NSW GOVERNMENT | Planning

# *MAJOR PROJECT ASSESSMENT*
## Eastern Creek Waste Project

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

October 2009

Cover photo: Aerial view of the proposed Eastern Creek Waste and Recycling Facility



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# EXECUTIVE SUMMARY

ThaQuarry Pty Ltd and ACN 114 843 453 (ThaQuarry) propose to construct and operate a resource recovery and non-putrescible landfill facility at the former Pioneer Quarry site, Eastern Creek in the Blacktown local government area. The landfill component of the project will utilise the existing quarry void, with the materials processing centre and associated infrastructure immediately adjacent.

The facility would have the capacity to accept up to two million tonnes of waste per annum. Up to 80% of materials would be recoverable or recyclable and would undergo a recovery process. Recovered material would be stored on site until sold. The remaining 20% would be unsalvageable material transferred to the adjoining landfill or moved off site. Any asbestos waste would be transferred directly to the landfill facility. Putrescible waste will not be received or landfilled at the facility.

The facility would accept solid waste (non putrescible) and asbestos waste. Landfilling is expected to be carried out for 45-65 years based on the upper (700,000 tpa) and lower limits (400,000 tpa) expected. The resource recovery component of the facility would continue to manage recyclable waste loads beyond the life of the landfill.

Other site operations would include an administration building, materials processing centre building, workshop building for site maintenance, amenity berms, material stockpile areas, drop-off zones, internal road network, wheel wash stations, on-site detention basins, leachate collection and treatment system, fuel storage area and weighbridges.

The finished products would be tested, stored and stockpiled on site prior to resale. Major users would include the building, construction and landscape industries and domestic markets.

The project would generate approximately 30 jobs during construction and approximately 59 jobs during operation. There would also be an increase in indirect employment via the provision of support services. The project has a capital investment value of $36,595,444.

Importantly, the project would optimise the use of and rehabilitate a former quarry site, support recycling initiatives and divert waste away from landfill. In rehabilitating the site over the long term, the project facilitates future economic development meeting *State Environmental Planning Policy (Western Sydney Employment Area) 2009's* aim to ensure long term economic development and employment within Western Sydney.

The project constitutes a 'major project' under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), and consequently requires the Minister's approval.

During the exhibition period, the Department received 115 submissions on the project: 9 from government authorities and 106 from the general public. Public submissions included one from the Minchinbury Resident Action Group that included a petition with 1035 signatures. All of the public submissions objected to the project, on grounds of permissibility, lack of justifiable demand, health concerns and environmental impacts. None of the public authorities objected to the project.

The Department has assessed the merits of the project in detail, and considers the key issues for assessment include justifiable demand, cell design and construction, waste screening procedures, leachate management, traffic / access and infrastructure contributions, air quality and noise.

The Department sought independent advice regarding justifiable demand which concluded that there is a justifiable demand for the project. The project would add 14 million tonnes (40%) to Sydney's Class 2 (non putrescible) landfill capacity, and ensure there is a level sufficient to accommodate 20 years of demand at expected future disposal rates. The assessment also concluded that the environmental impacts of the project can be managed through the imposition of strict conditions.

The Department is satisfied that the project can be managed in accordance with applicable criteria and guidelines, and to an acceptable level of environmental performance.

On balance, the Department is satisfied that the project's benefits significantly outweigh any residual costs, and that it is in the public interest and should be approved, subject to conditions.

# 1. PROPOSED PROJECT

## 1.1 Project Setting

The project is located at the former Pioneer Quarry at Eastern Creek in the Blacktown Local Government Area. The site is located within the area defined as the Western Sydney Employment Area (WSEA), and is approximately 36km west of the Sydney central business district.

The site (see Figure 1) covers an area of approximately 120 hectares, however, the operational components of the project would largely be restricted to the quarry void itself (for landfilling) and the area immediately to the west of the void (materials processing centre and associated infrastructure), which totals 52 ha.

The site is surrounded by land owned by Tesrol, Australand, Hanson, Jacfin, the Department of Planning and Sargents, all of which is earmarked under the WSEA SEPP to be redeveloped for higher end industrial and employment uses over the next decade.

The closest residential areas are located approximately 120 metres from the northern boundary of the site at Minchinbury, and 800 metres to the west of the site at Erskine Park.

While the site is located in close proximity to the M4 & M7 Motorways, the regional road network within the WSEA is only just starting to be developed. Consequently, access to the site is currently via a right of carriageway which connects to Old Wallgrove Road near the M7 interchange (see Figure 1).

The site has generally been cleared of vegetation, but has a stand of remnant Cumberland Plain Woodland on the north-western corner of the site that is identified as a conservation area under the WSEA SEPP. Other features of the site include the quarry void itself, internal haul roads, 10m high earth berms, cleared grazing land and a tributary of Ropes Creek.

Part of the site is currently leased by Hanson Construction Materials Pty Ltd and used as an asphalt and concrete facility. Figure 2 illustrates the land parcels that comprise the site along with the Hanson lease area. Hanson currently has a concept plan and project application under consideration by the Department. No component of the Hanson proposal or current operations form part of this Project. It should be noted that both ThaQuarry and Hanson intend on undertaking a boundary realignment in the near future. However, subdivision does not form part of this project application.

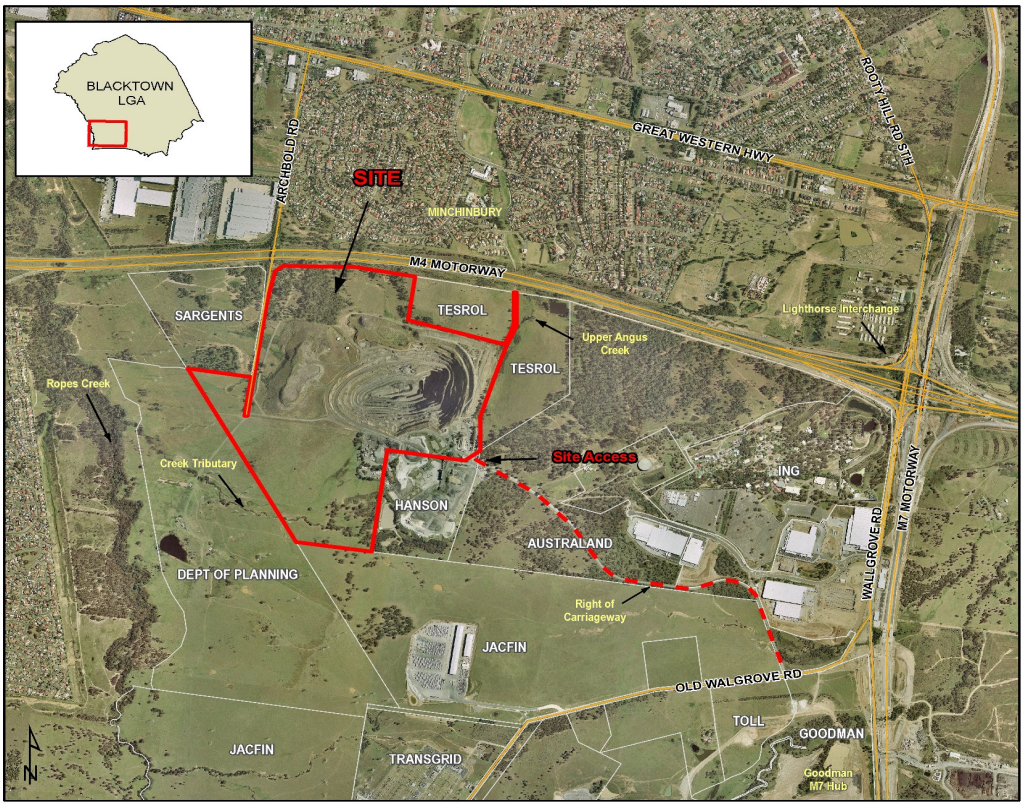


***Figure 1: Regional Context***

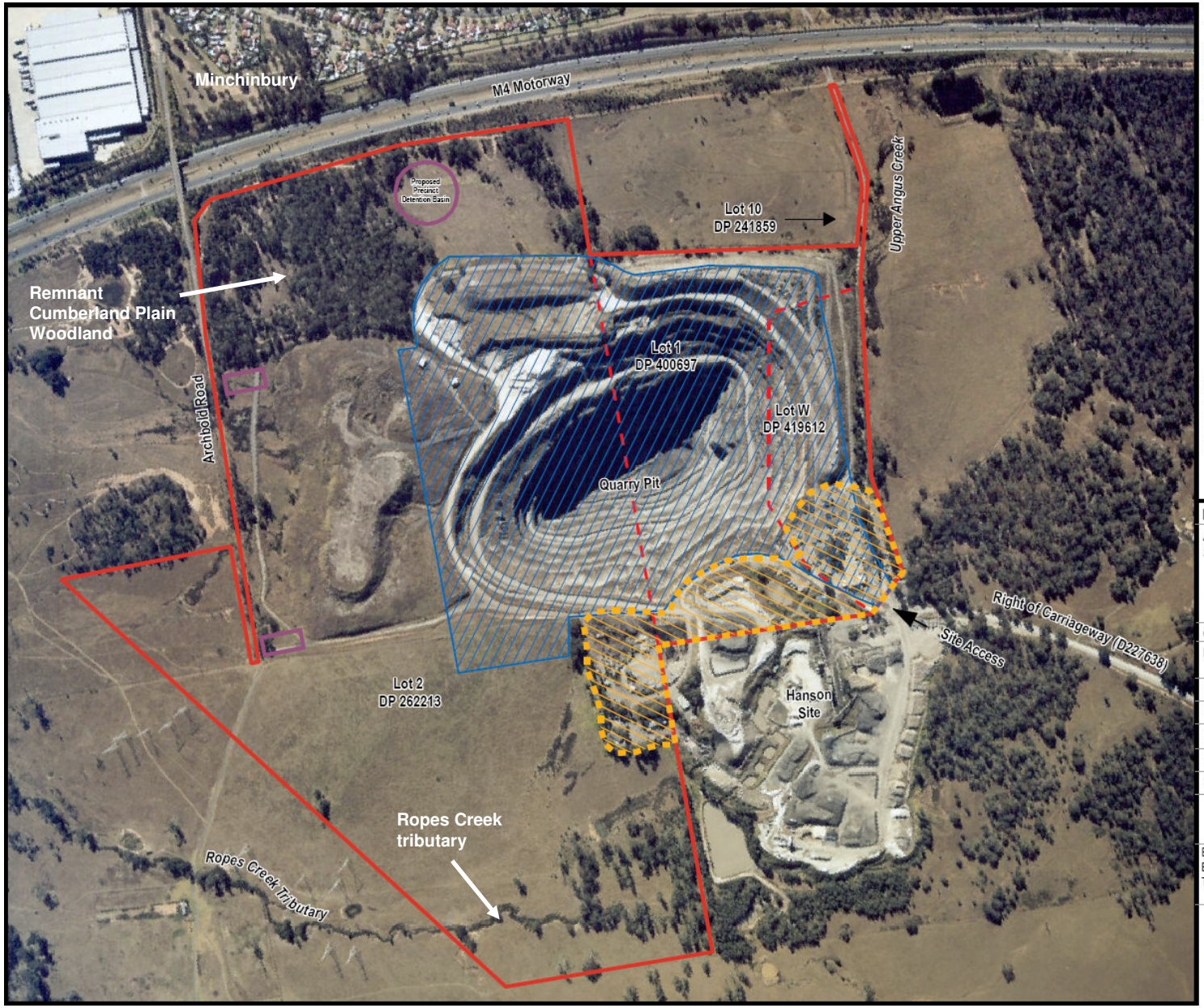


***Figure 2: Lots that Comprise the Site & Hanson Lease Area***

Current surrounding landuses include Hanson's asphalt and concrete facility to the south, cleared grazing land to the east, north and west. The M4 motorway is located further north and Ropes Creek and Archbold Road are located to the west. Industrial developments associated with the Western Sydney Employment Hub are progressively filling cleared land to the south and east. The upper Angus Creek is located on the neighbouring Tesrol property, along the eastern boundary.

The Tesrol / Sumy land holdings straddle the 'sliver lot' (Lot 10 DP 241859). Sumy / Tesrol are currently landlocked and have no legal access to their land. In addition, Sumy / Tesrol have no access between their land lots that straddle the sliver lot.

The site was sold to ThaQuarry in 2005 as quarrying operations came to an end. Quarrying activities commenced in the 1950's supplying basalt for use in the construction industry until 2005. The quarry is an open cut elliptical void up to 150m deep and approximately 430 x 700m across the surface. Steep earth berms consisting of quarry overburden, averaging 10m in height exist along the north, west and southern boundaries of the quarry site. A large berm, over 10m in height is located in the north-east of the site.

### 1.2 Project Description

The Project would be comprised of:

- a waste recovery facility for recycling building and green waste; and
- a Class 2 (non putrescible) landfill in the former quarry void.

With the exception of stormwater detention basins, parts of the north/west amenity screen and the sewer line, the proposal would be contained to the Operational Area of the Project, which is 52.41 ha and illustrated in Figure 3 below.

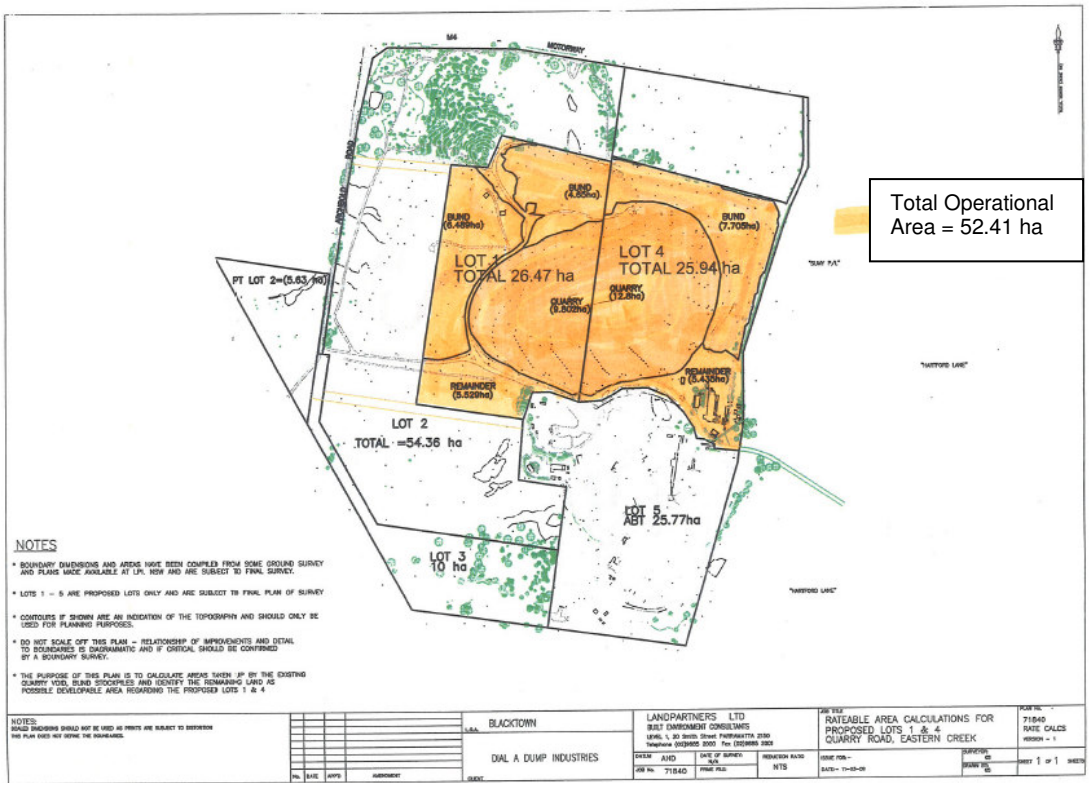


***Figure 3:Operational Area of the Project***

The major components of the project are summarised in Table 1, depicted in Figure 4 and described in full in the Environmental Assessment (EA), Response to Submissions and Preferred Project documentation.

*Table 1: Major components of the project*

| ***Aspect*** | ***Description*** |
|---|---|
| ***Project Summary*** | **Construction and operation of a resource recovery and non-putrescible landfill facility at the former Pioneer Quarry site, Eastern Creek** |
| *Landfill Area Quarry Void*<br><br>22.602 ha | The quarry void would be progressively filled with non-recoverable waste over a 45-65 year period. The landfill:<br>▪ Has capacity for up to11 million $m^3$ of non-putrescible waste<br>▪ Is an oval shaped void up to 150 m deep and 430m x 700m across the surface<br>▪ Has an unsealed road winding to the bottom of the void |
| *Waste* | ▪ Total Throughput: Up to 2,000,000 tonnes per annum<br>▪ Waste Recycled: Up to 1,600,000 tonnes per annum<br>▪ Waste Landfilled: Up to 700,000 tonnes per annum<br>▪ Types of Waste Received: general solid (non putrescible) waste (including green waste) and (special) asbestos and asbestos contaminated waste and waste tyres. Waste will generally be sourced from the construction & demolition and commercial & industrial sectors, along with trailer loads etc from the general public.<br>▪ Types of Waste Recycled: base materials for building, landscaping and road construction, recovered goods (e.g. furniture, clean bricks & pavers).<br>▪ Types of Waste Landfilled: general solid non putrescible waste, asbestos and asbestos contaminated waste, unsalvageable materials and waste loads that are so mixed they can't be sorted. |
| *Site Access* | ▪ Site access will be via the existing Right of Carriageway off Old Wallgrove Road or via Wonderland Drive, via public roads wherever they are available.<br>▪ Public access will not be permitted beyond the elevated drop off area within the Materials Processing Centre. |
| *Materials Processing Centre* | Comprising a building used for sorting, separating and screening of incoming waste loads along with an outdoor 'green waste' area. The Materials Processing Centre will include:<br>▪ A publicly accessible, elevated drop off / hand unload area with segregated bays bins and receptacles<br>▪ Work floor (indoor) for sorting<br>▪ Green waste stockpile / windrows / chipping area (outdoor)<br>▪ Waste Transfer & Quarantine Area (indoor)<br>▪ Weighbridge No: 2 (inside the Materials Processing Centre building) |
| *Ancillary Infrastructure* | ▪ Office building, amenities, car parking (50 spaces) and truck parking<br>▪ Weighbridge No: 1 (adjacent the administration building)<br>▪ Sealed internal roads (with the exception of the road within the quarry void)<br>▪ Workshop building for site & equipment maintenance<br>▪ Material stockpile and crushing, screening and grinding area<br>▪ Stormwater collection, storage and treatment system<br>▪ Leachate collection, storage and treatment system<br>▪ Wheel wash stations<br>▪ Spotter stations and screening point (tarp stand area)<br>▪ Fuel storage area<br>▪ Security fencing and gates |
| *Amenity Berms* | The perimeter of the operational area will have amenity berms / visual screens and barriers. The amenity berms will be reshaped and graded to achieve a minimum height of 10 metres around the perimeter for visual and noise screening. Details of the amenity berms / screens include:<br>▪ North eastern amenity berm (7.705 ha)<br>▪ Northern amenity berm (surrounded by ring road) (approx 180 m length)<br>▪ North western amenity screen (approx 120 m length)<br>▪ Western amenity berm (approx 330 m length)<br>▪ Southern amenity berm (approx 225 m length with 60 metre length return) |
| *Employment* | ▪ Construction: 30 people<br>▪ Operation: 59 people (including up to 10 contractors). |
| *Hours of Work* | Construction:<br>▪ Monday to Friday 7am to 6pm; and<br>▪ Saturday 8am to 4pm.<br>Operation:<br>▪ Monday to Friday 7am to 6pm; and<br>▪ Saturdays, Sundays and Public Holidays 8am – 4:00pm |
| *Capital Investment Value* | $36,595,444 |

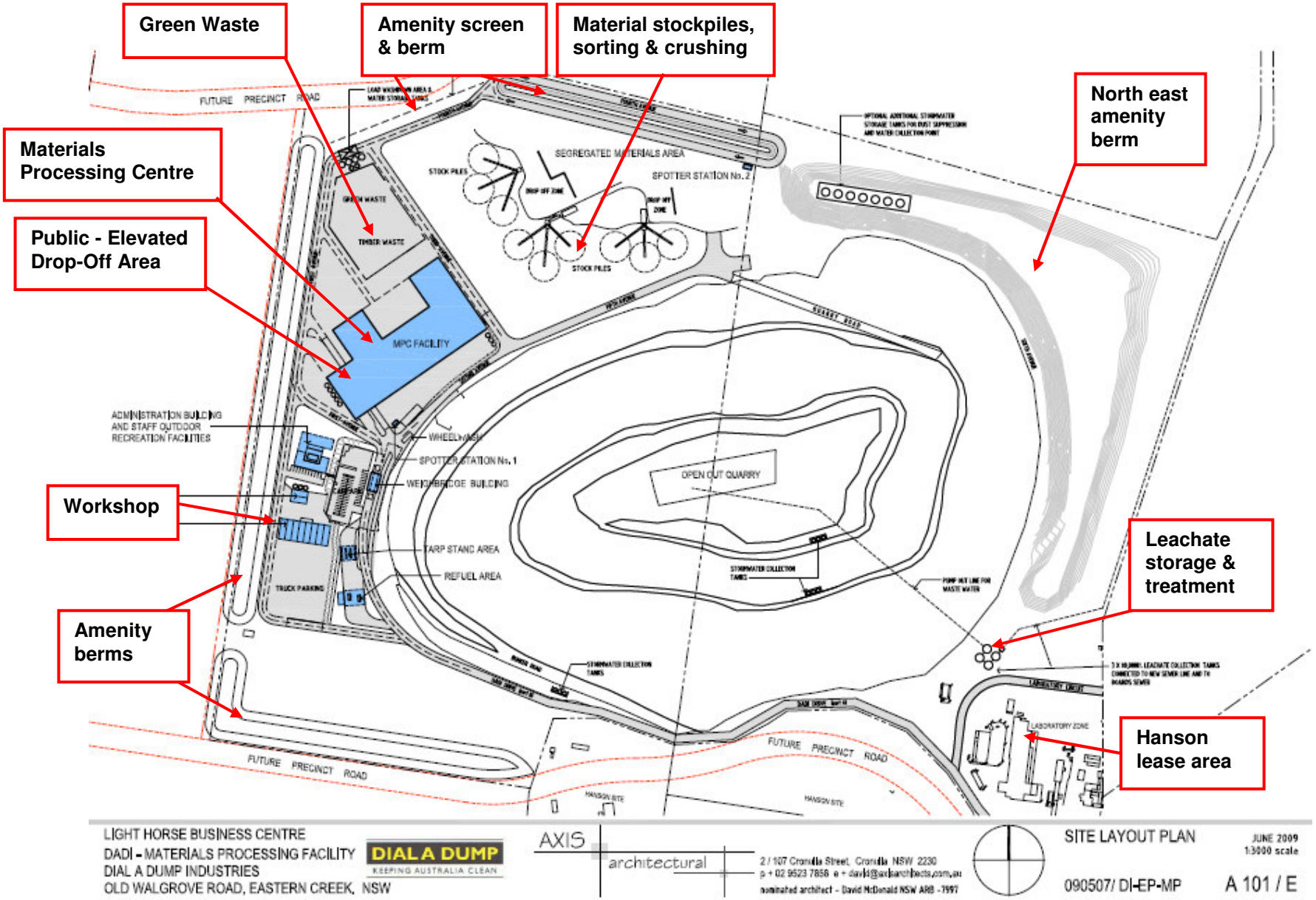


*Figure 4: Site Plan*

# 2. STATUTORY CONTEXT

## 2.1 Strategic Planning

The key strategic documents governing the area and the proposal include: the State Plan; the Metropolitan Strategy; State Environmental Planning Policy (Western Sydney Employment Area) 2009 (WSEA SEPP) and the State Government's Waste Avoidance and Resource Recovery Strategy (WARR Strategy).

The State Plan provides priorities for Government action for the State of NSW. In relation to the western Sydney region, the State Plan seeks to improve access to employment lands, simplify planning processes and enhance transport infrastructure particularly around employment lands. The western Sydney region is a major contributor to the economic output of NSW and the provision of jobs closer to home for the people of western Sydney is seen as a key objective for the area.

The Department has assessed the proposal against the Plan's key priorities and considers that the project would meet several priorities including:

- P1 Increased business investment. The development would generate $36 million in investment into the region;
- P2 Maintain and invest in infrastructure. To facilitate the development of the proposal, ThaQuarry would construct infrastructure required to service the facility, contribute to the upgrade of local roads and would provide contributions towards regional infrastructure; and
- E5 Jobs closer to home. The site is located in close proximity to residential areas in Erskine Park, Minchinbury, Horsley Park and Blacktown, as well as the Blacktown and Penrith City Centres.

The Western Sydney Employment Area lands, of which Eastern Creek is an integral component, have also been identified in the NSW Government's Metropolitan Strategy and the WSEA SEPP as being of regional and state significance for employment and investment.

The Department considers the proposal to have significant economic, environmental and community benefits as it will enable the former quarry to be rehabilitated and integrated into the Western Sydney Employment Lands over the long term. There is even potential to allow the land on top of the quarry to be redeveloped for a range of beneficial uses once landfilling is complete, which is consistent with the strategic intent of the Metropolitan Strategy and WSEA SEPP. The WSEA SEPP also makes specific provision (under Schedule 1, Clause 1) for a non-putrescible landfill on the site, thereby reaffirming the proposal's consistency with the strategic planning objectives for the area.

The NSW WARR Strategy sets aggressive resource recovery targets. The majority of the waste received at the site (around 70%) would be processed through a Materials Recycling Facility (MRF) to recover materials of value for recycling. Without being able to exactly predict the makeup of the incoming waste stream, the assumption is that around 80% of this majority waste flow will be recycled leaving 20% to be sent to the landfill. Recovered material would include steel, timber, garden waste etc. The Department is therefore satisfied the proposal is consistent with the WARR strategy, as extensive resource recovery and recycling is proposed, thereby reducing the amount of waste to landfill.

## 2.2 Major Project

The proposal is classified as a major project under Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) because it is development for the purpose of a resource recovery or recycling facility that handles more than 75,000 tonnes per year of waste, and consequently requires the Minister's approval.

## 2.3 Permissibility

The proposal is permissible with consent under *State Environmental Planning Policy (Western Sydney Employment Area) 2009*.

## 2.4 Exhibition and Notification

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

After accepting the EA for the project, the Department:

- made it publicly available from 11 December 2009 until 19 February 2009:
  - on the Department's website, and
  - at the Department's Information Centre, and the offices of Blacktown City Council and the Nature Conservation Council;
- notified landowners in the vicinity of the site about the exhibition period by letter;
- notified relevant State government authorities and Council by letter; and
- advertised the exhibition in the Blacktown Advocate.

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

During the assessment process the Department also made a number of documents available for download on the Department's website. These documents included the:

- project application;
- Director-General's environmental assessment requirements;
- EA;
- ThaQuarry's response to issues raised in submissions; and
- the preferred project report.

### 2.5 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 provisions of environmental planning instruments (including the Major Development SEPP, WSEA SEPP, Infrastructure SEPP, SEPP 55, SEPP 33 and Sydney Regional Environmental Plan No: 20 – Hawkesbury-Nepean River), that substantially govern the carrying out of the project.

The Department has assessed the project against the relevant provisions of several environmental planning instruments and is satisfied that, subject to the implementation of the recommended conditions of approval, the project is generally consistent with the aims, objectives and provisions of these instruments (see Appendix C).

### 2.6 Objects of the Environmental Planning and Assessment Act 1979

The Minister's consideration and determination of the application must be consistent with the relevant provisions of the EP&A Act, including the objects set out in the Act's section 5. The objects of most relevance to the Minister's decision on whether or not to approve the project are found in section 5(a)(i), (ii), (vi) and (vii). They are:

> *'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,*
> *(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".*

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the application. The 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. ThaQuarry has undertaken an environmental assessment of the project, and considered the project in the light of the principles of ESD.

### 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 environmental assessment requirements 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 115 submissions on the project including:

- 9 submissions from public authorities (including Blacktown and Penrith City Councils, Department of Environment and Climate Change (DECCW), Department of Water and Energy (DWE), Sydney Regional Development Advisory Committee (SRDAC), Sydney Water, Sydney Catchment Authority and Transgrid); and
- 106 submissions from the general public, including a petition with 1035 signatures.

A brief summary of the issues raised in submissions is provided below. A full summary of the issues raised in community submissions along with a full copy of public authority submissions are attached at Appendix E.

### 3.1 Public Authorities

None of the public authorities oppose the proposal. Issues raised in submissions from the public authorities are summarised below.

**Department of Environment, Climate Change and Water's (DECCW)** principal issues relate to the proposed leachate management system and managing potential impacts from leachate migrating into the groundwater aquifers. In addition, DECCW raised concern regarding ThaQuarry's noise assessment and as a result, recommended the proposal be restricted to daytime operations.

**Blacktown City Council's** principal areas of concern in their initial submission relate to screening the incoming waste stream for putrescible waste, local development contributions (levied on the full operational area of the facility, including the quarry void), signalisation of the intersection of Old Wallgrove Road, compliance issues with the Precinct Plan, particularly in relation to Ecologically Sustainable Development (ESD) principals, sealing the internal road inside the quarry void, design issues for the temporary stormwater basins and provision of an after-hours delivery area on site to mitigate potential impacts from the after-hour deliveries that were initially proposed for the facility.

Council made two supplementary submissions in late June 2009 raising concern regarding the long term protection and management of the conservation area (identified in the Precinct Plan) on the north west corner of the site, a request that all the Precinct Plan Roads that fall on ThaQuarry's land be implemented as part of any approval along with further detailed comments on ThaQuarry's revised stormwater scheme.

Following review of the preliminary draft conditions of approval, Council made a final submission on the proposal on 16 July 2009. Council's final submission raised general concern that issues raised in previous submissions hadn't been addressed, reiterated the request for provision of an after-hours delivery area, requested again that the roads inside the quarry void be sealed and reiterated concern regarding traffic safety issues and the signalisation of the intersection of Old Wallgrove Road. In addition, Council raised concern over both local and regional contributions, requested government to clarify the status of the link road network and underwrite the cost of implementation of this network, requested ThaQuarry pay local contributions toward the 'quarry/ link road' and made suggested payment arrangements for local contributions toward the Precinct Plan Stormwater Scheme.

**Sydney Regional Development Advisory Committee** suggested that access to the M4 motorway and Archbold Road be denied. SRDAC requested that the right of carriageway only be used until alternative access (Precinct Plan, public road) off Old Wallgrove Road is provided. With regard to development contributions, SRDAC requested that ThaQuarry enter into a Voluntary Planning Agreement (VPA) with the RTA for regional road contributions and enter into a VPA with either Council or the Minister for local road contributions, including the upgrade Old Wallgrove Road and the signalisation of intersections along Old Wallgrove Road.

**Department of Water and Energy (now within DECCW)** recommended that any watercourses and riparian lands on site (the Ropes Creek catchment) be protected and rehabilitated.

**Sydney Water** provided advice on the provision (and timing) of water and waste water services to the site and the general requirements of these services.

**Ministry of Transport** provided advice on the provision of bus services available in the vicinity of the proposal.

**Penrith City Council's** principal concerns relate to potential air quality & odour impacts and noise impacts, particularly in relation to the after-hour deliveries that were initially proposed for the facility.

Neither **Transgrid** nor the **Sydney Catchment Authority** raised concerns with the project.

The Department also received internal advice from both the Western Sydney Regional team and the Hazards branch on the proposal.

### 3.2 Community

All of the community submissions object to the proposal. There are two distinct groups of community interest; the residents of Minchinbury who are concerned about the potential amenity and health impacts of the proposal; and the adjoining landowners, who are concerned about the potential effects of the project on the broader redevelopment potential of the WSEA, and their land in particular.

There is notable concern amongst the community that they may be at risk of contracting asbestos related diseases from the asbestos and hazardous waste proposed to be received at the site. It should be noted that following the Department's assessment of the proposal, hazardous waste is not recommended to be permitted at the site. The receipt and disposal of asbestos waste is discussed further below. The other key areas of community concern are:

- Dust and odour impacts
- Decreased property values in adjoining residential areas
- Noise impacts
- Vermin control
- Lack of community consultation
- Environmental monitoring and screening procedures
- Traffic and access issues
- Permissibility
- Lack of justifiable demand for the project
- Lack of jobs involved with the proposal
- Leachate (waste water) management and impacts to groundwater
- Stormwater
- Impacts to riparian corridors
- Developer contributions
- Lack of certainty regarding final landform

### 3.3 Response to Submissions

ThaQuarry has provided a response to submissions, and then later a Preferred Project Report (see Appendix D), as well as a revised Statement of Commitments for the project. These have been made publicly available on the Department's website.

The Department has considered the issues raised in the submissions, and ThaQuarrys response to these issues, in its assessment of the project.

# 4. ASSESSMENT

Following an assessment of the proposal, a review of submissions and the ThaQuarry's response to submissions, the Department considers the key issues to be:

- Waste (including the justifiable demand for the proposal, the cell design & construction and waste streams);

- Leachate Management;
- Traffic, Access and Infrastructure Contributions;
- Air Quality; and
- Noise.

These issues are considered below. Other issues are considered in Table 5.

### 4.1 Waste

Justifiable Demand

The project involves the receipt and handling of up to 2 million tonnes of waste per annum, the majority of which would be recycled and the remaining amount to be landfilled. Given the scale of the project and the large amounts of waste being received, a key issue in the consideration of the project is whether there is justifiable demand for such a large facility. The principle underpinning the concept of justifiable demand is to keep landfill capacity scarce to encourage people to divert all waste streams away from landfills.

Under clause 123 the Infrastructure SEPP, in determining a development application for a landfill, the consent authority must take the following matters into consideration:

- whether a justifiable demand exists for the landfill, having regard to the provisions of the *NSW Waste Avoidance and Resource Recovery Strategy* and the waste disposal data provided from time to time by DECCW;
- whether the location of the development is consistent with any regional planning strategies or locational principles included in the publication EIS Guideline: Landfilling (Department of Planning 1996), as in force from time to time; and
- the views of relevant public authorities and councils responsible for the area from which the waste material is proposed to be sourced.

The Project application was lodged in 2006, prior to the commencement of the Infrastructure SEPP. However, the Department considers the issue of whether there is justifiable demand for the Project to be of critical importance to the merit assessment of the project and included it in the Director-General's Requirements for the EA.

ThaQuarry believes justifiable demand exists for the proposed landfill for the following principal reasons:

- there is a shortfall in landfill space in Sydney and reducing landfill capacity in the surrounding western Sydney area in particular (although it is unclear on what data this is based);
- the Project is of such a large scale, good location and coupled with the resource recovery facility, will enable it to accommodate a large portion of Sydney's non-putrescible waste; and
- there are significant infrastructure projects on the horizon (including road widening at Hoxton Park and Woodford) that will generate large volumes of waste, unable to be recycled. The landfill component of the Project will be well placed to accommodate this waste.

Nevertheless, the Department commissioned independent waste expert Mr Tony Wright to assess the extent to which justifiable demand exists for the project. Mr Wright is also assisting the NSW Government with an Independent Review of Sydney's (Putrescible) Landfill Capacity and Demand.

Mr Wright finds that the fundamental measure to justifiable demand is the extent of existing landfill capacity in excess of disposal demand. Prudent planning practices suggest that a measure of contingency capacity should always be allowed for, say 10 years. Conversely, if excess capacity is to be avoided, then a maximum capacity limit should also be considered, say 20 to 30 years of demand at current disposal rates.

Mr Wright's assessment found the overall capacity of General Solid Waste (non-putrescible) licensed landfills in the Sydney Metropolitan Area (SMA) (without counting the project) is 35 million tonnes at the end of June 2009. This is sufficient to accommodate 14 years waste input at expected future disposal rates. This would indicate additional reserve capacity could be considered.

The project will add 14 million tonnes (40% or 6 years) to Sydney's Class 2 (non putrescible) landfill capacity, and ensure there is a level sufficient to accommodate 20 years of demand at expected future

disposal rates. Given this analysis and the desirable amount of reserve landfill capcity the project provides, Mr Wright's assessment concluded there is justifiable demand for the project.

Further, the assessment found the project to be consistent with the aims of the *NSW Waste Avoidance and Resource Recovery Strategy,* and in conjunction with the NSW government's waste levy, will help reduce landfilling rates. The proposal, over a 20 year period, would also bring about the rehabilitation of the quarry and potential return to productive use.

The Department also reviewed the proposal against the relevant planning strategies (see section 2.1 above) and the locational principles included in the publication EIS Guideline: Landfilling (Department of Planning 1996) in Table 2 below. The Department considers the location of the proposed landfill to be consistent with the locational principles in the Guideline.

*Table 2: Project Comparison Against Locational Principles in the EIS Guideline: Landfilling (Department of Planning 1996)*

| **Locational Principle** | **Project Comparison Against Principle** |
|---|---|
| 250 + metres away from a residential zone or dwelling, school or hospital | The edge of the former quarry void (the proposed landfill cell) is 490 metres from the nearest residence at Minchinbury and 780 metres from the nearest school (also in Minchinbury |
| 250 + metres away from areas of significant environmental or conservation value | Cumberland Plain Woodland area (identified as a Conservation Area in the Precinct Plan) is located 250 metres north west of the former quarry void and will not be disturbed by the proposal |
| Away from sensitive locations within a drinking water catchment | Project is not within a sensitive area of a drinking water catchment |
| at least 40 metres from a permanent or intermittent water course or groundwater reservoir used for drinking water | Former quarry void is located at least 40m from the water courses on and surrounding the site and the groundwater aquifer is not suitable for drinking water purposes in any case. |
| Away from sites with unsuitable sub-strata | Any landslip risk issues associated with the proposal are being addressed by appropriate mitigation measures (see 'Slope Stability' section below) |
| Away from floodway areas likely to washout in a 1 in 100 year flood event | Project is unlikely to be washed out by a major flood. |

The Department has also considered the views of relevant public authorities (see section 3 above) including Blacktown Council. None of the agencies objected to the proposal. The Department has recommended conditions of approval to address and mitigate any residual impacts identified by the agencies.

The Department supports the findings of Mr Wright's assessment and is satisfied there is justifiable demand for the Project. In addition, the Department has considered the views of the relevant authorities and the relevant strategic planning documents, and considers the proposed facility is consistent with both the strategic planning intentions for the site and the locational guidelines for landfills.

Cell Design and Construction

As described earlier, the landfilling component of the project will take place within the former quarry void. The site was operated as a quarry 1950s until 2005 which involved excavating, blasting and digging out the basalt resource. The former quarry void now needs to be re-engineered and prepared correctly for it to operate as a landfill.

*Landfill Liner*

Following exhibition of the EA, there was still some uncertainty regarding the geology of the void, the extent of fractures in the geology and the movement of the leachate and groundwater through those fractures. The associated issue of concern coming through submissions was the need for a landfill liner. The purpose of a landfill liner (such as impermeable clay or similar man made material) is to prevent the risk of potential leachate migration from the quarry void into groundwater aquifers.

ThaQuarry does not believe there is a need for a landfill liner. However, in their submission, DECCW concluded that on the basis of the current hydrogeological information in the EA, they could not determine whether the recommendation in the EA for the omission of a landfill liner (below the weathered zone) was justified and appropriate. As a result, DECCW requested a revised

hydrogeological assessment report, prepared by a suitably qualified independent expert to help finally determine if a landfill liner is required or not. ThaQuarry is currently finalising these additional investigations.

However, to provide certainty and prevent the risk of potential leachate migration into the groundwater aquifer, the Department's position is that a liner should be required and has included this in its recommended conditions of approval. The requirement for a full ground and wall liner will only be varied if the additional groundwater investigations (specified by DECCW) reveal an alternative solution to prevent the risk of leachate migration can be achieved.

*Slope Stability*

The EA made some recommendations regarding slope stabilisation and risk control measures that warrant particular consideration. Following an assessment and observation of the geotechnical features of the site and quarry slopes, the report suggests there are some significant risks to property and human life, specifically for the truck drivers entering the quarry void.

The report goes on to suggest various slope stabilisation and risk minimisation measures to reduce these risks including; regularly cleaning out debris from the catch bunds; installing some new safety and catch bunds, re-profiling the landslip area on the northern quarry wall; and undertaking ongoing monitoring of the landslip area via two inclinometers placed in boreholes.

To bring the risks to an acceptable level, the Department has recommended the full suite of slope stabilisation and risk minimisation measures documented in the Jeffery and Katauskas report be implemented prior to operations commencing.

*Landfill Plan, Compaction & Final Landform*

The aim is for the site to be returned to employment generating purposes once landfilling is complete. The Department recognises that the cell must be prepared, landfilling be executed and the final landform be reached in such a way, as to not compromise that aim.

The former quarrying operations resulted in several large quarry overburden stockpiles (which will form the amenity berms for the facility) being left around the perimeter of the quarry void. These berms will be maintained for the operation of the landfill, then ultimately be folded into the landfill to help achieve the final landform. Several submissions raised concern regarding the lack of certainty regarding the final landform that would be reached once landfilling was completed. This is an issue of particular concern to adjoining landowners who are wanting to develop their land for employment generating uses. As part of the Preferred Project documentation, ThaQuarry submitted a survey plan detailing the final landform for the proposal. The final landform represents a gently undulating surface that generally matches the existing levels of the surrounding landform. This survey plan of the final landform has been attached to the recommended instrument of approval. The Department has also recommended conditions of approval to ensure that adjoining landowners are not impacted by earth works required to reach this final level.

Compaction rates need to be optimised if there is any chance of development occurring over the site, once the void is rehabilitated and landfilling is complete. There was some suggestion in submissions that industrial development will never be achieved on the site due to settlement issues associated with landfills. Whilst future proposals involving large slabs may not be achievable, there is some potential for smaller scale industrial development to occur over the site once landfiling is complete. To help maximise the potential for future employment generating uses, as part of its recommended conditions of approval the Department has suggested a detailed landfill plan be prepared that sets up an appropriate landfilling regime that maximises compaction and is monitored over time.

<u>Waste Stream - Hazardous, Asbestos & Putrescible Waste</u>

Public submissions raised concerns regarding the potential health impacts relating to the proposed hazardous and asbestos waste streams along with other impacts relating to putrescible waste that may infiltrate the incoming waste stream.

*Hazardous Waste*

In relation to receipt of hazardous wastes, the Department notes the NSW waste classification legislation (under the POEO Act) changed earlier this year. Hazardous waste includes waste that

meets the criteria for assessment as dangerous goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail e.g. Class 1 explosives or Class 8 corrosive substances. The proposal has remained unclear in relation to the type of hazardous waste proposed to be received at the facility, and has also failed to detail how this material would be treated, handled and disposed of. As a result, both DECCW and the Department are recommending conditions that prohibit the receipt of hazardous waste at the facility.

*Asbestos Waste*

Workcover describe asbestos as the generic term for a number of fibrous silicate minerals. There are two major groups of asbestos:

- The Serpentine Group (white asbestos) – used for cloths, tapes, cement sheeting, casing and insulation pipes for water and telecommunications, even used recently (overseas) in brake and clutch lining.
- The Amphibole Group (brown and blue asbestos) – used for cement sheeting, pipes etc, banned in the mid 1980s.

The use of all forms of asbestos has been banned in Australia since December 31, 2000. However, as ThaQuarry documented in their EA, asbestos was used extensively, particularly in the Australian building industry for a long period prior to this ban. The unfortunate legacy of this is large volumes of asbestos and asbestos contaminated materials that need to be disposed of each year, as old housing stock is replaced with new and people renovate and improve their homes and the like. The Department is satisfied that this demand for safe disposal places is likely to be sustained for many years to come and the provision of an additional safe disposal place is therefore warranted.

Asbestos is formed in fibre bundles and when it is processed or disturbed, the fibre bundles become finer and more hazardous to health. The health impacts of inhaling small asbestos fibres are well documented. Suffice to say, breathing in the fibres brings a risk of asbestosis, lung cancer, mesothelioma and other benign pleural diseases.

Asbestos waste is one of the most heavily regulated wastes in Australia. The handling and disposal of asbestos waste is regulated by authorities including Workcover New South Wales, Department of Environment, Climate Change and Water and Safe Work Australia. ThaQuarry, like all other waste operators that receive asbestos waste, are obliged to operate within this rigorous regulatory regime.

ThaQuarry has detailed various measures to ensure the safe handling and disposal of asbestos and asbestos contaminated waste received at the site, consistent with the relevant legislation. These measures include; having nominated 'spotter stations' for inspection of loads, having a designated 'tarp stand area' for detailed inspection of loads and wrapping and burying asbestos waste at depth. In addition, the Department has recommended conditions of approval in relation to asbestos waste including integrating rigorous screening and handling techniques into the Environmental Management System for the facility along with specific staff training in relation to asbestos waste. Further, the Department has recommended a number of conditions relating to dust suppression and real time air quality monitoring. The Department is satisfied the environmental and health risks associated with asbestos waste can be managed.

*Putrescible Waste*

Submissions consistently raised concerns regarding the potential environmental impacts associated with putrescible material that may infiltrate the incoming waste stream at the facility. In particular, submissions focused on the odour impacts associated with putrescible waste.

To be clear, ThaQuarry did not apply for, and is not permitted to receive putrescible waste at the facility. The Department has recommended conditions of approval explicitly prohibit the receipt or disposal of putrescible waste. The issue is therefore how one prevents putrescible waste accidently infiltrating the incoming waste stream and how putrescible waste that does accidently enter the waste stream is managed.

As detailed above, ThaQuarry has proposed a series of spotter stations and a 'tarp stand area' for visual inspection of loads. Carriers identified with non-complying waste will be rejected and sent away immediately. Putrescible waste that is identified in the waste stream will be quarantined in separate receptacles and disposed of, off site, at a lawful facility. In addition, the Department has

recommended conditions of approval to integrate rigorous screening techniques into the Environmental Management System for the facility (including staff training). The Department has also recommended that signage be installed at the site, clearly outlining for all entering the facility what the permissible waste streams are. The Department is satisfied that this combination of waste management, screening techniques and signage will help mitigate and manage the risks and environmental impacts associated with putrescible waste.

### 4.2 Leachate Management

Leachate is generated when water (rain water or surface water) comes into contact with and percolates through waste, where it reacts with the products, chemicals and other materials in the waste to produce the leachate. For the project, leachate will mainly be generated when water comes into contact with the waste in the landfill cell and the outdoor green waste area adjacent the MPC. Small amounts of leachate would be generated from any moisture seeping out of the waste on the MPC work floor. If unmanaged, leachate can flow off site and has the potential to contaminate the surrounding environment including watercourses and groundwater, which is unacceptable.

Submissions raised a number of concerns regarding leachate management including potential groundwater contamination and lack of detail regarding how the leachate will be stored, treated and ultimately disposed. The Department's recommended requirement for a landfill liner to prevent the risk of groundwater contamination has been discussed in Section 4.1 above.

There are several leachate management systems available to ThaQuarry. Table 3 below explores the main options in general terms.

*Table 3: Comparison of Leachate Management Systems for the Project*

| Leachate Management System | Discussion |
|---|---|
| Irrigation | Irrigation generally works best when there a separate & closed landfill cells available to irrigate over. The site is not conducive to this process given it is one large void without separated cells. |
| Reuse | Involves on site storage of leachate (in leachate dams), possible treatment and testing to a suitable standard, then reuse for dust suppression etc. Environmental risk associated with potential odour impacts when storing the leachate in dams (see below). |
| Evaporation | Storage and evaporation of leachate in a series of leachate dams. Environmental risks associated with potential odour impacts from leachate dams and risks to the environment associated with potential overflows from the leachate dams. |
| Re-injection | Reinjection into the landfill cell involves collecting the leachate from the bottom of the cell, re-injecting it back into the cell and allowing the leachate to percolate through the waste again. The waste absorbs more leachate when reinjected. Uncertainty about the success, the scheme would require a detailed site water balance and almost certainly warrant a full landfill liner (which some of the other options may not require). |
| Off-site disposal | Uncertainty regarding capacity of nearby treatment facilities. Additional impact from truck movements. Not economically viable for ThaQuarry |
| Onsite treatment and disposal to sewer | Temporary storage of leachate in enclosed tanks and then processing leachate in an on-site treatment plant before disposal to sewer. Minimal environmental risk. Provides certainty for all stakeholders. |

Both DECCW and the Department concluded that the preferred option is for an on-site leachate treatment plant and disposal to sewer, and are satisfied this would provide the best environmental outcome and certainty for the project and community.

The leachate management system would therefore involve construction of a series of collection pipes within the quarry void, a riser and sump to allow the leachate to be pumped out of the void into enclosed storage tanks, and then into the leachate treatment plant on site. The leachate would be treated to a level acceptable to Sydney Water in the pre-treatment plant. The resulting wastewater would then be released to the sewer and proceed to Minchinbury sewerage treatment plant. Leachate generated from the green waste would be collected via a series of pipes and stored close by in enclosed storage tanks adjacent the green waste area. This leachate would be re-used to maintain suitable moisture levels in the green waste stockpiles.

ThaQuarry engaged with Sydney Water to determine if on-site treatment and disposal to sewer would be possible. Sydney Water has advised that, provided ThaQuarry constructs all the necessary infrastructure at their own cost and maintains and owns the majority of this infrastructure (including the onsite treatment plant and majority of pipes), a connection to the Minchinbury sewerage treatment plant is possible, subject to the relevant approvals with Sydney Water.

The Minchinbury sewerage treatment plant is north of the site, on the other side of the M4. The pipe work would predominantly run up the sliver lot (Lot 10 DP 241859) that divides the adjoining Tesrol property. However, in order to construct the necessary pipe work to connect to the sewer, ThaQuarry requires access to the neighbouring property owned by Tesrol. This access issue is discussed further in Table 5.

As part of its preferred project ThaQuarry documented the progress of negotiations with Sydney Water, demonstrating that a Trade Waste Agreement (for disposal of leachate to sewer) is feasible. The Department has requested that the detailed plans of the proposed leachate management system (including details of the Trade Waste Agreement with Sydney Water) be approved by the Director General, as part of the recommended conditions of approval

### 4.3 Traffic, Access and Infrastructure Contributions

The construction timeframe for the project is 6 months, with up to 30-40 workers on site. Construction traffic is never expected to reach operational traffic levels. Construction is expected to occur in three main overlapping phases:

- *Pre- construction (6 weeks)* – light vehicle movements for 15 workers, 8 deliveries of materials in heavy rigid vehicles per day and up to 15 concrete truck deliveries per day. (76 trips per day)
- *General construction* (14 weeks) – light vehicle movements for 30 workers, 12 deliveries of materials in heavy rigid vehicles per day and up to 40 concrete and other truck deliveries per day. (164 trips per day)
- *Commissioning (4 weeks*) - light vehicle movements for 40 workers, 5 deliveries of materials in heavy rigid vehicles per day and up to 10 other truck deliveries per day (including semi-tailors) (110 trips per day)

The Department is satisfied that construction traffic generation is relatively small and can be accommodated in the surrounding road network.

Operational traffic would be generated by deliveries of waste, dispatch of recycled products, general site deliveries and the light vehicle movements of staff, contractors and members of the public utilising the facility. The operational traffic generation for the project was assessed, based on two different operating scenarios: a minimum resource recovery rate (1,000,000 tpa resource recovery and 1,000,000 tpa to landfill) and a maximum resource recovery rate (1,600,000 tpa resource recovery and 400,000 tpa to landfill). The resulting predicted traffic levels are shown in Table 4 below. The Department notes the recommended conditions of approval restrict waste to landfill to 700,000 tpa, with associated resource recovery therefore being up to 1,300,000 tpa, i.e. somewhere in between the minimum and maximum resource recovery scenarios the traffic assessment was based on.

| | Light | Medium | Heavy | Total |
|---|---|---|---|---|
| Minimum Resource Recovery Rate | | | | |
| Peak hour | 18 | 23 | 43 | 84 |
| Daily | 196 | 222 | 430 | 848 |
| Annual | 68,600 | 77,700 | 150,500 | 296,800 |
| Maximum Resource Recovery Rate | | | | |
| Peak hour | 20 | 26 | 50 | 96 |
| Daily | 220 | 254 | 498 | 972 |
| Annual | 77,000 | 88,900 | 174,300 | 340,200 |

*Table 4: Projected Minimum and Maximum Traffic Volumes*

The Department has reviewed the EA traffic assessment and has also compared the projected traffic volumes with that of surrounding industrial developments that the Minister has approved. The Department considers the project to be a relatively minor traffic generator, particularly when compared to projects in the surrounding area, with predicted traffic volumes of approximately 15% of that of surrounding development.

As described earlier, existing site access is via a 'Right of Carriageway' which traverses Australand's land and connects the site to Old Wallgrove Road (See Figure 1). The Department is satisfied the project can continue to utilise the Right of Carriageway until the broader local and regional road network is in place. However, for safety reasons, the Department also considers that traffic lights should be installed at the intersection of the Right of Carriageway and Old Wallgrove Road. It is recommended that ThaQuarry contribute to the signalisation of this intersection, along with Hanson and the other landowners that will ultimately benefit from the access point to ensure this occurs during the development of the Link Road network.

The Minister has recently given concept plan approval for the Erskine Park Link Road, the proposed regional road network for the WSEA. In broad strategic terms it is comprised of a series of major north-south corridors (M7, Archbold Road, and Mamre Road), connected to major east-west corridors (M4, Lenore Lane/Link Road/Old Wallgrove Road. See Figure 5 below.

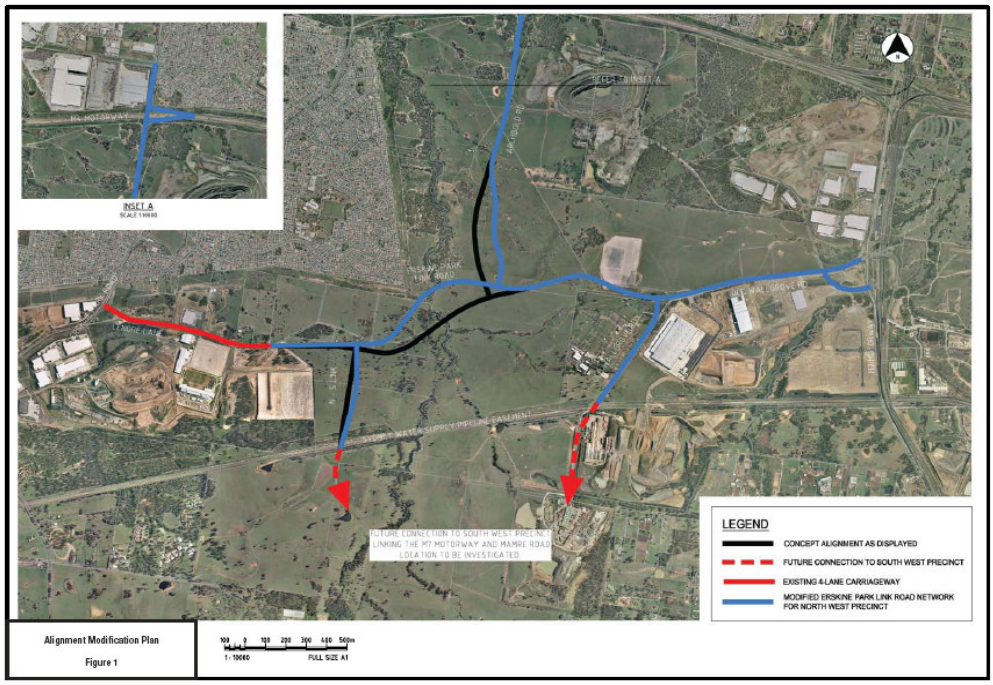


*Figure 5: Concept Plan for the Link Road Network*

The planning for this road network has been considered by Cabinet, taking into account the funding and broad design layout required for implementation.

The local road network is envisaged in Council's Precinct Plan for the Eastern Creek Precinct, ranging from local roads, collector roads to sub arterial roads. See Figure 6 below, illustrating the Precinct Plan road network.

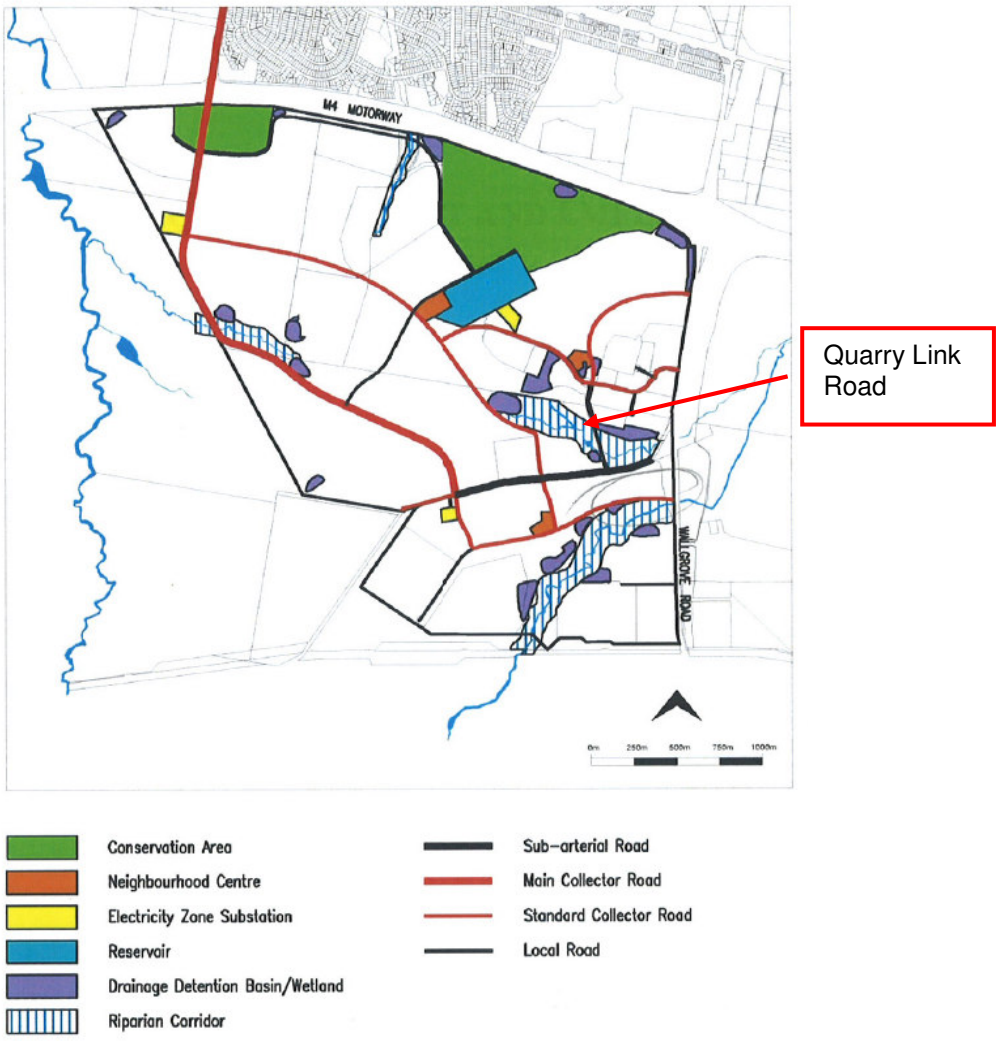


*Figure 6: Precinct Plan Road Network*

Whilst the project is not a major traffic generator, it still involves a degree of traffic. As such, the Department considers ThaQuarry should be required to contribute to the provision of both regional and local road infrastructure in the WSEA.

As a result ThaQuarry has agreed to:

- Pay up to $ 7,860,450 for the provision of regional infrastructure for the Eastern Creek Waste Project, which equates to $150,000 per developable hectare ( for the entire 52 ha operational area), making staggered payments over time;
- Contribute towards provision of the missing link in the local precinct road network known as the “Quarry Link Rd” (see Figure 4); and
- Construct all parts of the local Precinct Road network that fall within the operational area of the project (although it is noted this is unlikely to be much, if any).

However, subsequent to the offer being made by ThaQuarry, the Government announced its intention to impose a $180,000 State Infrastructure Charge, or SIC, per hectare of developable land in the WSEA. The Department has considered the Government’s proposed SIC contribution level in relation to the project, and is still satisfied that the current offer of contributions is reasonable and appropriate. This is primarily because:

- The project already provides an environmental and socio-economic benefit by rehabilitating a former quarry site and potentiallyreturning it, over the long term, to productive employment generating uses; and
- There is no sufficient nexus between the proposal and its impacts to the surrounding infrastructure to warrant further contributions.

With this offer of contributions toward Regional Infrastructure, together with recommended conditions of approval requiring contributions toward the Precinct Plan Stormwater Scheme (see table 5 below) and the local road network, the Department is satisfied that adequate arrangements are in place in terms of developer contributions for the project to be determined.

### 4.4 Air Quality

Emissions from construction activities relate primarily to dust from earthworks and vehicle movements on unsealed surfaces. However, these impacts would be minor and temporary (approximately 6 months duration) and are unlikely to impact on residential areas. However, the Department has recommended standard conditions for managing dust during construction activities.

Emissions from operations are more substantial and include:

- Dust and particulate emissions generated from dumping, loading, sorting, screening and crushing of materials; vehicle movements along unsealed, internal haul roads and wind erosion of the exposed landfill area and stockpiles; and
- Odour from the active tipping and capped areas, leachate in the pit, composting of green waste on site and small volumes of biodegradable materials that may enter the landfill.

Emissions over the life of the landfill would be greatest in the early years when distances travelled by trucks on the internal haul road within the landfill are the longest. As the landfill is progressively filled, distances would be reduced, thereby reducing dust emissions associated with haul trucks.

The nearest sensitive receivers are the residential properties located at Minchinbury, approximately 120 m from the northern boundary of the site on the other side of the M4 Motorway, or 490m from the northern edge of the quarry pit.

Modelling of dust and particulate emissions from the project, with implementation of proposed mitigation measures and consideration of background levels concluded that cumulative levels would:

- Meet DECCW impact assessment criteria for dust deposition, total suspended particulates (TSP) and annual average $PM_{10}$ (particulate matter less than 10 microns); and
- Exceed DECCW impact assessment criteria for maximum 24-hour average $PM_{10}$.

Existing PM10 (24-hour average) often exceeds the DECC criteria of 50ug/m3, which occurs in many parts of NSW, not just the project's site. These exceedances primarily occur in summertime when bushfires are a common contibuting factor. On the occasions when the background levels are elevated, any contribution from the project would also result in an exceedance of the criteria. Worst case contributions from operation of the project were predicted as 39ug/m3 at residents to the north of the site. If background concentrations are elevated, then exceedances of the 24-hour criteria would occur, resulting in short-term air quality impacts. As such, it is important that emissions from the project are tightly controlled and monitored, as well as long-term options being investigated for on-going minimisation of emissions.

In relation to annual average $PM_{10}$ the project would contribute 5.6ug/$m^3$, resulting in a cumulative maximum of 25.6ug/ $m^3$ at nearest residences. Whilst this is within the DECCW criteria of 30ug/ $m^3$, the contribution from the project is still noteable. Again, it is important that the project apply best practice dust and particulate mitigation measures such that $PM_{10}$ contributions from the project are minimised.

Given the potential for particulate emissions from the project, the Department recommends a number of conditions. These include:

- air emission limits for $PM_{10}$, TSP and deposited dust, consistent with DECCW criteria;
- implementation of dust control measures throughout the project, including sealing of all internal haul roads within the operational area of the project, with the exception of the haul road within the quarry void. Other control measures include water sprays for operational areas and planting and maintenance of vegetation on all perimeter berms;
- an Air Quality, Odour and Greenhouse Gas Management Plan prepared by an independent expert, detailing measures to control air quality emissions, triggers for remedial action, a monitoring program including best practice, real-time dust monitoring and specific measures for managing $PM_{10}$ impacts including triggers for ceasing dust-generating works.

These measures are critical for minimising emissions, as the air quality assessment predicted emissions with mitigation measures in place. ThaQuarry has started evaluating the option of installing a conveyor from the materials processing centre into the landfill void. This option would reduce dust and particulate emissions by reducing the number of trucks using the unsealed internal haul road within the void. This option is subject to further evaluation and would be assessed as part of a separate application should ThaQuarry progress it.

Both DECCW and the Department are satisfied dust impacts can be manged with good dust management practices, particularly during adverse weather conditions. The Department has recommended ThaQuarry prepare a comprehensive dust and greenhouse gas management plan, which includes the implementation of a real-time dust monitoring program. This monitoring program would ensure ThaQuarry promptly responds and manages any short-term dust events from their Project. In doing so, ThaQuarry can minimise their Project's contribution to short-term dust events in the broader area. The Department is satisfied that the recommended conditions would ensure dust and particulate emissions from the project can be effectively managed.

In addition, given putrescible waste is not permitted at the proposed facility, the Department considers potential odour impacts to be minor. Leachate (another potential odour source) is proposed to be pumped from the bottom of the landfill into en enclosed pre-treatment system before being disposed to sewer. The recommended leachate treatment system again affirms there is unlikely to be odour impacts from the facility. Both DECCW and the Department have also recommended the implementation of a comprehensive environmental management and monitoring system to manage other potential odour sources suhc as the green waste area. The Department concludes that potential odour sources from the project can be effectively managed through implementation of comprehensive enviornmental management and monitoring systems and other stringent conditions.

### 4.5 Noise

As a recycling and waste facility, noise from operations would include crushing and screening of waste, noise from excavators and compactors at the material processing facility and in the pit, operational vehicles such as dump trucks and water carts and road traffic noise from deliveries to and from the site. The operational area is surrounded by earth berms to the north, south, west and north-east, which would be reshaped to a consistent height of 10m as part of the project, see Figure 8. The berms would also be vegetated providing dust mitigation, visual screening and potential noise reduction.

ThaQuarry proposes to carry out the majority of activities during the daytime, but requested extended hours of operation, from 6am to 10pm, with allowance for some deliveries after 10pm. The noise assessment carried out as part of the EA determined background noise levels at the nearest residences in Minchinbury (to the north) and Erskine Park (to the west), modelled construction and operational noise sources, and provided comparison with DECCW impact assessment criteria. However, in their primary submission on the project, DECCW indicated they did not accept the background noise levels and therefore, did not accept ThaQuarry's derived noise limmits and conclusions of the noise impact assessment.

Accordingly, DECCW recommended their own stringent noise criteria for the nearest affected residents in Minchinbury and Erskine Park, operational hours be restricted to the hours of 7am to 6pm, weekdays and 8am – 4:00 pm Saturdays, Sundays and Public Holidays and no after-hour deliveries be permitted. DECCW further indicated that based on their experience of noise from other waste facilities, they expect that noise from operations would not exceed their recommended criteria during daytime periods (7am – 6pm).

IWhilst the noise criteria are low, the Department considers that noise contributions from the project would be minimal at residences. The site is separated from the nearest resident by the M4, a six lane motorway which would dominate the noise environment for residents.

Therefore, the Department concludes that noise from the project is unlikely to generate significant impacts at the nearest residents. Should ThaQuarry wish to extend operational hours or modify the proposed noise criteria, further detailed assessment is required.

The Department recommends the following conditions to manage noise from the project:

- noise criteria of $L_{Aeq(15min)}$ 36dB(A) for daytime, at nearest affected receivers in Minchinbury and Erskine Park;
- operations be restricted to daytime hours of 7am to 6pm, Monday to Friday and 8am to 4pm on Saturdays, Sundays and public holidays. After-hours deliveries are not permitted;
- works to construct and reshape the earth berms to a height of 10m along the north, south and western boundaries be carried out prior to commencement of operation; and
- a noise monitoring program is implemented to evaluate compliance with noise criteria.

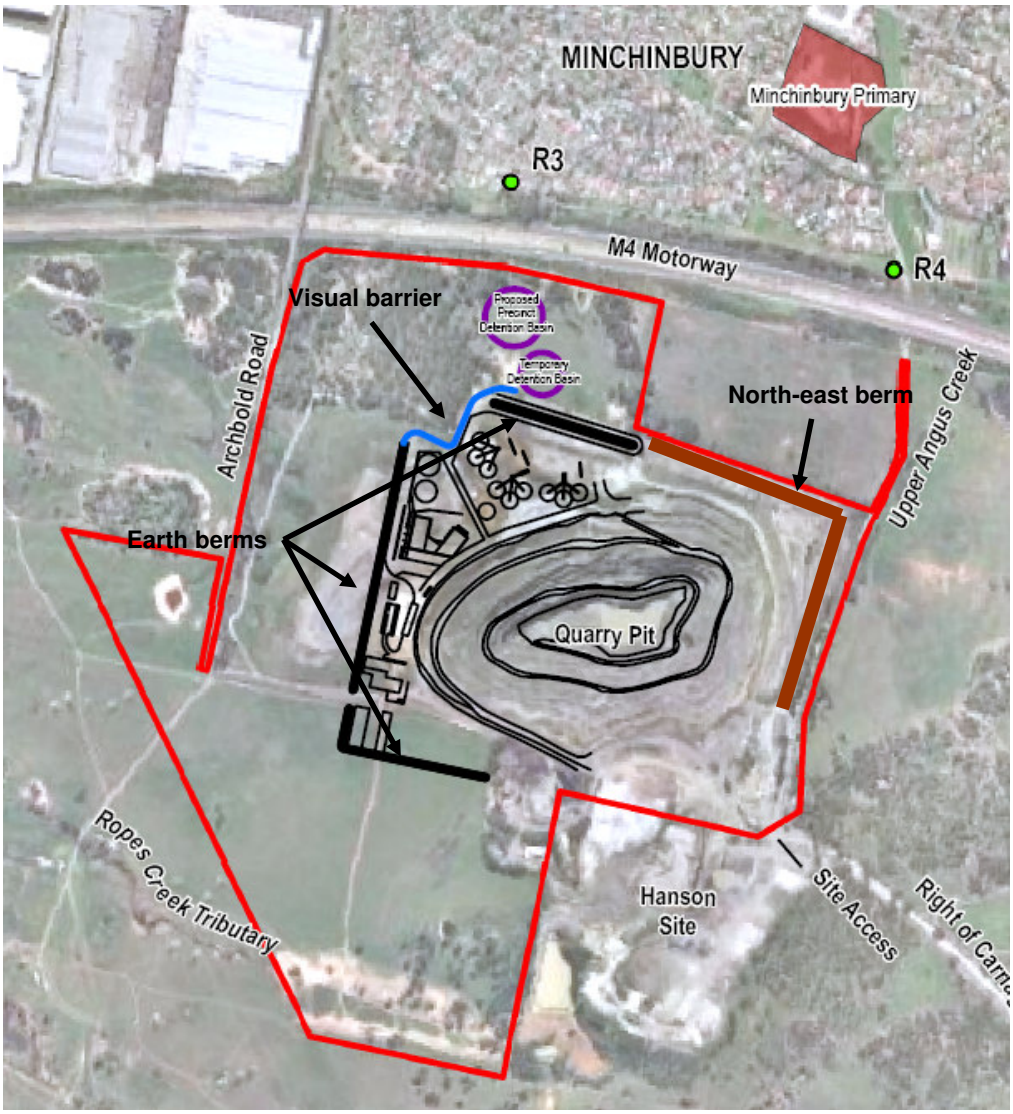


***Figure 8: Location of earth berms***

### 4.6 Other Issues

Other issues and impacts associated with the project are summarised in Table 5.

*Table 5: Other issues*

| ***Issue*** | ***Assessment*** | ***Recommendation*** |
|---|---|---|
| Permissibility | • Adjoining landowner Jacfin suggests the proposal is prohibited because the project is not for the purpose of a waste facility for non-putrescible material. Jacfin suggest green waste and similar material proposed to be received at the facility is biodegradable, 'putrescible' material.<br>• Jacfin further suggest the MPC is an independent and separate proposal. | • No additional recommended conditions. |

| *Issue* | *Assessment* | *Recommendation* |
|---|---|---|
| | • The Department does not support these claims and maintains the proposal is specifically permissible under both SEPP 59 and now the WSEA SEPP. | |
| Project Alternatives | • Adjoining landowner Jacfin suggests the EA does not consider a number of obvious and more appropriate alternatives to rehabilitate the quarry without using wastes for fill.<br>• The Department has considered Jacfin's suggested alternatives including filling the quarry exclusively with VENM and utilising the quarry void as a water reservoir, The Department has concluded that on balance, rehabilitating the quarry through progressive non-putrescible landfilling is the optimal use of the site for environmental and economic reasons. | • No additional recommended conditions |
| Surface Water | • ThaQuarry proposes an interim on site solution to mange surface water / stormwater. However, should a regional stormwater scheme become available, ThaQuarry is willing to contribute toward and move to that scheme.<br>• The Department is satisfied with the preliminary design for the interim solution and will require further detailed designs to be developed in consultation with Council. Regardless, there is sufficient space on site to manage stomwater appropriately | • ThaQuarry is required to prepare a detailed stormwater scheme in consultation with Council; and<br>• ThaQuarry is required to commit to and contribute toward a regional stormwater scheme should it become available. |
| ESD Principles | • Council suggests ThaQuarry has not satisfactorily addressed the Precinct Plan in relation to ESD and energy and water efficiency for the project buildings.<br>• The Department considers that the resource recovery component of the project is more than consistent with the principles of ESD.<br>• In addition, the Department notes ThaQuarry proposes to collect rainwater from the roofs of the buildings and reuse this water on site. Stormwater will also be reused on site.<br>• The Department does not consider any further information on recommended conditions of approval are required. | • No additional recommended conditions |
| Aboriginal Heritage | • McDonald 2005 provides the basis for assessment of Aboriginal heritage in the area, including the site. The 2005 study includes sensitivity mapping and a range of management measures for ensuring long-term protection of Aboriginal heritage.<br>• Three items of Aboriginal cultural significance have previously been recorded on the site and the site was mapped as containing areas of low, moderate and high sensitivity for Aboriginal heritage values<br>• Overall, impacts on heritage items would be minimal with restriction of works to areas of low and moderate sensitivity. In order to protect identified heritage items and areas of high sensitivity the Department has recommended a number | The Department recommends a number of conditions, including:<br>• an Aboriginal Heritage Management Plan, including a strategy for salvage of identified heritage items and supervision of works in areas of moderate sensitivity by an archaeologist;<br>• incorporation of measures to protect Aboriginal heritage values within the Conservation Management Strategy for the Cumberland Plain Woodland in the north-west of the site; and<br>• Compliance with the DECCW Clean Up Notice in relation to creek realignment works in the south-east of the site. |

| *Issue* | *Assessment* | *Recommendation* |
|---|---|---|
| | of conditions of approval. | |
| Compliance | The following works have been undertaken on the site without relevant approval:<br>• Construction of a weighbridge, shed and portable office. It is proposed that these structures will remain and form part of the project.<br>• Realignment of a tributary to Ropes Creek, located in the south-eastern part of the site. These works involved filling the natural creek line for 500m from the eastern to western site boundary and constructing a diversion trench around the perimeter of the site. These works do not form part of the project. DECCW issued a Clean Up Notice on 18 November 2008 requiring reinstatement of the natural creek line, filling of the diversion trench and reestablishing ground cover. Works associated with the Clean Up Notice were due for completion in December 2008.<br>• The recommended conditions would rectify compliance issues associated with the weighbridge. Compliance matters relating to creek realignment are being managed by the DECCW and do not form part of the project. | • ThaQuarry is required to obtain a building certificate from Council for the constructed weighbridge and associated shed and portable office. |
| Access to Tesrol / Sumy land | • Tesrol / Sumy, the landowner to the north –east of the site, (who are currently landlocked), suggested that the right of carriageway be made a public road.<br>• The Department notes nothing in the project application decreases Tesrol's existing access situation.<br>• Council recently approved a subdivision DA for Australand that will result in parts of the right of carriageway being replaced by public, Precinct Plan Roads. In addition, the Department became aware Tesrol and Australand entered into a private deed of agreement confirming delivery of an access road for Tesrol extending off Wonderland Drive.<br>• This is linked to the first development approval for a building on one of Australand's newly formed lots, thereby putting a timeframe for resolution of Tesrol's access issues from the south.<br>• Tesrol have an additional access problem immediately north of the project site. Two of Tesrol's land parcels are divided by ThaQuarry's 'sliver lot' – Lot 10 DP 241859. Tesrol currently have no legal access between those two lots.<br>• During the course of the assessment, it became evident that disposal to sewer was the preferred leachate management option for the Project.<br>• The future sewer line would be constructed through the sliver lot, and ThaQuarry needs access to Tesrol's land to do these works.<br>• Given there are significant environmental benefits gained by ensuring leachate is disposed to sewer, and Tesrol's access | To facilitate construction of the sewer and the future Precinct Plan Road, the Department requires ThaQuarry to grant access in favor of Tesrol/Sumy across the sliver lot in the north. |

| Issue | Assessment | Recommendation |
|---|---|---|
| | issue in the north may be addressed at the same time, the Department has recommended a condition to help facilitate the sewer being implemented and at the same time ensuring Tesrol have access across the sliver lot. | |
| Flora and Fauna | • The majority of the site is cleared and highly disturbed, however, some important ecological communities are located within the north-west and southern parts of the site, outside the operational areas of the project;<br>• The north-western part of the site contains approx 8.3ha of vegetation representative of Cumberland Plain Woodland, listed as an Endangered Ecological Community (EEC) under State and Commonwealth legislation along with potential habitat for a number of threatened species. This area is designated as a Conservation Area in the WSEA SEPP;<br>• Three isolated areas on the site support similar vegetation (collectively 2.83ha);<br>• The project would not result in the removal of any areas identified as EEC's and therefore, impacts on these communities would be minimal;<br>• Impacts on threatened or endangered flora and fauna species would be minimal;<br>• Some unauthorised creek realignment works were undertaken in Ropes Creek tributary riparian corridor which may have impacted the EEC identified in this area. The rectification of these works is currently being regulated by DECCW via a Clean Up Notice. No works would be undertaken in this area as part of the project.<br>• As no works would be undertaken in the areas identified as EEC's, ecological impacts would be minimal.<br>• ThaQuarry proposes to prepare a Vegetation Management Plan for the EEC in the north-west corner of the site. | • The Department requires all Endangered Ecological Communities identified on the site to be retained.<br>• The Department requires preparation and implementation of a Conservation Management Plan for the Cumberland Plain Woodland Endangered Ecological Community located in the north-west part of the site. The Plan must provide for long-term protection of this remnant community. |
| Odour & Greenhouse Gas | • Modelling of odour emissions indicated that the DECCW odour assessment criteria of 2 odour units (OU) would be met at the nearest residents.<br>• The assessment identified the potential for odour generation to change if the levels of biodegradable material received at the facility increases from that predicted. However, the proposal includes screening systems to ensure that biodegradable materials are intercepted and removed from the site.<br>• Irrespective, ThaQuarry proposes to apply a product aimed at minimising odour, called 'BioMagic'. The product would be applied to green waste stockpiles, composting products, the active tipping face and uncovered tipping areas.<br>• The effectiveness of 'BioMagic' in odour minimisation would be measured via | • ThaQuarry must comply with the Protection of the Environment Operations Act, 1997 in that they are not permitted to cause or emit offensive odour.<br>• ThaQuarry is required to minmise Scope 1, 2 and 3 Greenhouse Gas Emissions as part of the proposal.<br>• The Department also requires and Air Quality, Odour and Greenhouse Gas Management Plan describing detailed odour control measures, a monitoring program and triggers for remedial action.<br>• Implementation of these conditions along with the controls proposed by ThaQuarry would ensure that odour from the project is adequately minimised. |

| Issue | Assessment | Recommendation |
|---|---|---|
| | odour sampling during operation.<br>• The proposed landfill gas drainage system would also be monitored for methane and hydrogen sulphide (greenhouse gas) emissions which may generate odour. | |
| Vermin, Litter, Weeds, Feral Animals | • Numerous submissions from the general public raised concerns about the potential for increases in vermin, ibis, and disease carrying insects and pests as a result of the landfill.<br>• Blacktown Council indicated that the assessment did not include procedures for feral animal management as required by the Eastern Creek Precinct Plan;<br>• The potential for vermin, pests and feral animals is reduced by excluding putrescible waste from the site, and by operational practices such as covering the landfill with a thin layer of soil at the end of each day, and compacting materials to avoid spaces within the landfill where vermin and pests can reside;<br>• On-going management and monitoring is required in order to control vermin, pests and feral animals throughout the life of the landfill.<br>• The Department considers that vermin, pests and feral animals can be effectively managed such that they do not pose an environmental hazard or loss of amenity in the surrounding area. | The Department recommends that ThaQuarry:<br>• Implement suitable measures to prevent unnecessary proliferation of litter both on and off site;<br>• Inspect and clear the site and surrounding area, of litter on a daily basis.<br>• Implement measures to manage pests, vermin, feral animals and declared noxious weeds on site<br>• Inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin, feral animals or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in the surrounding area; and<br>• Perform ongoing monitoring of weed infestation on and adjoining the site. |
| Visual | • The visual catchment surrounding the site is varied, comprising commercial, industrial, rural and residential land uses, undeveloped land, waterways, vegetated areas and transport infrastructure.<br>• The edge of the quarry void is separated from sensitive land uses, such as residential by a distance of 490m screening vegetation and the landscaped buffer adjacent to the M4 Motorway.<br>• The Materials Processing Centre (13.55m high), workshop (8.76m high), administration building (7.09m high) and stockpiles (<10m high) may be visible from the adjacent Hanson facility and vacant land immediately to the south and west. Visual impacts on these areas are minor and are consistent with industrial land use.<br>• A visual barrier wall would be constructed along the north-west boundary of the site to a height of at least 10m, shielding the site from view from the stand of Cumberland Plain Woodland to the north-west.<br>• Existing earth berms on the north, west and southern boundaries would be reshaped to a height of at least 10m and vegetated, providing visual screening of stockpiles and some buildings.<br>• Components of the site would be lit, however light spill impacts would be unlikely to affect sensitive receivers. | • The height of all stockpiles on site must be less than the height of the berms located along the site boundaries;<br>• The Department requires site lighting to comply with Australian Standard *AS 4282 – Control of Obtrusive Effects of Outdoor Lighting*; and<br>• Signage and fencing requires further approval. |

| *Issue* | *Assessment* | *Recommendation* |
|---|---|---|
| Property Values | • Residents are concerned that property values in the adjoining residential areas have already, or will drop due to the stigma and potential environmental impacts associated with waste facilities.<br>• The Department considers that all the potential environmental impacts associated with the project have been addressed and any residual impacts can be effectively managed such that they do not pose an environmental hazard or loss of amenity in the surrounding area. | • No additional recommended conditions. |
| Community Consultation | • Whilst ThaQuarry undertook adequate consultation during the pre-exhibition and exhibition period, it was by no means extensive.<br>• The Department considers ThaQuarry should build an open and transparent relationship with the community and has recommended conditions of approval to help facilitate this relationship. | • ThaQuarry is required to keep the local community and relevant agencies informed about the operation and environmental performance of the project including making documentation relevant to the project available on their website. A community complaints system is also required. |

# 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.

# 6. CONCLUSION

The Department has assessed the project application, EA, submissions on the project and ThaQuarry's response to submissions, in accordance with the relevant statutory requirements.

The Department acknowledges there has been a great deal of community concern regarding the project. The Department has considered these concerns closely and undertaken a rigorous assessment of the project. As a result of this assessment, stringent conditions regulating the environmental performance of the project are in place. Conditions are also in place to facilitate an ongoing transparent flow of information regarding the project to the community.

This assessment has found that there is justifiable demand for the project, as it adds 14 million tonnes (40%) to Sydney's Class 2 (non putrescible) landfill capacity, and ensures there is a level sufficient to accommodate 20 years of demand.

Importantly, the project would also optimise the use of and rehabilitate a former quarry site. In rehabilitating the site over the long term, the project facilitates future employment generating development, meeting the strategic planning aims to ensure long term economic development and employment within Western Sydney.

The Department also recognises that the project has a number of significant socio-economic benefits, including a direct capital investment of over $36 million into the Western Sydney Employment Hub. Further, the project would promote recycling and assist in diverting waste away from landfill, which is consistent with the NSW Government's Waste Avoidance and Resource Recovery Strategy.

Together with a range of other recommended conditions to manage dust and other environmental impacts, the Department is satisfied that the project can be managed in accordance with applicable criteria and guidelines, and to an acceptable level of environmental performance.

On balance, the Department is satisfied that the project's benefits significantly outweigh any residual costs, and that it is in the public interest and should be approved, subject to conditions.

# 7. RECOMMENDATION

It is RECOMMENDED that 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).

Felicity Greenway
Senior Planner, MDA

**Signed**
Scott Jeffries
**A/Executive Director**

Chris Wilson
**A/Deputy Director General**

**Signed 20/10/09**
Sam Haddad
**Director- General**

# APPENDIX A: SUMMARY OF CONDITIONS OF APPROVAL

| Aspect | Condition | Requirement |
|---|---|---|
| Schedule 2: Administrative Conditions | | |
| *Limits on Approval* | 5 | Restricts materials received on site to 2 million tonnes per year |
| | 6 | Specifies that the project approval does not apply to areas of the site leased by Hanson. |
| Schedule 3: Specific Environmental Conditions | | |
| *Waste* | 1 | Limits materials that can be placed in landfill to 700,000 tonnes of non-putrescible waste per year. Excludes putrescible, hazardous, restricted waste (other than asbestos), liquid waste. . |
| | 1 | Limits stockpiles on site to 20,000 tonnes of green waste and 50 tonnes of tyres at one time. |
| | 2, 3 | Details requirements for screening of waste and appropriate management of asbestos. |
| | 4 | Specifies the materials that can be excluded from the landfill, i.e. recyclables. |
| | 5 | Requires a Waste Monitoring Program, prior to operation, to monitor the quantity, type, source and quality of wastes received and outputs produced at the site. |
| *Landfill Construction and Operation* | 6 | Details requirements for installation of a landfill liner, including submission and approval of the liner specifications prior to commencement of construction |
| | 7 | Requires implementation of slope stabilisation and risk control measures, prior to operation. |
| | 8 | Requires a Landfill Plan submitted within 12 months of operation and updated every 3 years detailing the landfill compaction strategy. |
| | 9 | Specifies requirements for daily cover of the active landfill area |
| *Leachate Management System* | 10 | Requires detailed design of the leachate management system to be submitted and approved prior to commencement of construction. |
| | 11 | Restricts waste being received on site until the leachate management system is constructed and a trade waste agreement with Sydney Water is in place for disposal of treated leachate. |
| *Windrow Management* | 12 | Describes requirements for windrow compositing operations, including compliance with Australian Standards and DECCW guidelines. |
| *Litter and Pest Control* | 13, 14 | Requirements for management of litter, pests, vermin, feral animals and noxious weeds. |
| *Security, Hazards/Risks* | 16 | Requires an Emergency and Fire Response Plan prepared in consultation with the NSW Fire Brigade, prior to commencement of construction. |
| *Sewer* | 18,19 | Requires disposal of wastewater to sewer and requires the design of the sewer to such that it does not preclude the orderly development of adjoining landowners (Tesrol) to the north. |
| *Soil, Water and Leachate Management* | 20 – 24, 27, 28 | Requires a Soil, Water and Leachate Management Plan including site water balance, erosion/sediment controls, stormwater management, monitoring program & response plan. |
| | 25, 26 | Describes requirements for implementation of the Precinct Plan Stormwater Scheme when it becomes available, and for contribution to Council for implementation of the scheme. |
| *Air, Odour and Greenhouse Gas* | 29,30 | Includes criteria for particulates and deposited dust and requirement to comply with the *Protection of the Environment Operations Act 1997* in relation to odour emissions. |
| | 31-34 | Requirements for dust control measures during construction and prior to operation. |
| | 36 | Requires an Air Quality, Odour and Greenhouse Gas Management Plan detailing monitoring and management actions for odour, dust and particulate impacts and landfill gas emissions. |
| *Noise* | 37-39 | Details noise limits, hours of operation; and requires a Noise Monitoring Program. |
| *Traffic, Transport and Access* | 41 | Specifies that use of Archbold Road to access the site is not permitted. |
| | 42 | Specifies that access should be via the public road system where available |
| | 43 | Specifies that access must be granted across the 'sliver' lot in favour of adjoining landowners, to help facilitate the construction of the sewer and future Precinct Plan Road |
| | 44-45 | Requirements for construction of the Precinct Plan road, within the operational area. Requires design, construction and dedication of the road, to the satisfaction of Council. |
| | 48 | Requires a contribution to the local road network, specifically the 'quarry / link road', the amount to be determined via an equitable and independently verified process |
| | 49, 50 | Requires contributions to the regional road network via a Planning Agreement, to a maximum value of $7,860,450, for works on Archbold, Wallgrove and Old Wallgrove Roads. |
| *Visual Amenity* | 53, 54, 55 | Requires design, construction and maintenance of visual screens and amenity berms for the duration of operations and limits the height of stockpiles such that they do not exceed the height of the berms. |
| *Flora and Fauna* | 57 | Requires protection of Cumberland Plan Woodland and Precinct Plan Conservation Areas. |
| | 59 | Requires a Landscape and Vegetation Management Plan prior to operation for restoration of riparian zones, planting of screening vegetation and management of Conservation Areas. |
| *Heritage* | 60 | Restricts disturbance of areas identified as high sensitivity for Aboriginal cultural heritage. |
| | 61 | Requires an Aboriginal Heritage Management Plan detailing measures to manage heritage items, supervision of construction works and consultation with Aboriginal stakeholders. |
| Schedule 4: Rehabilitation and Closure | | |
| *Final Landform,* | 1 | Details requirements for the final landform. |

| Aspect | Condition | Requirement |
|---|---|---|
| *Rehabilitation* | 2 | Requires a Rehabilitation and Closure Plan, within 3 years of operation commencing. |
| Schedule 5: Environmental Management, Reporting and Auditing | | |
| *Environmental Management* | 1-8 | Requires an Environmental Management Strategy, Annual Review and an Independent Environmental Audit. |
| Appendix 2: General Terms for the Planning Agreement | | |
| | - | Sets out the requirements for a Planning Agreement with the Minister detailing regional infrastructure contributions. |

# APPENDIX B: CONDITIONS OF APPROVAL

# APPENDIX C: CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

Section 75I (2) of the *Environmental Planning and Assessment Act 1979* requires that reference be made to the provisions of any environmental planning instrument that would (but for Part 3A of the Act) substantially govern the carrying out of the project. Consideration of the project in the context of the objectives and provisions of the relevant environmental planning instruments is provided below.

**State Environmental Planning Policy – Western Sydney Employment Area, 2009 (WSEA SEPP)**
The primary objectives of the WSEA SEPP are to protect and enhance land for employment purposes and provide for coordinated development of the WSEA. The project is consistent with the objectives of the SEPP as it would enable the site to support employment generating uses in the long term and it would assist in the coordinated development of the land; as the proposed infrastructure contribution is reasonable and appropriate for the proposed land use and demand placed on infrastructure.

**State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP)**
The Infrastructure SEPP commenced in January 2008, consolidating and updating a number of State planning instruments. Under clause 123 of the Infrastructure SEPP, when determining a development application for a landfill, a consent authority must take into consideration whether a justifiable demand exists for the landfill; whether the location of the development is consistent with regional planning strategies and locational principles of the EIS Guideline: Landfilling; and the views of relevant public authorities and councils responsible for the area from which the waste material is proposed to be sourced.

The Department has considered these matters in its assessment of the project and concluded that the project is consistent with the objectives of the Infrastructure SEPP.

**State Environmental Planning Policy No. 33 – Hazardous and Offensive Development**
SEPP 33 aims to identify proposed developments with the potential for significant off-site impacts, in terms of risk and/ or offence (odour, noise etc). A development is defined as potentially hazardous and/ or potentially offensive if, without mitigating measures in place, the development would have a significant risk and/ or offence impact, on off-site receptors. SEPP 33 was considered as part of the project. A number of hazard related conditions have been recommended in accordance with the provisions of the SEPP.

**State Environmental Planning Policy No. 55 – Remediation of Land**
SEPP 55 deals with the remediation of contaminated land. The EA indicates that the site is generally not contaminated. The Department is satisfied that the project can be undertaken and that the site is suitable for its intended use.

**Sydney Regional Environmental Plan No. 20 – Hawkesbury – Nepean River (No.2-1997)**
The REP applies to the site and has the aim to protect the Hawkesbury - Nepean River environment by ensuring the impacts of future land uses are considered. The planning polices and strategies relate to catchment management, environmentally sensitive areas, water quality, cultural heritage, fauna and flora, scenic quality, agriculture and related matters. The relevant matters have been given consideration and included in the project.

# APPENDIX D: PROPONENT'S RESPONSE TO SUBMISSIONS & PREFERRED PROJECT

# APPENDIX E: SUBMISSIONS