provided below. A full copy of the submissions is attached in Appendix E.

3.1 Public Authorities

The **Department of Environment, Climate Change and Water** (DECCW) stated that although it was generally satisfied with the assessment there were a number of issues that needed to be addressed, such as determining the appropriate biodiversity offset area for the 25 year project, the inclusion of the landfill operations in the noise and dust assessments and clarification of the predicted noise attenuation from geographical features and land elevation contours. Also, DECCW advised that the Council was required to undertake further assessment of Aboriginal cultural heritage in the area.

DECCW's **NSW Office of Water** (NOW) did not object to the project. NOW raised concerns with the level of groundwater assessment undertaken and requested the establishment of monitoring bores on site to determine the groundwater flow direction and water quality, as well as a number of conditions regarding leachate management for the proposed landfill.

The **Department of Industry and Investment** (DI&I) did not object, but requested that the Council provide appropriate annual production data to DI&I.

The **Land and Property Management Authority** (LPMA) did not object, however requested further information regarding the management of the proposed offsets and how this would be secured in perpetuity, as well as details of proposed plant species to be used, and the long term rehabilitation of the landfill area. LPMA also stated that it does not support the offset of Crown land for the development of external parties and confirmed that the authority is unable to commit land as an offset. Further, LPMA requested that the Council develop a monitoring program for the Tharbogang Swamp.

The **Roads and Traffic Authority** (RTA), now part of the Department of Transport and Infrastructure, did not object, but recommended a number of conditions, including the preparation of a transport management plan, upgrades to the intersection at Access Road and Kidman Way and the requirement for the quarry operator to maintain a log book of extraction quantities and traffic movements.

3.2 Community

All 7 submissions from the community objected to the project. The main grounds for objection were related to direct and cumulative impacts on:

- *Air quality* – particularly operational dust and impacts on nearby residences;
- *Groundwater* – concern that groundwater flows have not been determined accurately and that the proposed landfill could potentially contaminate groundwater used by surrounding properties;
- *Noise* – impact on nearby residents, and further justification for the level of attenuation predicted in the EA;
- *Flora and fauna* - the originally proposed biodiversity offset area was partly located on privately owned properties, no consultation with landowners was undertaken regarding use of this land as an offset;
- *Assessment of Alternative Sites* – concerns that the assessment is misleading and incorrect, making Tharbogang appear to be the most appropriate project site; and
- *Visual* – the proposal would have long term visual impacts to surrounding properties and any new developments proposed for Lake Wyangang.

3.3 Response to Submissions

The Council has provided detailed responses to the issues raised in submissions (see Appendix D), as well as a revised Statement of Commitments for the project.

The Department has considered all issues raised in submissions and Council's responses to these issues in its assessment of the project.

4. ASSESSMENT

In assessing the merits of the project, the Department has considered:

- the environmental assessment, all submissions and response to submissions on the project (see Appendices D to F);
- the relevant environmental planning instruments, guidelines and policies;
- the objects of the EP&A Act, including the object to encourage ecologically sustainable development; and
- the relevant statutory requirements of the EP&A Act & Regulation.

The Department considered the key issues for the development to be:

- Waste Management;
- Biodiversity;
- Traffic;
- Noise and Vibration; and
- Air Quality.

These have been addressed in sections 4.1-4.7 of the report. All other issues are detailed in Table 9 below.

4.1 Flora and Fauna

Issue

The project would require the removal of approximately 15.2 ha of native vegetation from Lot 202. The project has the potential to impact 2 threatened plant species and a number of threatened fauna species.

Consideration

Flora

McPhersons Range contains significant vegetation and habitat values for local and regional ecosystems and provides a link between the Cobar Penneplain Bioregion and the Riverina Bioregion. Vegetation within Lots 201 and 202 form part of the McPhersons Range corridor, which is the largest connected area of remnant vegetation within the local government area and currently allows the movement of fauna across the region.

The natural vegetation in Lot 202 has been significantly modified by current landfill and quarry operations as well as the past removal of surficial gravels. The Lot contains four vegetation communities including White Cypress Pines, Dwyers Mallee Gum, Bimble Box and Currawong woodland. There are no endangered or critically endangered ecological communities listed under the *Threatened Species Conservation Act 1995* (TSC Act) occurring within the site.

The Council has proposed a number of mitigation measures and operational safeguards to minimise project-related impacts to flora. This includes the proposed area of extraction being designed to avoid native vegetation communities in Lot 202, as well as the progressive rehabilitation of all areas of disturbance when no longer required for extraction.

The Department and DECCW are satisfied that the project is unlikely to have a significant impact on any endangered flora communities or species, subject to adequate biodiversity offsetting (see below).

Fauna

The fauna assessment included surveys which identified a total of 76 fauna species within or surrounding the site. This includes 6 native and 3 introduced species of mammal, 4 species of

microchiropteran bats, 3 species of reptile and 2 amphibians, as well as 55 native and 3 introduced species of bird, 7 of which are listed as 'threatened' under the TSC Act. These species included:

- Grey Crowned Babbler;
- Grey Falcon;
- Major Mitchell Cockatoo;
- Glossy Black Cockatoo;
- Turquoise Parrot;
- Barking Owl; and
- Painted Honeyeater.

The Proponent undertook a Species Impact Assessment for each and found that the development was unlikely to have a significant impact on these 7 species.

Although no individuals or populations of the Superb Parrot, listed as threatened under the EPBC Act and the TSC Act, were recorded during the fauna surveys undertaken for the site, potential nesting sites for the parrot include hollow bearing trees, which were identified to the south of Lot 202 and in Lot 201. The proposal would not remove Bimble Box from Lot 202 or in the northern section of Lot 201 and therefore is unlikely to impact on any local populations of Superb Parrot.

No reptile, amphibian and mammal species recorded in Lot 202 is listed as threatened under the TSC Act. However, the more widely ranging micro bat species such as the threatened Fishing Bat, Little Pied Bat and Greater long-eared Bat may utilise the site on an occasional transitory basis.

The Council has designed the quarry pits to ensure that any high value fauna habitat is excluded from the development stages and have proposed wide buffer zones to be maintained across the site, so as to reduce any possible impacts to fauna. The fauna assessment concluded that the project would not result in a significant impact on any threatened fauna species and that the removal of 15.2 ha of forest from Lot 202 is unlikely to impact on any viable local population of threatened bird species or species of microbat.

The Department and DECCW are satisfied that the project is unlikely to have a significant impact on threatened fauna.

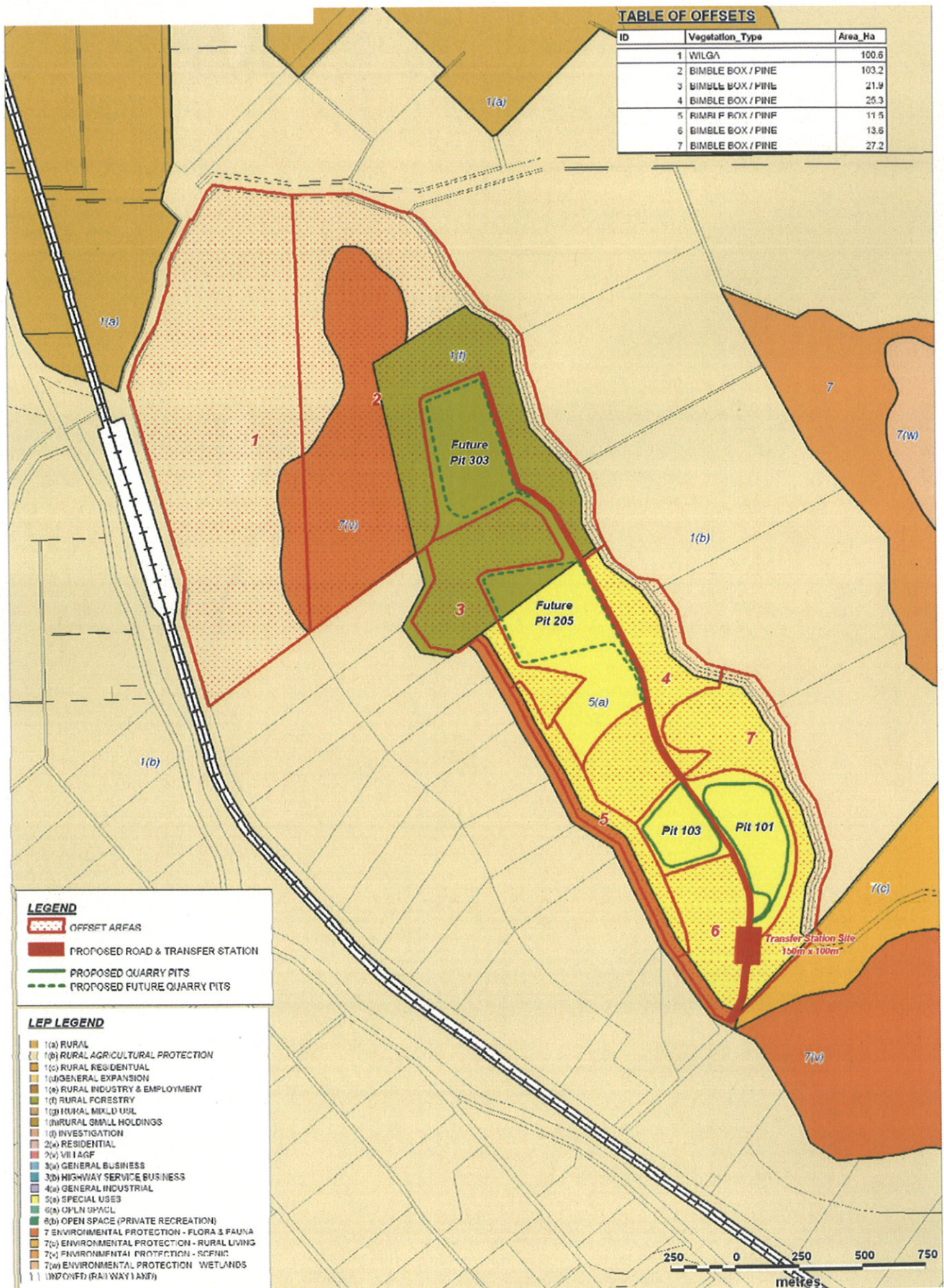
Biodiversity Offset Strategy

The Council has developed a biodiversity offset strategy to compensate for the 15.2 ha of native vegetation proposed to be cleared. Council amended the proposed offset strategy, due to the number of objections received from the owners of neighboring properties and the LPMA, regarding the use of their land for the offset strategy. Council subsequently proposed an amended offset strategy which is shown in Figures 6 and 7, and comprises the revegetation, enhancement and long term conservation of 182.5 ha of the site outside the proposed disturbance areas in Lots 201, 202 and the surrounding area, containing similar vegetation communities, equating to a ratio of 12:1.

The Council has committed to re-zoning areas in Lot 201 that are not required for the proposed and future development of the quarry operations, to E2 – Environmental Conservation. However, Council propose that approximately 20 ha of offset area No.1 would be retained as RE2 – Private Recreation, to cater for the possible relocation of the Blue Dot Speedway. Figure 6 indicates the existing zoning of the proposed biodiversity offset areas under the existing LEP. Figure 7 indicates the proposed zonings under the new draft LEP.

Council aims to develop an Environmental Management Plan for the offset lands, which would ensure that the area is secured in perpetuity and so maintained. Further, the Council is committed to developing an Environmental Strategy for the entire LGA. This will take the form of a "Green Infrastructure" Plan, which would aim to connect the offset areas and areas of natural landscapes within the LGA, with community and infrastructure developments to result in a more productive, sustainable and connected environmental strategy.

DECCW is satisfied that, subject to the implementation of the proposed biodiversity offset strategy, the project can be undertaken in a manner that would improve or maintain the biodiversity values of the locality over the medium to long term.



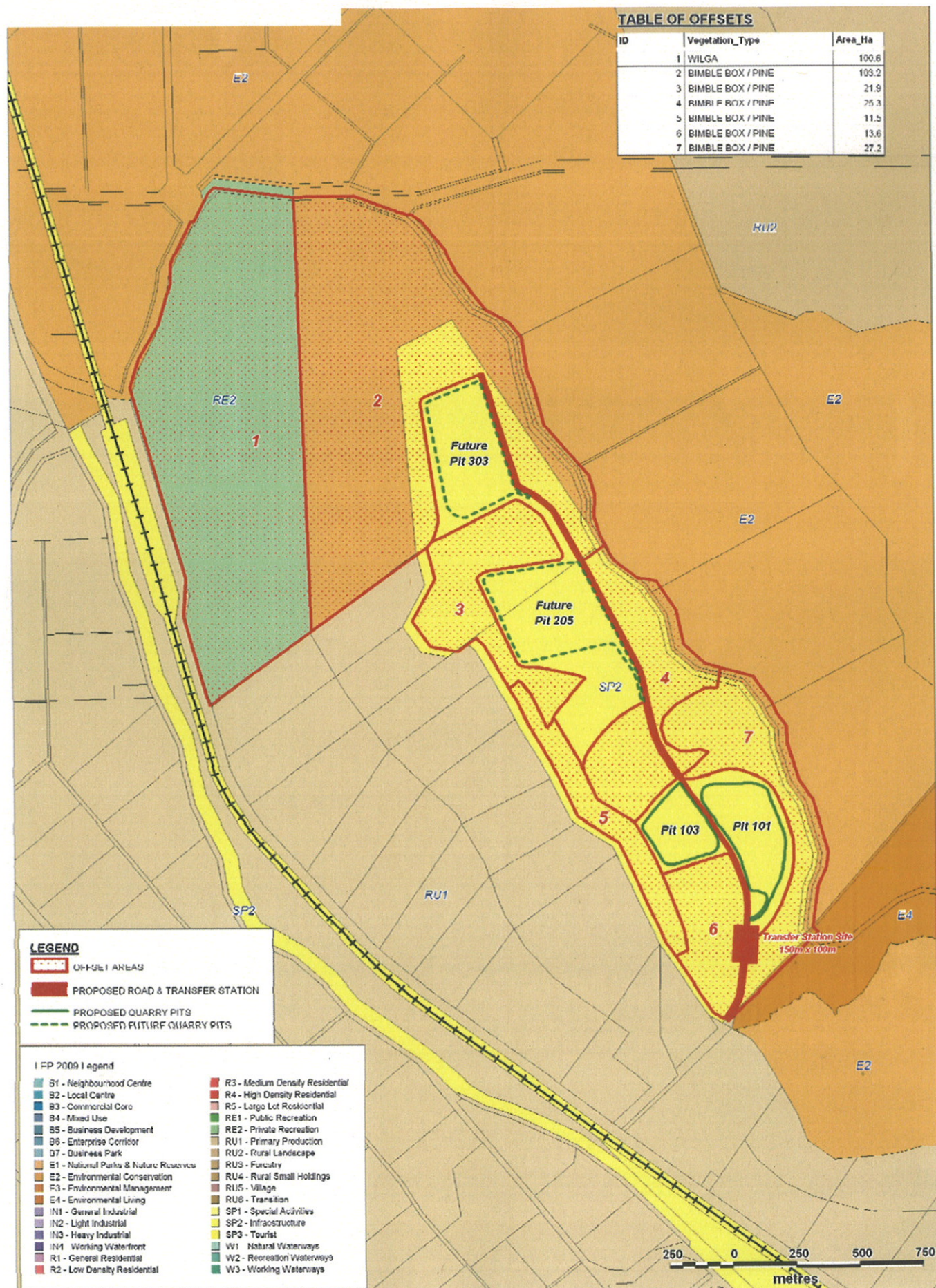


Figure 6: Possible Rezoning for Biodiversity Offset areas

The Department is satisfied that the Council has proposed an adequate area for offsetting with similar vegetation communities, however requires Council to submit evidence of the security for the offset strategy, as the RE2 zoning is not considered to be adequate in ensuring that the offset area is protected. The Department has included conditions requiring the Council to re-submit a revised biodiversity offset strategy clearly outlining the offset areas and how these would be secured in perpetuity prior to the clearance of any vegetation on site. As well as conditions requiring Council to implement, and report on progress against, the strategy.

Conclusion

The Department and DECCW are satisfied that Council has adequately assessed the potential flora and fauna impacts of the project. The assessment indicates that the project, without any offsetting measures, would result in considerable flora and fauna impacts, most notably:

- the removal of 15.2 ha of native vegetation; and
- disturbance of potential habitat for threatened fauna species.

However, the Department is further satisfied that these impacts can be mitigated and/or offset. To achieve this goal, the Department has recommended conditions requiring Council to:

- develop an offset strategy in consultation with DECCW and the Department;
- provide for the long term conservation security of the offset areas;
- develop a comprehensive Landscape and Biodiversity Management Plan, including a Rehabilitation and Biodiversity Offset Strategy Management Plan and Long Term Management Strategy; and
- lodge a substantial rehabilitation and offset bond to ensure that the rehabilitation and offset areas are established to the satisfaction of the Director-General.

Further, the Department has included a condition that no clearing would be permitted onsite until the proposed offsets are secured in perpetuity.

4.2 Justifiable Demand

Issue

Under clause 123(a) of the Infrastructure SEPP, an approval authority for any development involving the construction, operation or maintenance of a landfill is required to consider whether justifiable demand exists for the landfill.

Consideration

Although there is no restriction in airspace under the current landfill approval, the Department accepts that the existing landfill is nearing capacity, given that it would be undesirable to continue increasing the height of the landfill on the ridgeline.

Also, notwithstanding the proposed recycling operations, landfilling in Griffith LGA is predicted to increase at a rate of 1.5%-2% per year, due to increasing population in the area. The current landfill is expected to be at capacity within the next 18 months. The expansion of the landfill into the existing quarry void is needed in order to accommodate for the increased waste volumes.

However, although the existing landfill is currently licenced to receive 100,000 tonnes of waste per year, the Department considers that this yearly volume limit is not warranted in this region as the landfill currently only receives around 20,000 tpa. As a consequence, the Department recommends the approval be limited to 35,000 tpa. This would provide ample capacity to service Griffith and potentially smaller surrounding Councils in the future (should they apply).

Conclusion

The Department is satisfied that there is a justifiable demand for the proposed landfill expansion, to accommodate for the growing population.

4.3 Waste Management

Issue

In receiving mixed waste and biosolids from various sources, the potential exists for some of the waste streams to be contaminated by hazardous, clinical or industrial chemicals and waste, or by waste products containing pests and diseases.

Consideration

Council proposes to continue the current upfront screening processes to identify and remove contaminants, including waste origin identification at the site entry and manual identification and removal of chemical and hazardous materials by staff on the waste handling floor.

To ensure that the waste stream is appropriately managed, and contamination is minimised, the recommended conditions of approval require that:

- waste containing chemicals and/or pathogens (that would not be rendered harmless by the operations on site, or that may constitute a health or environmental risk) and hazardous and industrial waste, not be received at the facility;
- incoming waste loads be screened to ensure that the site does not accept prohibited wastes; and
- identified contaminated waste be separated from the general waste stream and disposed of at an appropriately licensed facility.

Conclusion

The Department considers that these recommended conditions would ensure that the quality of waste input is appropriately managed and regulated.

4.4 Resource Recovery

Issue

The project would improve resource recovery rates in the area.

Consideration

The NSW Government is committed to waste avoidance and resource recovery from all waste streams across NSW. This policy is reflected in both the *Waste Avoidance and Resource Recovery Act 2001* and the associated *Waste Avoidance & Resource Recovery Strategy 2007* (WARR Strategy). The WARR Strategy outlines a number of targets, these include:

- an increase in recycling of municipal waste from baseline 26% to 66% in 2014;
- increased recycling of commercial and industrial waste from baseline 28% to 63% in 2014; and
- increased recycling of construction and demolition waste from baseline 65% to 76% in 2014.

Currently there is limited recycling occurring onsite, however green waste is separated and used for landscaping purposes, construction waste is crushed and used for capping and landscaping, steel is separated and sold as scrap metal, and tyres are stockpiled and transferred to a tyre recycler/processor.

The proposal seeks the development of a waste transfer station (WTS), to be constructed adjacent to the entry gate of the landfill area. The WTS would allow for greater control and screening of waste and reduce the likelihood of unapproved waste streams reaching the landfill. The new WTS would also enable increased recycling options by providing a space to remove recyclables from the incoming waste stream. The proposed landfill would accept wastes which are:

- defined or classified as general solid (putrescible);
- asbestos;
- waste oil;
- lead acid batteries; and
- triple rinsed pesticide or herbicide containers conforming to DrumMaster requirements.

Green waste areas have been included in the WTS. Green waste is proposed to be chipped and used for daily cover in the active cell to promote bioremediation. Also, small amounts of green waste would be used in the site rehabilitation program. The Council also aims to introduce kerb side recycling in Griffith, which is expected to reduce the future volume of waste going to landfill by 45%, once fully operational. However, although recycling is proposed, no timeframes have been developed for implementation.

The Department also acknowledges that it may be more difficult for Councils in regional NSW to reach the WARR Strategy targets than it may be for Councils in large metropolitan areas, due to factors such as lack of economics of scale.

Notwithstanding, the Department has included conditions requiring Council to prepare a comprehensive Community Education Campaign for the project to promote increased resource recovery across the LGA, and solicit the broader communities help in reducing the volume of waste generated in the area, as well as to develop a recycling and waste minimisation strategy for the area.

4.5 Groundwater

Issue

The project has the potential to affect groundwater resources through extraction operations and contamination from the infiltration of leachate.

Consideration

There are 10 registered bores within 9 km of the quarry site, the closest being 1.5 km in distance. Groundwater recharge is generally through direct infiltration to fractures and joints in the bedrock and the irrigation of crops and pastures around the site. Hydraulic conductivity was generally found to be moderate to low, with most groundwater flow occurring through fractured rock aquifers.

Groundwater in the Griffith area is not generally used for domestic or crop purposes due to the high salinity levels. Groundwater quality on site was assessed and was found to exceed ANZECC Guidelines for concentrations of nitrate, ammonia and a number of heavy metals, however, remains within the general range of groundwater quality levels in the region. Sampling found there to be low organic activity, indicating that there are no groundwater quality impacts occurring as a result of the existing landfill operations.

Since landfill operations commenced in 1984 a series of 11 relatively shallow monitoring bores were installed along the northern boundary of Lot 202 to monitor leachate migration and contamination. Little data was collected with only infrequent groundwater flows recorded, which were mainly due to periods of heavy rain. Also, subsequent drilling programs undertaken in 1991 and 1996 also indicated a lack of groundwater in bedrock, surficial soils and colluvial deposits.

For Coffey's 2002 report a further 4 new monitoring bores were installed in Lot 202 to a depth of between 38.5m-42m. Groundwater was found in sandstone and clayey sand units, with suggested groundwater flows towards the east, discharging at Tharbogang Swamp. As part of the current groundwater assessment Coffey Geotechnics established an additional 3 bores and utilized 5 existing boreholes in the north eastern section of Lot 202 (see Figure 5.6). Groundwater was encountered in 6 of the 8 new and existing bores across Lots 201 and 202, ranging from 14.4m-27.5m below the surface.

The investigation found that groundwater flow is generally to the north and northwest. However, a lack of data limits the certainty of the assessment, which also contradicts the flow direction predicted in other investigations. Coffey Geotechnics recommend further monitoring to clarify groundwater flows.

No groundwater dependent ecosystems (GDEs) have been identified in the vicinity of the site. The site lies approximately 135-145m above ground level and is therefore unlikely to intercept groundwater sources to the east of the site. Due to this, it is unlikely that any impacts would occur to GDEs in the surrounding area.

The existing landfill cell is not lined. Water flows are diverted to a leachate detention basin, from there leachate is pumped back through the layers of waste. The system is not closed and during periods of prolonged heavy rainfall, there is the potential for leachate to infiltrate into the groundwater. However, as mentioned heavy prolonged rainfall is rare in the region.

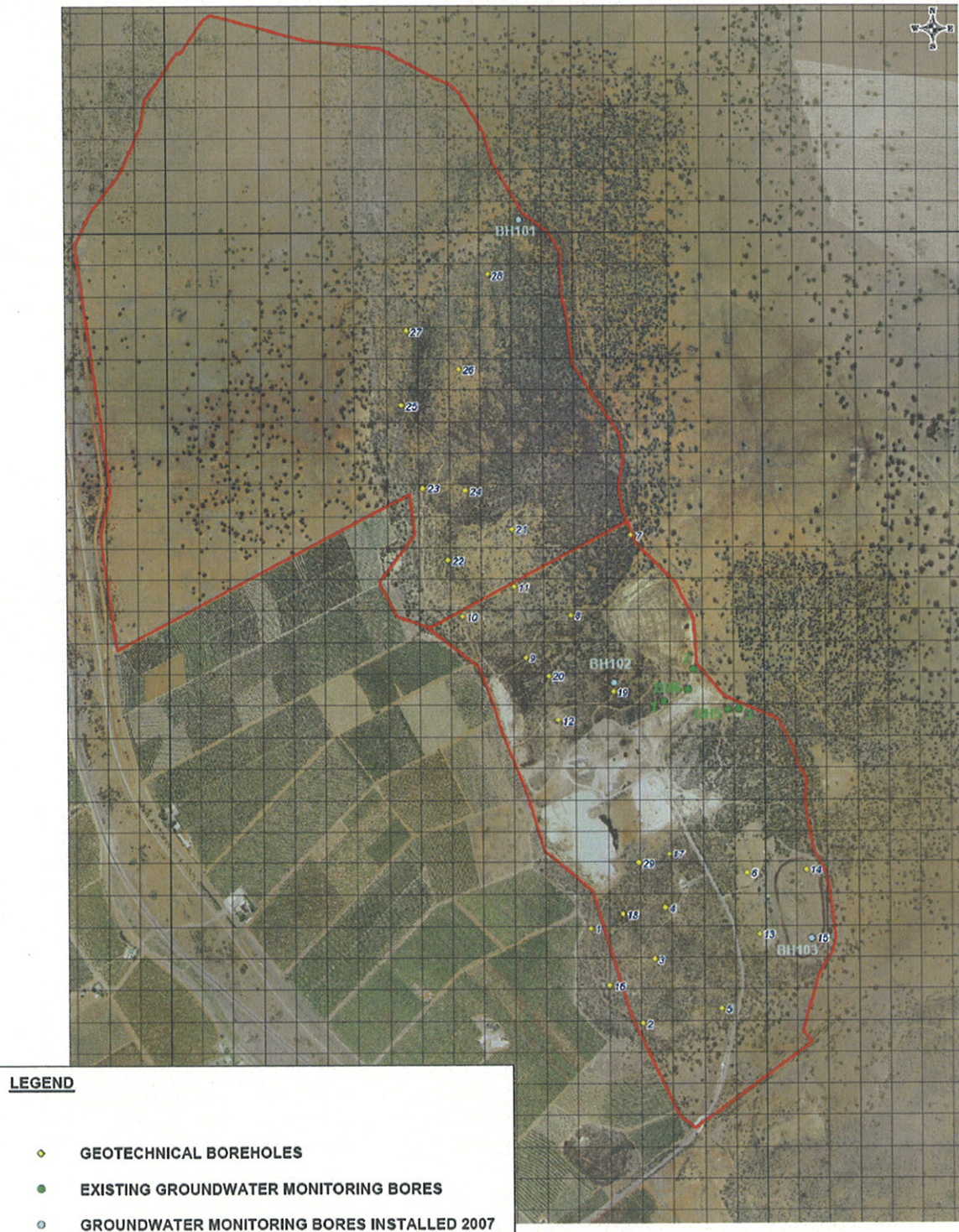


Figure 4: Groundwater Monitoring Bores

One public submission raised concerns regarding surface and groundwater resources and indicating past leachate contamination to the neighbouring property to the east of the site. Council responded that one event of contamination had occurred approximately ten years ago, following an outbreak of bird flu in the area. Studies were undertaken, resulting in modifications to the landfill and animal pit to ensure no further contamination would occur.

NOW did not object to the development, but recommended a number of conditions regarding groundwater management, including the requirement for Council to establish at least 2 monitoring bores on the western side of the ridgeline, in order to provide data on groundwater levels, quality and flow direction prior to development occurring onsite. NOW has also recommended the preparation of surface and groundwater management plans to be developed for the proposed quarry and landfill.

Council has committed to the installation of the additional monitoring bores and implementing a groundwater monitoring and protection plan. Council has acknowledged the lack of uncertainty in the groundwater assessment and proposed to design the landfill so as to minimise any potential risk of contamination to groundwater resources. This would include the use of fully lined cells complete with cell drainage and leachate collection systems to isolate the landfill material from underlying soils.

Conclusion

The Department is satisfied that although Council has not precisely determined groundwater flows and levels for parts of the site, based on the assessment, the project is unlikely to have a significant impact on groundwater resources.

Notwithstanding, the Department believes that Council should be required to establish and implement a comprehensive Soil, Water and Leachate Management Plan, in consultation with NOW and DECCW, including a groundwater monitoring program, which provides for continuous monitoring of groundwater levels and quality on site throughout the life of the project. With the implementation of comprehensive monitoring, the Department believes that any potential impacts to groundwater resources can be detected and easily managed, such that water quality is not adversely affected and that groundwater flows are not impacted in the long term.

Further, the Department has included conditions requiring improved practices in the separation of stormwater and leachate onsite, thereby reducing the potential for groundwater contamination to occur.

4.6 Traffic

Issue

The development could increase the road safety risks on Hillside Drive, Access Road and Kidman Way.

Consideration

The site is accessed via Hillside Drive, a sealed 'No Through Road'. This connects the quarry and landfill to the main highway (Kidman Way), via Access Road which runs between Kidman Way and Slopes Road (see Figure 7).

Kidman Way, an arterial road with two lanes and a local speed limit of 100 km/hour, provides access to Griffith in the south and regional centers in the northwest. The project is based on all trucks entering and exiting the site via Hillside Drive and then turning either left or right onto Kidman Way from Access Road.

Current daily traffic levels for the site (in and out) have been assessed as 200 per day, based on the traffic survey conducted in December 2007. This includes 10 car movements, 84 light vehicle movements, 46 quarry heavy vehicle movements and 60 landfill heavy vehicle movements. Currently there are 8 quarry related truck movements and 8 landfill related truck movements during both the morning and evening peak hours.

Predicted traffic movements for the project (based on a worst case scenario product dispatch of up to 300,000 tpa) are shown in Table 3.

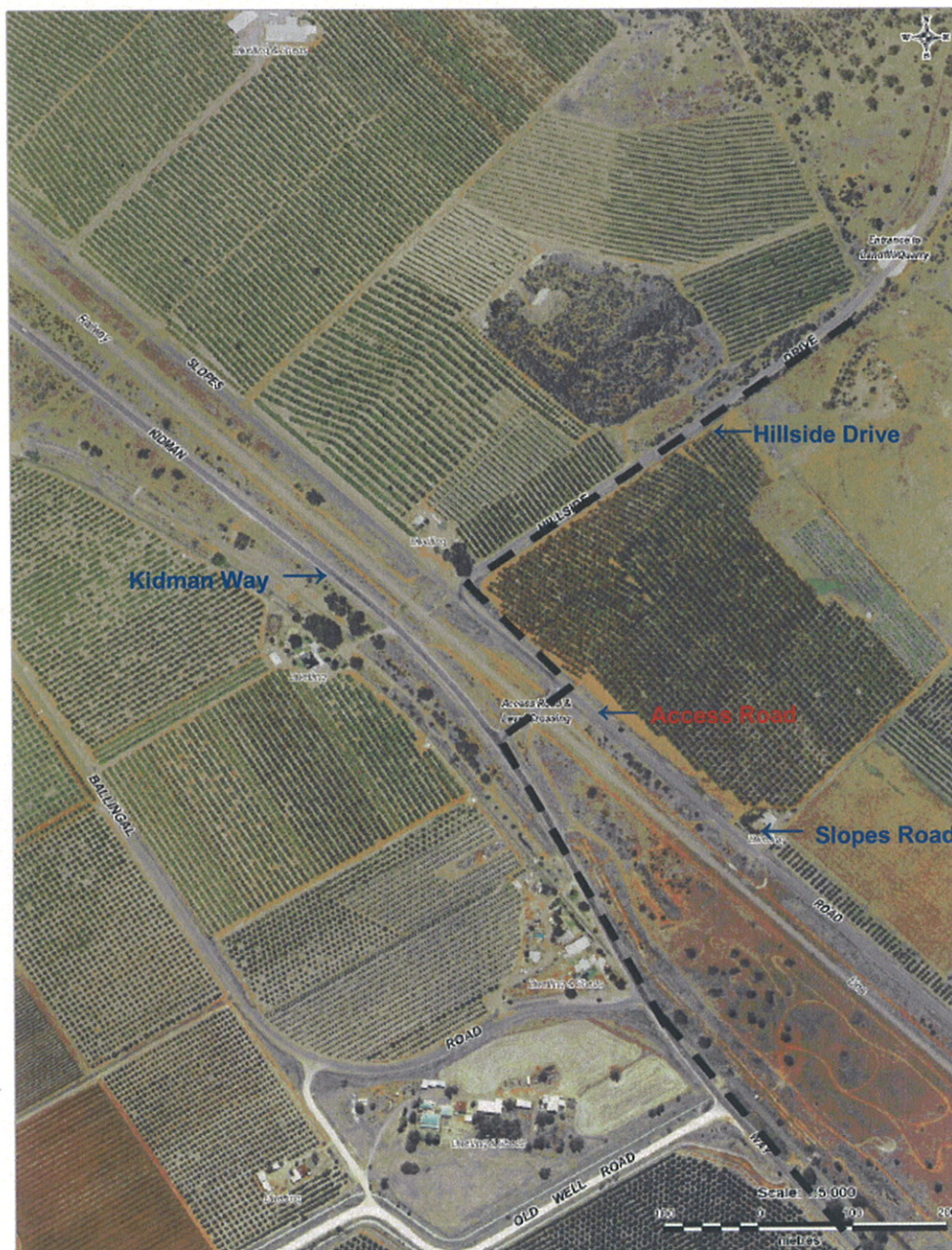


Figure 7: Quarry/ Landfill Access Route

Table 3: Predicted Project-Related Traffic Movements

	Daily	AM Peak	PM Peak
Cars	10	5	5
Light Rigid Trucks (2 axle)	84	8	8
Heavy Rigid Trucks (3+ axles)	146	19	19
Heavy Articulated Trucks	60	8	8
TOTALS	300	40	40

Table 4 shows current and projected project-related total traffic levels for Kidman Way. Traffic generated by the quarry and landfill are expected to be distributed along the external road network with 95% approaching/departing the site along Kidman Way to the south, while the remaining 5% would be approaching/departing the site to the north. When compared with existing traffic movements, Table 4 indicates that, at full production, the project would increase vehicle movements by 100 per day, approximately a 9% increase on current traffic levels for Kidman Way. This amount is unlikely to result in any significant traffic-related impacts on the Kidman Way. The RTA does not object to the proposal subject to the preparation of a Transport Management Plan, which would outline measures to manage traffic related issues arising from the landfill and quarry operations; and

include a review of the standard of the access roads to the site; and procedures for managing traffic related dust emissions and rubbish from vehicles accessing the landfill.

Table 4: Projected Traffic Increases on Kidman Way

Year	Estimated traffic Level (vehicles per day)	Total Quarry/Landfill Traffic Movements			Increase
		Existing	Proposed (yr 25+)	Additional	
2008	1094	200	300	100	9%

Site Access

The traffic assessment found that the intersection of Slopes Road and Access Road should be constructed to industrial standard to accommodate the existing and proposed heavy vehicle movements to and from Kidman Way.

In the submission received from the RTA it states that although the intersection of Access Way and Kidman Way has recently been upgraded it does not meet the standard's required by the RTA's Road Design Guide for the prevailing speed limit. It is proposed that the increase in traffic generated by the development would warrant works to upgrade the current intersection and surrounding road reserve, particularly the removal of current obstacles to provide the required clear zone. The RTA has recommended conditions including upgrades to the Auxiliary Right Turn treatment at the intersection of Access Road and Kidman Way, in accordance with the RTA guidelines.

Conclusion

The Department is satisfied that the concerns of the RTA regarding the site access intersection are able to be resolved as part of the intersection upgrade. In this regard, the Department has recommended a condition requiring the site access intersection to be designed and constructed to the satisfaction of the RTA. The Department is satisfied that the project can be managed such that it would not result in any significant traffic related impacts.

4.7 Noise and Vibration

Issue

The development has the potential to increase noise and vibration impacts in the area through landfill and quarry operations as well as blasting and traffic movements to and from the site.

Consideration

The EA includes a noise impact assessment undertaken by specialist acoustics consultants Noise and Sound Services in accordance with applicable contemporary guidelines including the *NSW Industrial Noise Policy* (INP). The assessment was undertaken with reference to sensitive receivers in the vicinity of the project site (see Figure 8).

Operational Noise

The INP advises that project specific noise levels (PSNLs) for projects such as Tharbogang Quarry and Landfill should generally be derived by adding 5 dB(A) to the background noise measurement. The noise assessment presents background noise levels that trigger the INP default of 30 dB(A). The PSNL is based on the default 30dB(A) background noise level plus 5 dB(A), to equal 35 dB(A) at all residents.

The noise impact assessment accounts for the noise attenuation barriers as a result of the ridgeline, which plays a significant role in deflecting noise impacts to the west. The assessment indicates that the project would comply with all appropriate noise criteria at all sensitive receivers.

A submission was received with regard to the validity of the noise assessment undertaken for the initial proposal. Council commissioned a second noise assessment, which confirmed the level of attenuation achieved due to the ridgeline and that properties to the west of the development are unlikely to experience any noise related impact as a result of the proposal.

Traffic Noise

Additional truck movements on public roads to and from the site are likely to increase traffic noise, particularly on Hillside Drive and Kidman Highway. The Council has adopted the NSW Environmental Criteria for Road Traffic Noise (ECRTN) noise level criteria of 55dB (local roads) for Hillside Drive and 60dB (arterial roads) for Kidman Way.

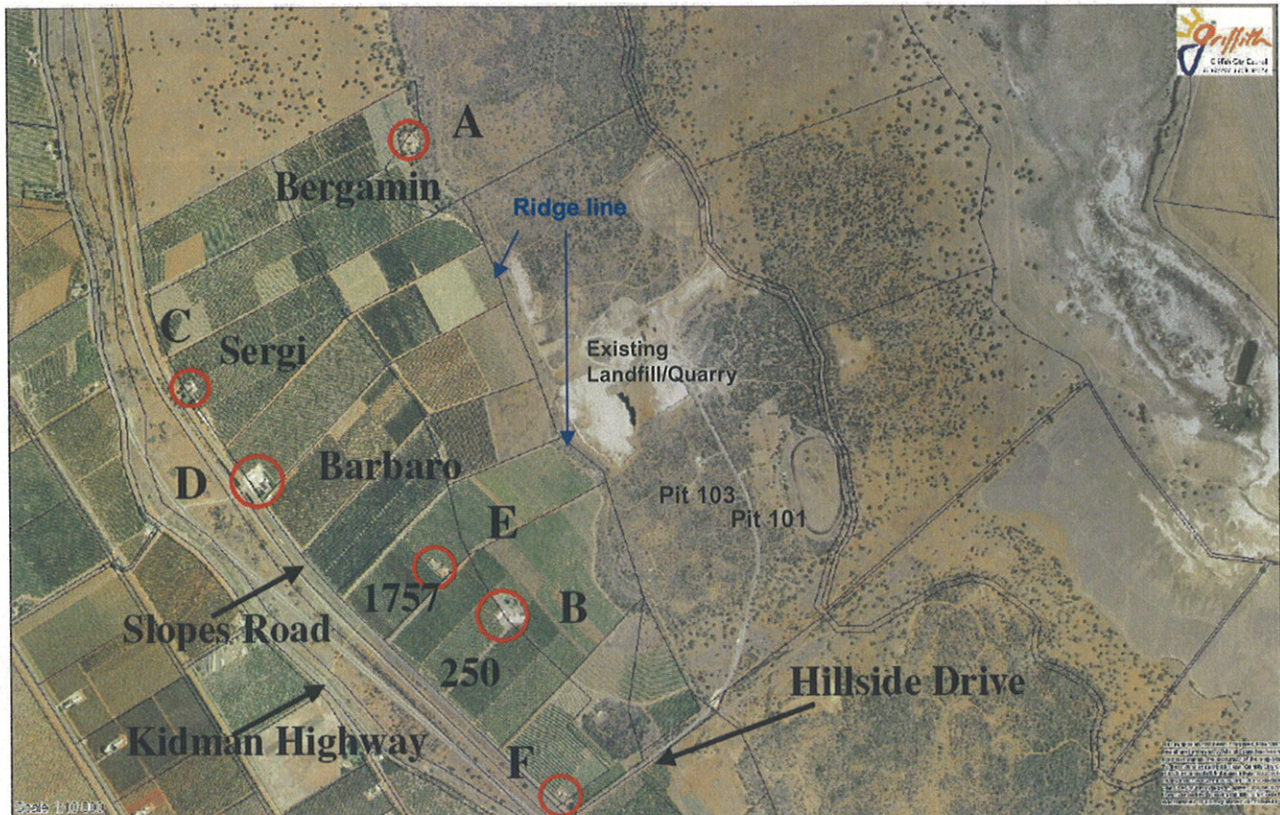


Figure 8: Noise and Blasting Survey and Receptor Locations (Sensitive Receivers)

The noise assessment found that due to the increase of up to 100 heavy vehicles on Kidman Highway the predicted noise level is approximately 54 dB(A), this is below the ECRTN criterion of 60 dB and is considered to have a negligible impact on noise levels at surrounding residents.

However, worst case predicted noise levels at the single dwelling on Hillside Drive indicate a minor exceedance of 2db - 4db of the 55 dB(A) criteria. The Council has outlined a number of mitigation measures that would be undertaken in order to reduce any traffic noise related impacts at this location, including an upgrade to building elements facing Hillside Drive to reduce the internal noise levels, if exceedances occur.

However, the Industrial Noise Policy contains a clause that states:

Ways of identifying 'principal haulage routes' and managing associated adverse impacts have not yet been fully defined. Where local authorities identify a 'principal haulage route', the noise criteria for the route should match those for collector roads, recognising the intent that they carry a different level and mix of traffic to local roads.

Therefore, although the Council has adopted the local road criteria for Hillside Drive, it does have the option to categorise this road as a 'principle haulage route'. This would allow a daytime noise level of 60dB(A)_{Leq(15 mins)}, which would accommodate for the predicted 4 dB(A) exceedance.

Notwithstanding, the Department recommends that should noise levels exceed the criteria, Council would be required to implement noise mitigation measures for the property at Hillside Drive, if the property owner/occupier requests it.

The Department and DECCW are generally satisfied that Council has assessed the potential noise impacts of the project in accordance with relevant DECCW guidelines, and considered reasonable and feasible noise mitigation measures.

However, the Department has recommended a range of conditions to minimise, monitor, manage and/or compensate for the noise impacts of the project, including requirements to:

- comply with stringent noise criteria, and strive to continually improve noise performance;
- comply with strict hours of operation;
- establish and implement a comprehensive noise monitoring program, which includes real-time monitoring of noise impacts; and
- regularly and effectively communicate with surrounding landowners concerning quarry and landfill operations, and effectively respond to enquiries and complaints.

Airblast and Vibration

A blast impact assessment undertaken by Noise and Sound Services was included in the EA. The assessment was undertaken with reference to blast criteria listed in the ANZECC guidelines for the minimisation of annoyance due to blasting overpressure and ground vibration (see Table 5).

Table 5: Blasting Guideline Limits

	Acceptable*	Maximum
Airblast (dBL_{linear})	115	120
Ground Vibration (mm/s)	5	10

*Acceptable blasting limits must be achieved at least 95% of the time.

Table 6: Predicted Blasting Impacts, MIC of 270 kg

Residence/Receiver	Distance from Blasting	Peak Particle Velocity (PPV)	Peak Airblast
Residence A	1360m - northwest	1.1 mm/s	125 dBL _{linear}
Residence B	600m - southwest	3.9 mm/s	130 dBL _{linear}
Residence C	1490m - west	1.0 mm/s	124 dBL _{linear}
Residence D	1280m - west	1.2 mm/s	125 dBL _{linear}
Residence E	730m - southwest	2.9 mm/s	129 dBL _{linear}
Residence F	1020 - south	1.7 mm/s	127 dBL _{linear}

Table 6 indicates that the vibration goal of 5mm/s would be met at all residences. However, peak airblast criteria would be exceeded at all residential locations when using a maximum instantaneous charge (MIC) of 270 kg. Consequently, Council recalculated the MIC in order to achieve the appropriate criteria at most locations (see Table 7).

Table 7: Predicted Quarry Blasting overpressure with 50kg charge weight

Residence/Receiver	Distance from Blasting	Peak Airblast
Residence A	1360m - northwest	113 dBL _{linear}
Residence B	600m - southwest	119 dBL _{linear}
Residence C	1490m - west	112 dBL _{linear}
Residence D	1280m - west	114 dBL _{linear}
Residence E	730m - southwest	117 dBL _{linear}
Residence F	1020 - south	115 dBL _{linear}

Council calculated that the peak airblast criteria could be met by reducing the MIC to 50 kg, at all locations except Residence B and E, which still remain above the 115dBL_{linear} criteria for 95% of all blasts. The Council has committed that for the nearest residential property at 600m distant, charge weights of explosives would be reduced to 30kg to ensure that criteria is met. Council proposes that this lowered MIC level would be achieved through modifications of blasting and extraction procedures, including the use of an alternate drilling pattern.

The Department is satisfied that the proposal could be conducted in accordance with applicable blast impact criteria. However, the Department considers that Council should be required to:

- comply with the relevant airblast and vibration criteria at all affected nearby sensitive receivers;

- substantiate blast design and compliance in Blast Management Plans prior to commencement of each quarrying stage, based on actual blast monitoring data from its quarrying operations, to ensure blasting limits are satisfied;
- implement all proposed mitigation measures detailed in the EA;
- monitor all blasting activities;
- regularly and effectively communicate with surrounding landowners concerning blasting activities, and effectively respond to enquiries and complaints; and
- mitigate, remediate or compensate for any project-related blasting impacts on property, or the use of property.

Conclusion

Based on this assessment, the Department is satisfied that subject to the appropriate conditions, the project can be managed such that it would not have a significant noise or vibration impacts on nearby residences.

4.8 Air Quality

Issue

The development has the potential to generate increased levels of dust and odour in the area.

Consideration

Dust

The EA includes an air quality impact assessment undertaken by Coffey Geotechnics (Coffey). The assessment included consideration of dust deposition levels with reference to relevant monthly air quality goals at the monitoring locations shown in Figure 8 below.

The assessment was based on a number of mitigation measures being implemented, including:

- water sprays on processing equipment and unpaved sections of the site;
- the cessation of operations on site during adverse weather conditions;
- the installation of a wheel wash at the site access;
- minimising the area of disturbance to only that necessary for quarrying operations; and
- commencing rehabilitation as soon as possible once an area is no longer required for extraction.

A submission received from a neighbouring resident raised concerns regarding an increase in production levels at both the landfill and proposed quarry pits, potentially resulting in an increase in air quality impacts. The EA indicates that the quarry would comply with applicable dust criteria during all stages of the project, so long as the further mitigation measures listed above are implemented, in addition to current dust management measures.

The below table presents dust levels recorded at surrounding receivers during current land filling and quarry operations. Due to the low level of dust currently generated on site, by existing quarry and landfill operations, it is considered unlikely that future developments on site would raise dust levels to above the criteria of 4g/m²/month, particularly with additional dust management practices in place.

Table 8: Current Dust Deposition Levels

Total Insoluble Matter (g/m ² /month)				
26/07/2007	TA1	TA2	TA3	TA4
	2.5	1.4	1.2	3.4

DECCW did not raise concerns regarding dust levels on site, however did recommend a number of conditions requiring the Council to operate water sprays on the quarry crusher at all time and cease quarry operations during periods of high wind. As well as, the development of a Dust Management Plan produced in consultation with DECCW, prior to the commencement of new quarrying operations on site.

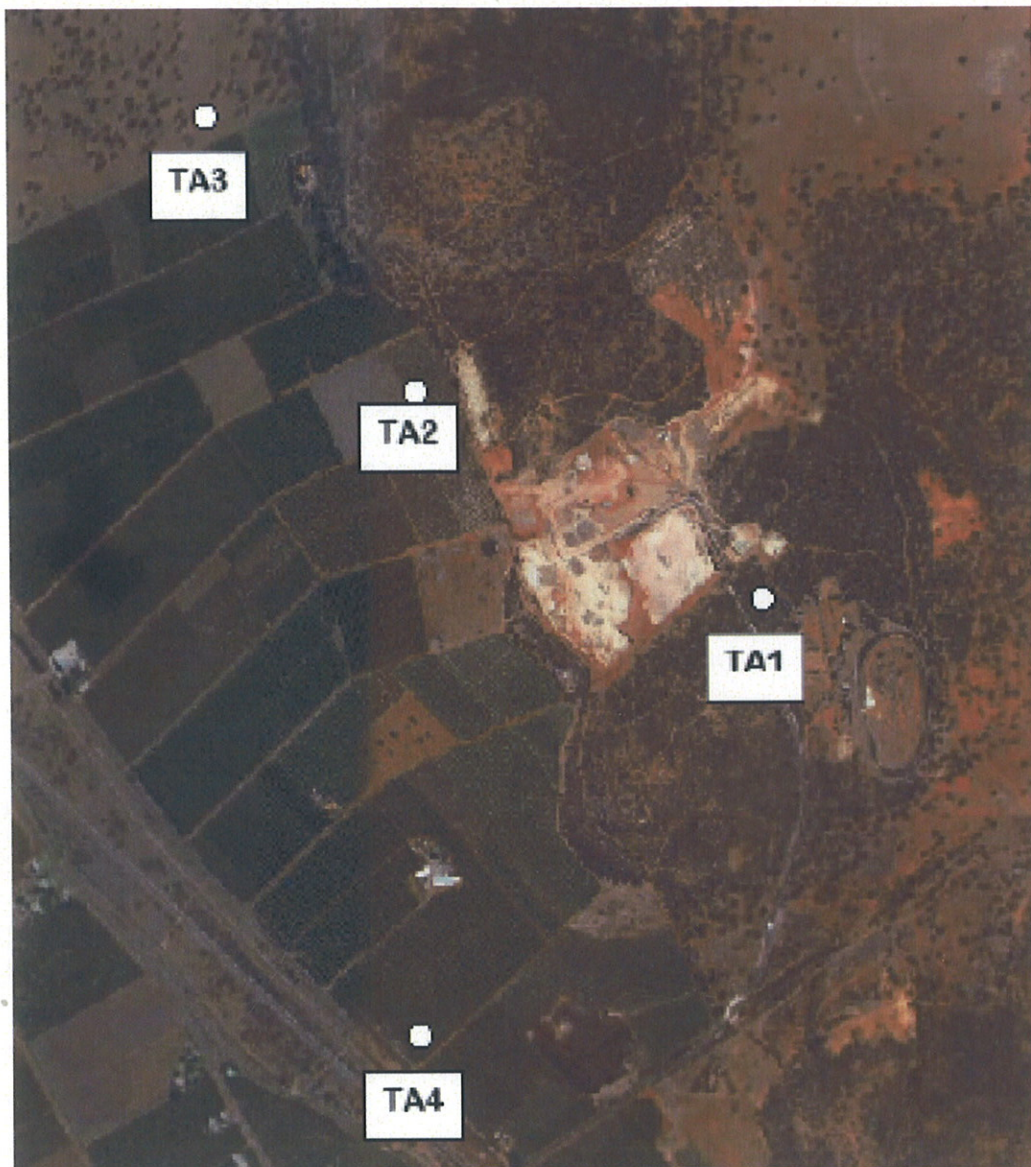


Figure 9: Dust Monitoring Locations

Odour

The EA contains a specialist odour impact assessment undertaken by The Odour Unit Pty Ltd (TOU) for the landfill expansion.

Odour emission modelling includes continuing and the proposed landfill activities. The sources sampled included the active tip face; batter with fill cover; batter with fill and shredded green waste cover; top level capped; the greenwaste stockpile; and the animal pit. The leachate pond was dry at the time of assessment and not sampled and the daily cover (Enviro mesh) was damaged and therefore, also not sampled.

Based on population density the DECCW odour performance criteria (OPC) for the proposed development is determined to be 6 odour units (ground level concentration). Figure 10, presents odour modelling for the proposed landfill site, using the worst case scenario, which includes all possible odour sources assessed. Modelling indicates that the 6 odour unit contour predominately extends north and south of the development and that even when using a highly conservative modelling approach the DECCW OPC would be met at all surrounding sensitive receivers.

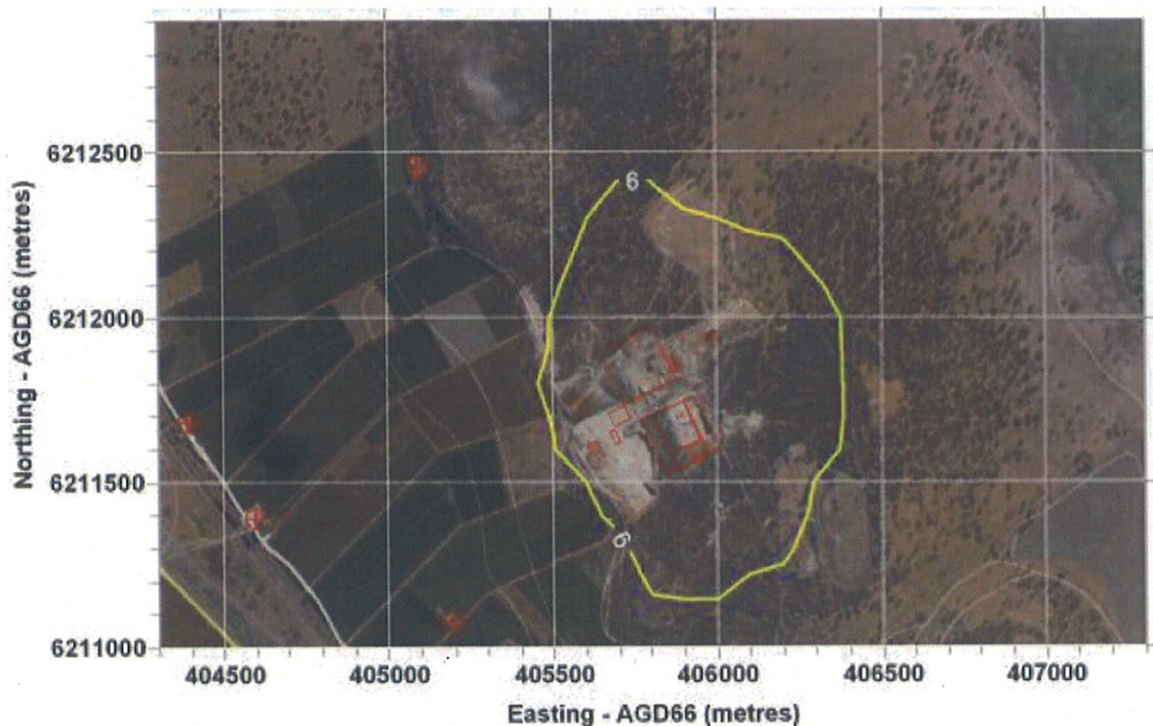


Figure 10: Modelling Scenario 2b – All Area Sources

The Department recommends that Council be required to ensure that the project does not result in offensive odours and to commission an independent team of experts, including an odour expert, to audit the environmental performance of the project within 12 months of the commencement of operations into the extended landfill area, and every 3 years thereafter. This audit would ensure that:

1. an appropriate level of odour performance is being achieved,
2. the facilities are operating in accordance with best management practices; and
3. the project is complying with the conditions of approval to the satisfaction of the Director-General and DECCW.

The Department is satisfied that these recommended measures would provide greater certainty with the potential level of odour impact from the proposal and measures to address any odour concerns.

Greenhouse Gas Emissions

The project would result in direct and indirect greenhouse gas (GHG) emissions. The EA includes brief GHG assessments to estimate direct production of GHG emissions from waste streams and transportation of quarry products and waste to and from the site.

The assessment indicates worst case scenario total annual greenhouse emissions at year 25 of the development would be approximately 35,861 tCO₂^{-E} (or 1.11 tCO₂^{-E} per tonne of municipal solid waste and 1.66 tCO₂^{-E} per tonne of commercial and industrial waste). This does not take into consideration the recent kerb side recycling program commenced in Griffith which is expected to reduce future municipal waste volumes going to landfill by up to 45%.

The Council propose to harvest and flare all landfill gas generated, in order to minimise greenhouse gas emissions into the atmosphere. Also, the active tip face would be covered daily with green waste to improve the bio-reaction process. The final landfill cap would be an impermeable layer and flaring is proposed to continue for a period after landfill closure.

Also, an increase in the number of heavy vehicles from 200vtpd to 300vtpd over the 25 year project, would result in the increase of transport related emissions of 1290kg of CO₂^{-E} emitted per day.

The Department considers, that best practice techniques to minimise GHG emissions should be implemented at the facility and considered that GHG emissions for electricity generation be investigated further. The recommended conditions of approval therefore require that the land filling

process be designed and implemented to minimise GHG emissions, and that Council investigate options to utilise greenhouse gas for electricity generation.

Conclusion

DECCW and the Department are generally satisfied that Council has assessed the potential air quality impacts of the quarry and landfill in accordance with relevant DECCW guidelines, and appropriately considered reasonable and feasible mitigation measures, so as to ensure that the project is unlikely to result in any significant dust or odour related impacts. The assessment predicts that the cumulative dust emissions of the proposed development together with background dust emissions would comply with established air quality criteria during all stages of the quarry and landfill operations. The Department has recommended conditions requiring Council to:

- comply with applicable incremental and cumulative dust and odour criteria, and strive to continually improve the air quality performance of the project;
- establish a detailed air quality monitoring program, including if necessary monitoring at nearby residences and surrounding sites; and
- regularly and effectively communicate with surrounding landowners concerning quarry operations, and effectively respond to enquiries and complaints.

4.9 Other Issues

The Department is satisfied that the remaining issues can be mitigated and/or managed to ensure an acceptable level of environmental performance, and suitably regulated through the imposition of appropriate conditions of approval (see Table 9 below).

Table 9: Other Issues for Consideration

Issue	Consideration	Recommended Conditions
Surface Water	• A number of additional stormwater management structures have been proposed surrounding the landfill. • Due to low yearly rainfall, high evaporation levels and high permeability of the surface soils at the site, there would be limited environmental impacts to surface water flows and quality on site • No water is to be discharged from the site.	Recommended conditions require Council to: • collect all leachate generated by the project for reuse in the facility; and • implement a soil, water and leachate management plan to minimise water use and prevent surface water contamination, including appropriate mitigation measures and a surface water monitoring strategy to be undertaken throughout the life of the project.
Site Water Balance	• Water balance modelling indicates that the project would increase site water usage, with demand mainly for the processing of quarry products, rehabilitation and dust suppression. • The Council proposes to meet water demand by importing water via the 100mm diameter potable water supply line to the site. This would be supplemented by water captured in the settlement dam, after periods of heavy rainfall. • The Department and DECCW are satisfied that water use associated with the project is unlikely to have a significant impact on water availability.	Recommended conditions require Council to: • implement a soil, water and leachate management plan to minimise water usage onsite.
Heritage	• The project would not impact on any Aboriginal heritage items. • The Non-Aboriginal heritage assessment recommended that the speedway signs are carefully removed prior to development and handed over to the car racing club for safe-keeping, reuse or for negotiating as a display item with Griffith Pioneer Park Museum.	Recommended conditions require Council to: • protect identified artefacts and scarred trees, as recommended in the heritage assessment; and • prepare a Conservation Management Plan to provide for the protection of Aboriginal and Non-Aboriginal heritage values on the site.

Rehabilitation and Final Landform	- The final landform would form a part of McPhersons Range and would be contiguous with the vegetation and wildlife corridor existing along the range. - The existing and proposed landfill would be capped and revegetated in such a way that it would be compatible with the surrounding landscape, while still remaining isolated from adjacent bedrock, soils and water onsite. - Unlike the rehabilitated quarry pits, the landfill site would require long term monitoring and maintenance in order to avoid any possible contamination.	Recommended conditions require Council to: prepare a Landscape and Biodiversity Management Plan, in consultation with DECCW, which outlines performance monitoring and completion criteria designed to demonstrate how the rehabilitation outcomes identified in the EA can be met.
Visual	Some visual impacts may occur from quarrying and landfill operations onsite, however mitigation measures such as landscaping and rehabilitation of the site would soften any visual impacts.	Recommended conditions require Council to: - submit detailed plans of the proposed landscaping; and - rehabilitate the site in accordance with the proposed final landform depicted in the EA.

5. RECOMMENDED CONDITIONS

The Department has prepared recommended conditions of approval for the project (see Appendix B), and summarised these conditions in Appendix A. These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the project;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

The Department has included standard conditions requiring Council to:

- ensure that all monitoring results are made publicly available at the site and on Council's website;
- report all incidents; and
- prepare and implement a comprehensive Environmental Management Strategy, which includes procedures to:
 - keep the community informed about the project;
 - manage complaints;
 - resolve disputes; and
 - respond to any non-compliances.

Council has reviewed and accepts the recommended conditions.

6. CONCLUSION

The Department has assessed the project application, EA, submissions on the project and Council's response to these submissions, in accordance with the relevant statutory requirements. The Department recognises that the site has been identified as having a good resource of road base materials, and the Department acknowledges that there is a need to continue extraction of this resource to meet the needs of construction industries in the Griffith region; and that extending the landfill is warranted to both achieve improved environmental performance and accommodate for an increase in population to the Griffith LGA.

In addition, the Department believes that through the implementation of recommended conditions, the development would result in an improved level of environmental performance and waste management for the site. The Department is satisfied that the impacts of the project are able to be minimised, managed, offset and/or compensated to ensure an acceptable level of environmental performance.

The Department considers that, on balance, the project's benefits sufficiently outweigh its residual costs, and that it is therefore in the public interest. Consequently, the Department recommends that the Tharbogang Quarry and Landfill project be approved, subject to strict conditions of approval.

7. RECOMMENDATION

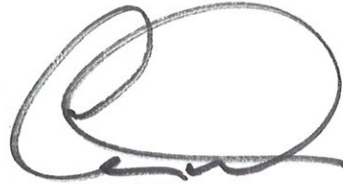
It is RECOMMENDED that the Deputy Director-General, as delegate for the Minister:

- consider the findings and recommendations of this report;
- approve the project application, subject to conditions, under section 75J of the *Environmental Planning and Assessment Act 1979*; and
- sign the attached project approval (see Appendix B).



Chris Ritchie
Manager, Industry
Mining & Industry Projects

8/7/10.



Chris Wilson
Executive Director
Major Projects Assessment

8.7.10



Marcus Ray
A/Deputy Director-General DASP

08/07/10

APPENDIX A – SUMMARY OF CONDITIONS OF APPROVAL

Aspect	Condition	Requirement
Schedule 2: Administrative Conditions		
Obligation to Minimise Harm	1	The Proponent shall work to prevent harm occurring to the environment.
Terms of Approval	2-6	The Proponent shall carry out the development in accordance with the EA and the conditions of approval; and surrender all existing approvals concerning operations at the site.
Limits on Approval	7-8	Limit extraction of gravel material to 315,000 tpa and limit the receipt of waste to 35,000tpa for a period of 25 years.
Schedule 3: Specific Environmental Conditions		
Waste	1-14	Waste management requirements and landfill criteria, litter control, vermin and weed management and landfill Environmental Management Plan.
Soil, Water and Leachate Management	15-27	Discharge limits; leachate management criteria and landfill cell construction; stormwater, groundwater management and monitoring; and erosion and sediment control.
Meteorological Monitoring	28	The Proponent shall construct a meteorological monitoring station onsite.
Noise and Vibration	29-41	Noise impact assessment criteria, hours of operation and monitoring. Blasting criteria, frequency, property inspections and monitoring.
Air Quality	42-44	Air quality impact assessment criteria and monitoring.
Rehabilitation and Landscape Management	45-50	Landscape and Biodiversity Management Plan and Rehabilitation and Biodiversity Offset Strategy.
	51-52	Rehabilitation bond.
Heritage	53	Cultural Heritage Management Plan.
Traffic and Transport	54-58	Requirements to construct site access intersection to the satisfaction of the RTA and Council, and ensure all haulage vehicles are covered.
Emergency and Hazards Management	59-60	Ensure public safety and bushfire management.
Production Data	61	Provide annual production data to DII.
Schedule 4: Additional Procedures	1	Notification of landowners.
	2-4	Independent review.
Schedule 5: Environmental Management and Monitoring	1	Environmental Management Strategy/ Environmental Management Program.
	2-4	Requirement to report incidents, annual reporting.
	5	Requirement to undertake regular independent environmental audits.
	8-9	Requirement to publicly report environmental management plans/programs/strategies, and monitoring results.
	10	Community waste education program

APPENDIX B – CONDITIONS OF APPROVAL

APPENDIX C – CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

Griffith Local Environmental Plan 2002

The land subject to the application is currently zoned 5(a) - Special Uses (Quarry and Waste Depot). Under the Griffith Local Environmental Plan (LEP) 2002, extractive industries and landfill operations are permissible in this zone.

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP)

Part 3 of the Mining SEPP lists a number of matters that a consent authority must consider before determining an application for consent for development for the purposes of extractive industries, including:

- compatibility with other land uses;
- natural resource management and environmental management;
- resource recovery;
- transport; and
- rehabilitation.

The Department has considered these matters in its assessment report. Based on this assessment, the Department is satisfied that the project is able to be managed in a manner that is generally consistent with the aims, objectives and provisions of the Mining SEPP.

State Environmental Planning Policy (Infrastructure) 2007

In accordance with clause 104 of the Infrastructure SEPP (and equivalent provisions of the now repealed *SEPP 11 Traffic Generating Developments*), the application was referred to the RTA. Issues raised by the RTA and related traffic impacts are discussed in section 4.3.

State Environmental Planning Policy No. 33 - Hazardous and Offensive Development (SEPP 33)

SEPP 33 aims to identify proposals with the potential for significant offsite impacts, in terms of risk and/ or offence (odour, noise etc) to people, property or the environment. The Department is satisfied that the project is not potentially hazardous or offensive, and that the proposal is generally consistent with the aims, objectives, and requirements of SEPP 33.

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)

SEPP 55 aims to ensure that potential contamination issues are considered in the determination of a development application. Clause 7 of SEPP 55 states that:

- 7(1) A consent authority must not consent to the carrying out of any development on land unless:
- (a) it has considered whether the land is contaminated, and
 - (b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and
 - (c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

The Department is satisfied that existing land contamination is not a significant issue for the site.

APPENDIX D – PROPONENT’S RESPONSES TO SUBMISSIONS

APPENDIX E – SUBMISSIONS

APPENDIX F – ENVIRONMENTAL ASSESSMENT
