# PRELIMINARY ENVIRONMENTAL ASSESSMENT

## PROPOSED SAND QUARRY AND MATERIALS PROCESSING PLANT
## BLOODTREE ROAD and GEORGE DOWNS DRIVE
## KULNURA

Prepared for

**HANSON CONSTRUCTION MATERIALS PTY LTD**

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**by**


**planning workshop australia**

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Note: This document is preliminary unless it is approved by a Director of **planning workshop australia** Job No. 2071105

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# 1 PURPOSE OF REPORT

This report is submitted to the Minister for Planning and Director General of Planning to:

- apply, under **Section 75E** of the Environmental Planning and Assessment Act 1979 (EP&A Act), for the approval of the Minister to carry out development for the purposes of a Sand Quarry and Materials Processing Plant (the project) at Kulnura, Mangrove Mountain, in the City of Gosford Local Government Area; and

- provide a preliminary environmental assessment of the project; and

- request environmental assessment requirements for the project under **Section 75F** of the Act.

This preliminary report is presented in five sections:

- **Section 2** examines the Site and its Context;

- **Section 3** describes the details of the proposed development, including staging;

- **Section 4** addresses the Regulatory and Statutory Planning Instruments;

- **Section 5** addresses the Key Issues Likely to Arise; and

- **Section 6** addresses the Conclusion.

To assist in the preparation of the Environmental Assessment the following sub-consultants have been engaged:

| | |
|---|---|
| Geotechnical Assessment | Coffey Geosciences Pty Ltd |
| Hydrological Engineering | Coffey Geosciences Pty Ltd |
| Surface Water | Evans and Peck |
| Traffic, Transport and Parking | McLaren Traffic Engineers |
| Flora Assessment | Geoff Cunningham Natural Resource Consultants Pty Ltd |
| Fauna Assessment | Ecotone Ecological Consultants Pty Ltd |
| Aboriginal Archaeology Assessment | John Appleton-Archaeological Surveys & Reports Pty Ltd |

| | |
|---|---|
| Air Quality Assessment | Richard Heggie and Associates |
| Acoustic Assessment | Richard Heggie and Associates |
| Waste Management Assessment | To be confirmed |

# 2 THE SITE OF THE PROJECT AND ITS CONTEXT

## 2.1 Site Description

The site of the project is located on the western side of Bloodtree Road and George Downes Drive , Kulnura, Mangrove Mountain **(Figure 1),** in the City of Gosford Local Government Area, Parish of Kooree and County of Cumberland. Shown edged heavy pink on **Figure 2** and edged heavy blue on **Figure 3**. It has an area of approximately 150ha.

The property description is:

| | |
|---|---|
| Lots 1 and 3 | DP 571083 |
| Lots 5 and 6 | DP 755235 |
| Lots 1 and 2 | DP 729030 |
| Lot 1 | DP 392219 |
| Lot 68 | DP 661673 |
| Lot 1 | DP 569057 |

Part of the site is subject to easement for electricity. The lots affected are as follows:

Lot 1 DP 569057; Lots 1 and 3 DP 571083;

Lots 5 and 6 DP 755235; Lot 1 DP 392219; and

Lots 1 and 2 DP 729030.

This aspect is elaborated upon at **Section 5** below.

Lots 1 and 2 DP 729030 are subject to easements for water supply.

The south and eastern parts of the site are gently sloping with grades of 2%-5% to the north and west.

Regional road access to the site will be via the F3, Peats Ridge Road, Mangrove Mountain Road and George Downes Drive **(Figure 5).** Brief comments regarding traffic are contained in **Section 5.3** below.

## 2.2 Context

As shown on **Figure 3**, the site shares a common boundary with Hanson Hard Rock Quarry to the north and McPherson State Forest to the west**.** On its eastern boundary, it is intersected by 3 privately owned lots. Lot 681 DP 792384 is used for agricultural purposes. There is little, if any, agricultural activity on the other two lots. The lands beyond the southern boundary are in varying degrees of cleared agricultural activity. On the eastern side of Bloodtree Road opposite the site, the lands are under various forms of agricultural use.

## 2.3 Zoning

The site is zoned as set out in the following Table

| **Lot Nos.** | **DP Nos.** | **Zoning** | **Proposed Use Permissible/Prohibited** |
|---|---|---|---|
| Lots 1 and 3 | DP 571083 | 1(a) Rural (Agriculture) | Permissible |
| Lots 5 and 6 | DP 755235 | 1(a) Rural (Agriculture) | Permissible |
| Lots 1 and 2 | DP 729030 | 1(a) Rural (Agriculture) | Permissible |
| Lot 1 | DP 392219 | Part 1 (a) Rural (Agriculture) | Permissible |
| | | Part 7 (a) Conservation and Scenic Protection (Conservation) | Prohibited |
| Lot 68 | DP 661673 | 1(a) Rural (Agriculture) | Permissible |
| Lot 1 | DP 569057 | 1(a) Rural (Agriculture) | Permissible |
| | | Part 7 (a) Conservation and Scenic Protection (Conservation) | Prohibited |
| | | Part 7 (b) Conservation and Scenic Protection (Scenic Protection) | Permissible |

The zonings are pursuant to **Gosford Interim Development Order No. 122 (Figure 4)**. Discussion regarding zoning and permissibility is contained in **Section 4** below.

# 3 THE PROJECT

## 3.1 Project Justification

The principal grounds for justification of the project include the following:

- to ensure continuity of sand supply to Hanson's existing concrete plants, asphalt plants, and external customers both in the Sydney and Greater Sydney markets including the Central Coast, Illawarra, Blue Mountains, and Newcastle.

- need to commence annual production levels at 200,000tpa to replace the supply from PLDC at Penrith Lakes, which is anticipated to close around 2009.

- increase annual production to 400,000tpa to replace the supply from the Kurnell Peninsula as a result of continuing environmental concerns.

- increase annual production to 600,00tpa in-line with market growth over the duration of the quarry life. Based on these volumes the expected quarry life will be approximately 40 years.

- increase vertical integration of the Applicant's products, improve quality control.

- maintain local employment opportunities and job security for the Applicant's existing personnel at it's nearby Hard Rock Quarry, in downstream processes as well as at least 6 additional employment opportunities arising out of the project.

- maximising the use of the natural resource designated under the REP.

The Applicant has continually invested in the vertical integration of its business to develop a brand that is recognised as having the ability to **provide a continuous flow of added value products from winning the natural resource to the end product user**. Having operational control on the quality of material at each step in the process allows the Applicant to provide products of the highest merchantable quality and the backup support that customers are seeking. These factors are considered to be central to the Aims of the REP in Clause 2, particularly Clause 2 (a) and (d).

In order to ensure this vertical integration is sustained in the supply of the resources so as not to cause a disruption to the market relation to the existing sand supply

To ensure this vertical integration is sustainable, it is essential that the Applicant secure resources of construction sand. In this regard, the Applicant is currently, in part, reliant on the sand resources located at Penrith Lakes and the Kurnell peninsula. As indicated above, it is anticipated that the Penrith Lakes sand resource will be discontinued by 2009 with the supply of sand from the Kurnell peninsula being uncertain as a result of continuing environmental concerns. These two sources of construction sand will need

to be replaced with a resource and production facility that is capable of meeting the Applicant's current needs as well as having the capacity to grow in line with and meet the needs of the construction and building industry markets, respectively. It is considered that this last point is imperative to ensure that a shortage of the subject resource does not occur so as to cause disruption to a fragile industry that play such a key role in our society's sense of well being.

## 3.2 Description of Proposal

### 3.2.1 Extraction Operation

The site is located on Hawkesbury Sandstone on the western fall of the Hunter Range.

The scope of the resource within the proposed quarry extraction boundary has been preliminary assessed as containing reserves of approximately 24 million tonnes of sandstone. It is estimated that the reserves will yield approximately 20 million tonnes of sand products.

**Figure 5** shows the Preliminary Site Layout and the pattern of Staging and Phasing of extraction, which will generally move across the site from east to west. **Figure 6** shows the proposed Sand Processing and **Figure 7** the Water Balance.

The sand stone is variably weathered. The highly weathered areas are machine rip-able to 20-25m. In areas less weathered and more competent, drill and blasting operations will be conducted to win the sandstone material.

Ripped or blasted material will be loaded from the quarry floor onto dump trucks by front-end loader. The dump trucks will then travel to an overland conveyor, which will be located along the western side of the HV easement.

The overland conveyor will have several dump truck loading points which will progressively be added in-line with the quarry pit plan execution. Given the distances of more than one kilometre between the quarry face and the processing plant, the use of an overland conveyor is the most efficient method to transport material with minimal impact on the environment by minimising the use of diesel powered dump trucks and thereby reducing the emission of green house gases. By eliminating the long haul distance of dump trucks the use of an overland conveyor also eliminates the requirement of a water truck to suppress dust on a long stretch of road between the working quarry face and the processing plant. From an environmental planning perspective, this aspect of the project design means there will be a significant reduction in the water demand and in the green house gas emissions that would normally be associated with haul road dust suppression. It will also contribute to noise reduction.

### 3.2.2 Blasting Needs

As indicated above, drill and blasting operations will be conducted to win the sandstone material in areas less weathered and more competent. Blasting operations will be conducted in daytime. They will be in accordance with the relevant legislation. Good management is required between the financial costs of winning extractive materials and

environmental impacts associated with blasting. Blasting as a means of winning extraction material is the most efficient in terms of minimising impacts on the environment and costs by reducing the need for large numbers of diesel fuel machinery required to achieve equivalent quantity of rock and fragmentation. A single blasting operation can produce the equivalent amount of raw feed as a D11 dozer operating from 2-4 weeks. This will create a significant reduction in the amount of energy consumed and green house gases emitted.

### 3.2.3 DECC Air Overpressure (dB [Linear Peak]) Limits

Limits stipulated by DEC in licence conditions are well below levels known to cause any harm to human health. These conditions stipulate that the overpressure level from blasting at a quarry site must not exceed 115dB (Linear Peak) for more than 5% of the total number of blasts over a 12-month period; and, must not exceed 120dB (Linear Peak) at any time. These limitations apply at any point that is located at least 3.5m from any building or structure at any nearby residential property or other noise sensitive location such as a school or hospital.

### 3.2.4 DECC Ground Vibration (ppv) Limits

Limits stipulated by DEC in licence conditions are well below levels know to cause cosmetic damage. These conditions stipulate that ground vibration peak particle velocity from blasting at the quarry site must not exceed 5mm/s for more than 5% of the total number of blasts over a 12-month period; and must not exceed 10mm/s at any time.

These limitations apply at any point within the grounds of noise sensitive locations and within 30m of any residence or other noise sensitive location such as a school or hospital.

### 3.2.5 Processing Operation

The raw sandstone will be processed as shown in the flow chart shown on **Figure 6**.

The processing plant will be located on the site of the existing hard rock quarry on Lot 6 DP755235. This area is current being used as a surplus sale stockpile yard for the hard rock quarry.

The processing plant will incorporate a dry screen to separate the fine raw material from the oversized rock. The oversized rock will then be fed into a crusher for pulverising into a fine material. This material will then be sent back to the dry screen and the process repeated. The fine material removed from the dry screen will be washed with water in sumps. Debris and fines will be floated off the top of these sumps and sent to the plate press house for dewatering. Water required for the washing process will be introduced in sump 1 via a holding tank that draws rainwater supply from Dam F.

The sand is collected at the bottom of sump 1 and pumped to a manifold where the material is distributed to attrition cells. The material is withdrawn from the attrition cells using density recognition PLC controls. This material is then passed over a final screen where it is dewatered and sized accordingly. The sand is then conveyed to a stacker for final product stockpiling.

The water and fines from the final screens is sent to sump 2 where fines are separated and sent to the plate press for dewatering and the water is returned to the attrition cells. The plate press removes a sufficient amount of water from the tailings to produce a manageable "cake" product, which can be handled by loaders and transported safely for rehabilitation. The clean water removed from the plate pressing process is returned to sump 1 to be reused in the washing process. The use of the plate press technology removes the requirement for tailing dams and reduces the overall processing footprint.

### 3.2.6 Tailings Management

The use of modern dewatering technology such as plate presses creates a dry "cake" which is easy handled by mobile machinery and easily applied over the site in the rehabilitation process. The use of a dewatering press ensures that the site is not reliant on a large scale tailing dams system to settle out and separate the tailing fines from reusable water. This not only lessens the impact on the dewatering footprint, but also reduces the time required to produce a dry tailing product that can be used for the rehabilitation process.

### 3.2.7 Hours of Operation

The quarry processing plant, stockyard sales operations, and off-site transportation will be conducted 24 hours per day, 7 days per week. The quarry pit operations will generally be conducted during the hours of 7.00am to 6.00pm Monday to Friday and 7.00am to 4.00pm on Saturday.

### 3.2.8 Project Timetable

The project has **3** stages of extraction with **12** extraction phases. They are shown on **Figure 5**:

- ***Stage 1*** – Stage 1 has three phases. Phase 1 is in the north west corner of the site within Lot 1 DP 569057 with a proposed Conservation Area on its west and northern boundaries with McPherson State Forest. Phases 2 and 3 are east of the HV Transmission Line and bounded by Bloodtree Road to the east across part of Lot 1 DP 392219, Lot 3 DP 571083 and Lot 6 DP 755235. As shown on **Figure 7**, earth mounds are to be constructed for noise attenuation purposes.

- ***Stage 2*** – Stage 2 has six phases. Commencing west across Lot 68 DP 661673 then into part of Lot 1 DP 392219 (phases 1 and 2) to the eastern boundary of the HV Easement. An earth mound is to be constructed on the northern boundary of this section. Phases 3-6 are west of the Easement involving part of Lot 1 DP 392219 and part of Lot 1 569057.

- ***Stage 3*** - Stage 3 has three phases. It commences west of the HV Easement and is bounded by Broomfield Creek to the north and abuts Stage 1 Phase 1 on the

west. The proposed conservation Area is on the northern boundary. Phases 1-3 straddle the boundaries of Lot 1 DP 392219 and Lot 1 DP 569057.

## 3.3 Conservation Areas, Buffer Zones and HV Easement

As noted above, the site has an area of some 150ha. 100ha will be extracted. As shown on **Figure 5**, 20Ha will be dedicated as *Conservation Area* including:

- A Riparian corridor generally 150 metres wide along Bromfield Creek
- The aboriginal axe grinding grooves "Bromfield 1"
- A 50 metre corridor along the McPherson State forest

The remaining 30Ha will be used for the HV easement and quarry buffer zones. These are shown on **Figure 5**.

# 4 STATUTORY PLANNING INSTRUMENTS

## 4.1 Environmental Planning and Assessment Act (EP&A Act) 1979

4.1.1 *Application of Part 3A*

**Part 3A**, **Section 75B (1)** provides that Part 3A applies to the carrying out of development that has been declared under Section 75B to be a project to which Part 3A applies: *"(a) by a State environmental planning policy…"* .

4.1.2 *State Environmental Planning Policy (Major Projects) 2005 (SEPP 2005).*

The project satisfies the provisions of Schedule 1 Part 3A projects – classes of development Group 2 Extractive Industries.

## 4.2 Zoning and Permissibility

4.2.1 *Gosford Interim Development Order No. 122*

The site is zoned pursuant to **Gosford Interim Development Order No. 122** (the IDO) as shown on **(Figure 4)** and in the Table below.

| **Lot Nos.** | **DP Nos.** | **Zoning** | **Permissible/Prohibited** |
|---|---|---|---|
| Lots 1 and 3 | DP 571083 | 1(a) Rural (Agriculture) | Permissible |
| Lots 5 and 6 | DP 755235 | 1(a) Rural (Agriculture) | Permissible |
| Lots 1 and 2 | DP 729030 | 1(a) Rural (Agriculture) | Permissible |
| Lot 1 | DP 392219 | Part 1 (a) Rural (Agriculture) | Permissible |
| | | Part 7 (a) Conservation and Scenic Protection (Conservation) | Prohibited |
| Lot 68 | DP 661673 | 1(a) Rural (Agriculture) | Permissible |
| Lot 1 | DP 569057 | 1(a) Rural (Agriculture) | Permissible |
| | | Part 7 (a) Conservation and Scenic Protection | Prohibited |

| | | | |
|---|---|---|---|
| | | (Conservation) | |
| | | Part 7 (b) Conservation and Scenic Protection (Scenic Protection) | Permissible |

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

Notwithstanding the provisions of the IDO, under the provisions of **State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (**SEPP Extractive Industries**)** the proposed development is expressly permitted.

**Clause 7 (3**) provides that:

> *"Development for any of the purposes may be carried out with development consent*
>
> *(a) extractive industry on land on which development for the purposes of agriculture or industry may be carried out (with or without development consent),*
>
> *(b) extractive industry in any part of a waterway, an estuary in the coastal zone or coastal waters of the State that is not in an environmental conservation zone."* ***(our emphasis)***

Further, **Clause 7 (4)** provides for co-location of industry if extractive industry is being carried out on the land with development consent, development may also be carried out with development consent for the following purposes:

*'(a) the processing of extractive material,*

*(b) the processing of construction and demolition waste or of other material that is to be used as a substitute for extractive material,*

*(c) facilities for the processing or transport of extractive material,*

*(d) concrete works that produce only pre-mixed concrete or bitumen pre-mix or hot-mix.'*

In the case of any inconsistency with any local environmental planning instrument (including deemed instruments); the provisions of **SEPP Extractive Industries** in relation to permissibility and other provisions apply.

Thus, the application is permissible pursuant to the provisions of **SEPP Extractive Industries**.

## 4.4 Sydney Regional Environmental Plan No. 9 – Extractive Industry (No. 2 – 1995)

Further, the site and the project are subject to the provisions of Sydney Regional Environmental Plan No. 9 – Extractive Industry (No. 2 – 1995) (the REP). It is expressly identified in Item 6 - Division 4 in Schedule 1 to the REP. Clause 2(b) provides: *"to permit, with the consent of the Council, development for the purpose of extractive industries on land described in Schedule 1…"*

# 5 KEY ISSUES

Our preliminary assessment of the project concludes that it complies with the relevant provisions of the IDO, the SEPP (Major Projects), the SEPP (Extractive Industries) and the REP.

We understand that the Department has not yet issued Guidelines for the preparation of Environmental Assessments for projects that fall under Schedule 1 Group 2 Extractive Industries. However, we have considered the project and identified the following matters as being, in our view, likely Key Issues:

## 5.1 Services

### 5.1.1 HV Easement

As shown on **Figures** 2 and 5, the following lots are burdened with a 60 metre wide easement for the transmission of electricity:

Lots 1/571083, 5-6/755235, 1/569057, 1/392219

It should be noted that the electricity transmission line also cross Lot 2/729030, for which there no applicable easement is benefiting TransGrid.

TransGrid are the controllers of the electricity infrastructure for which the easement benefits. TransGrid have provided Hanson with a set of requirements for quarry operations within the easement. Hanson is confident that these requirements can be meet to the satisfaction of TransGrid.

The use of an overland conveyor also provides TransGrid employees and contractors who access the easement with a safer work environment by removing exposure to dump trucks travelling adjacent to the entire length of the easement. Quarry vehicles will only be allowed to cross the easement at designated easement crossings. The crossings will be fenced off as per TransGrid requirements, and vehicle height control devices will be placed on either side of the easement crossing to ensure no over height vehicle can enter the easement.

### 5.1.2 Power

Power required to operate the processing plant at maximum production output is estimated at 600kW per hour. The plant will be connected to existing 415V power current being supplied to the hard rock processing plant, which is being supplied with 11KvA.

## 5.2 Water and Wastewater

Comprehensive Hydrological and Surface Water and Groundwater Assessments are being carried out as part of the EA.

The water required to operate the processing plant will be drawn from rainwater collected in Dam F from where it will be pumped to a holding tank and recirculated through the washing process. The proposed water balance for the project site is shown in **Figure 7**. The adopting of the plate press technology will mean no wastewater generated in the washing process will be discharged to tailing dams on the project site. As referred to in **Section 3** above, the use of an overland conveyor will significantly reduce the amount of water required to water the haul roads to suppress the dust.

Existing Hanson employees from the adjoining Hard Rock Quarry will operate the site. Employees will continue to use existing office and amenity facilities located on the hard rock quarry site. There will be no additional environmental impacts arising from the project for sewer and water supply needs for human consumption.

## 5.3 Traffic and Parking

A comprehensive Transport and Traffic Assessment is being undertaken as part of the EA.

As indicated on **Figure 5**, the proposed sand stockpile sales yard will be located adjacent to the existing hard rock quarry's sale yard. This will allow trucks to enter and exist via the existing internal road system of the hard rock quarry. There will be no change to the hours of transportation whether sand or hard rock aggregates are being transported from the site. The sand quarry will use the existing weighbridge of the hard rock quarry.

Trucks will continue to exit the hard rock quarry and travel to the F3 via George Downes Drive and Peats Ridge Road. The average number of trucks entering and leaving the site would increase by:

| | |
|---|---|
| Annual production of 200,000tpa | 23 trucks per day on average |
| Annual production of 400,000tpa | 46 trucks per day on average |
| Annual production of 600,000tpa | 70 trucks per day on average |

The Preliminary Traffic and Parking Assessment indicate that the existing traffic volumes adjacent to the site are as follows:

F3 Motorway – Sate Road – in excess of 70,000 vehicles per day.

Peats Ridge Road – Regional/Collector – 3,260 vehicles/day (2001);

George Downes Drive – Collector – 2,150 vehicles/day (2001).

In relation to Car Parking requirements, the Preliminary Assessment notes that Gosford Development Control Plan No. 111 Car Parking does not specify a parking rate for quarry operations. Thus, parking for visitors and staff who need to park will be based on a first principles assessment of likely demand. Adequate truck queuing/storage will be provided on-site clear of any influence with the frontage to the public road.

It is concluded that, given George Downes Drive and Peats Ridge Road are "Collector" roads for the F3, then, based on the calculations of the percentage increase in traffic volumes (using 2001 base traffic flow data) of 1%-3% on George Downes Drive, 0.7% to 2% on Peats Ridge Road and negligible for the F3, they have sufficient capacity to accept the increased traffic movements which will be ranging from between 23-70.

## 5.4 Noise

A comprehensive Noise Assessment is being carried out as part of the EA.

To mitigate the effects of noise from quarry pit activities, noise barriers in the form of earth bunds will placed between the source of noise and affected receivers. It is anticipated that these noise barriers will remain in place until quarrying activities are sufficiently below the existing natural terrain. At this point, it is considered that the earth bunds will become redundant. It is our view that the use of the overland conveyor will also ensure that the impact from noise will be further minimised through the reduction in the number of dump trucks required and in particular, the elimination of long hauls from quarry pit to processing plant as shown in the design principles in **Figures 5** and **6**.

The processing plant will be located as far away from receivers as possible. It is proposed to locate the plant adjacent to the hard rock sales yard. The major noise emitting equipment used in the process plant is the sizing screen and the crusher. As shown in **Figure 7** it is proposed to enclose the sizing screen and crusher in a building to confine the emission of noise and dust.

The sand products stockpile area will be located adjacent to the hard rock quarry sales yard. The front end loaders currently used to load hard rock aggregates into road trucks will also be used to load the sand products into road trucks. It is anticipated that noise due to stockpile yard sales activity will not significantly increase from current conditions. This conclusion is expected to be confirmed in the forthcoming Noise Assessment.

## 5.5 Air Quality and Dust

A comprehensive Air Quality Assessment is being carried out as part of the EA.

The noise mitigation measures that will be adopted also provide and contribute mitigation against the impacts of dust. The use of earth bunds for noise mitigation also provides the added benefit in preventing dust transmission. The use of the overland conveyor significantly reduces the potential to emit dust by eliminating the need for dump trucks to travel the long distance between the quarry pit and the processing plant.

The sand processing plant has the potential to emit dust primarily from two sources. The sizing screen and crusher process the raw feed in its dry form. Therefore there exist the potential for dust to be emitted during these processes. By enclosing the sizing screen and the crusher within a building the potential to emit dust is eliminated.

## 5.6 Flora and Fauna

The Environmental Assessment will include comprehensive Flora and Fauna Assessments that will consider in detail the respective Flora and Fauna Species and Habitat issues under the relevant State and Commonwealth legislation. The Assessments will map locations of any species and habitats will review the impacts, if any, of the project on the Flora and Fauna Species and the habitats. They will contain assessments and any necessary recommendations for any mitigation measures that may be required.

## 5.7 Heritage

### 5.7.1 Aboriginal

A comprehensive study of the archaeological Indigenous culture significance of the project site has been completed. John Appleton, Archaeological Surveys and Reports Pty Ltd were commissioned, with the assistance of the Darkinjung Local Aboriginal Land Council, to conduct a study within the project site. The study identified a site comprising two axe-grinding grooves, which have been recorded as Bromfield 1. The report on the study recommended that a 30metre buffer zone be created around Bromfield 1. Hanson has complied with this recommendation as shown in **Figure 5**.

### 5.7.2 European

There are no items of environmental heritage situated on the land or in the vicinity.

## 5.8 Visual Impact

As shown on **Figure** 8, the site is located within the Kulnura-Somersby Plateau Geographic Unit in Gosford Development Control Plan No. 89 SCENIC QUALITY (the DCP). The Environmental Assessment will include consideration of the provisions of the DCP in relation to any visual impact matters that may arise as a result of the project.

## 5.9 Social Issues

For the reasons given in **Section 3**, it is considered that the project will both provide and offer job security to the existing employees of the Hard Rock Quarry as well as at least 6 new job opportunities. Local employment opportunities are a very important consideration for nearby communities. Employment generating projects make significant contributions to the well being of small businesses in the localities.

The Applicant's approach to workplace safety will apply to the operation of the project. Thus, local employment availability and safety will be addressed in the EA.

In addition to the above matters, the securing and provision of the resource and rendering its continuing availability to the Construction and Housing Industries in the Sydney Region is a key Aim of the REP. Further, the accessibility and assured availability of the resource is considered to be an important and significant positive social outcome.

## 5.10 Economic Issues

The Environmental Assessment will consider the current market demand for the resource in the local and regional context. It will also consider the negative effects on the Construction and Building Industries in the event of the non availability of the resource. Further, the economic issues in respect of the provision of local employment opportunities will also be considered in the EA.

## 5.11 Cumulative Impacts

With regard to cumulative impacts, Planning Workshop Australia will assess the abovementioned issues and the advantages and disadvantages of the project, having regard to the relevant legislative and statutory planning requirements, any identified impacts and recommended mitigation measures.

# 6 CONCLUSION

Based on this preliminary assessment, it is considered that the project is consistent with the relevant statutory provisions.

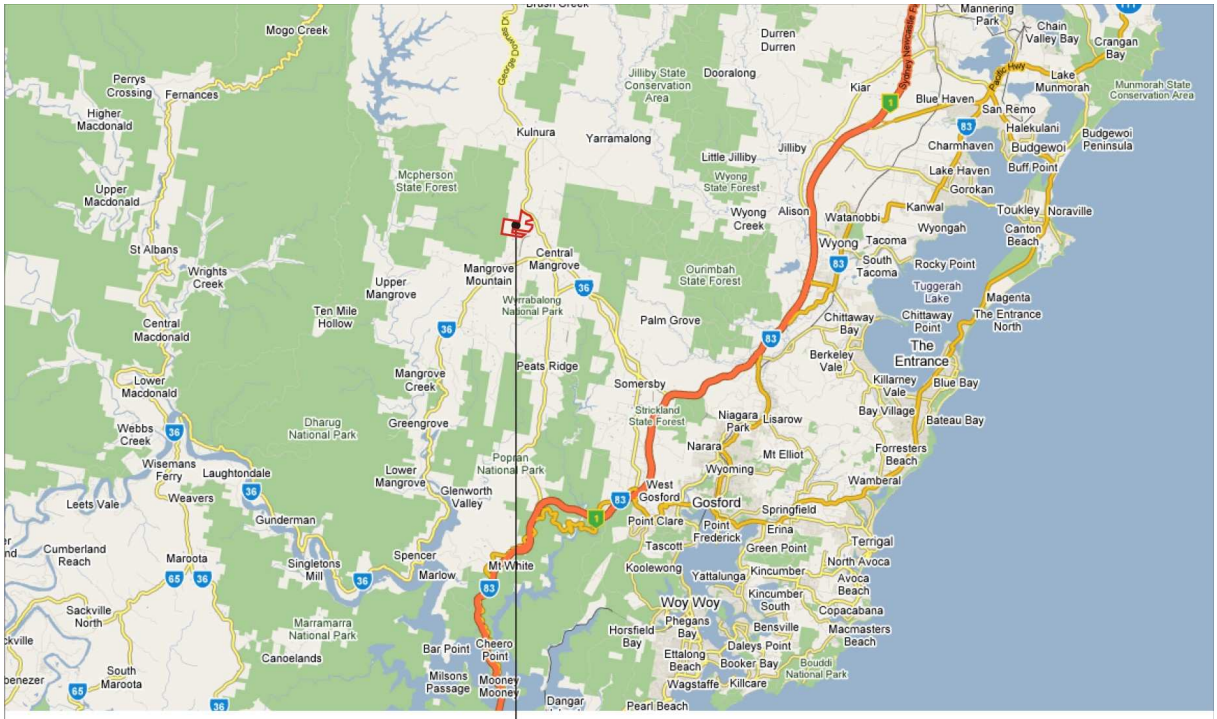
It is considered that the project is both suitable and appropriate for the site within its context and that it will not have any significant adverse environmental impacts.

It is considered that the project will have important and significant economic and social outcomes for the locality and for the Region.

The salient points in this assessment are summarised below:

- The project is permissible under the relevant provisions of the IDO, SEPP (Major Projects), SEPP (Extractive Industries) and the REP;
- The site is highly accessible to the existing road infrastructure;
- The project will not place any significant increase in demand on existing services;
- The project is being designed to have regard to Flora and Fauna matters;
- The project will both maintain and increase local employment opportunities.
- The site has no physical constraints that, subject to efficient design, good engineering practice and management would preclude the project.

In accordance with **Section 75F** of the Act, the Department is requested to provide Director General Requirements for the Environmental Assessment for the project.





Kulnura Sand Quarry - Kulnura

**LOCATION**

0 1000 m

prepared by planning workshop australia
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issued 9 Nov 07

**Fig 1**

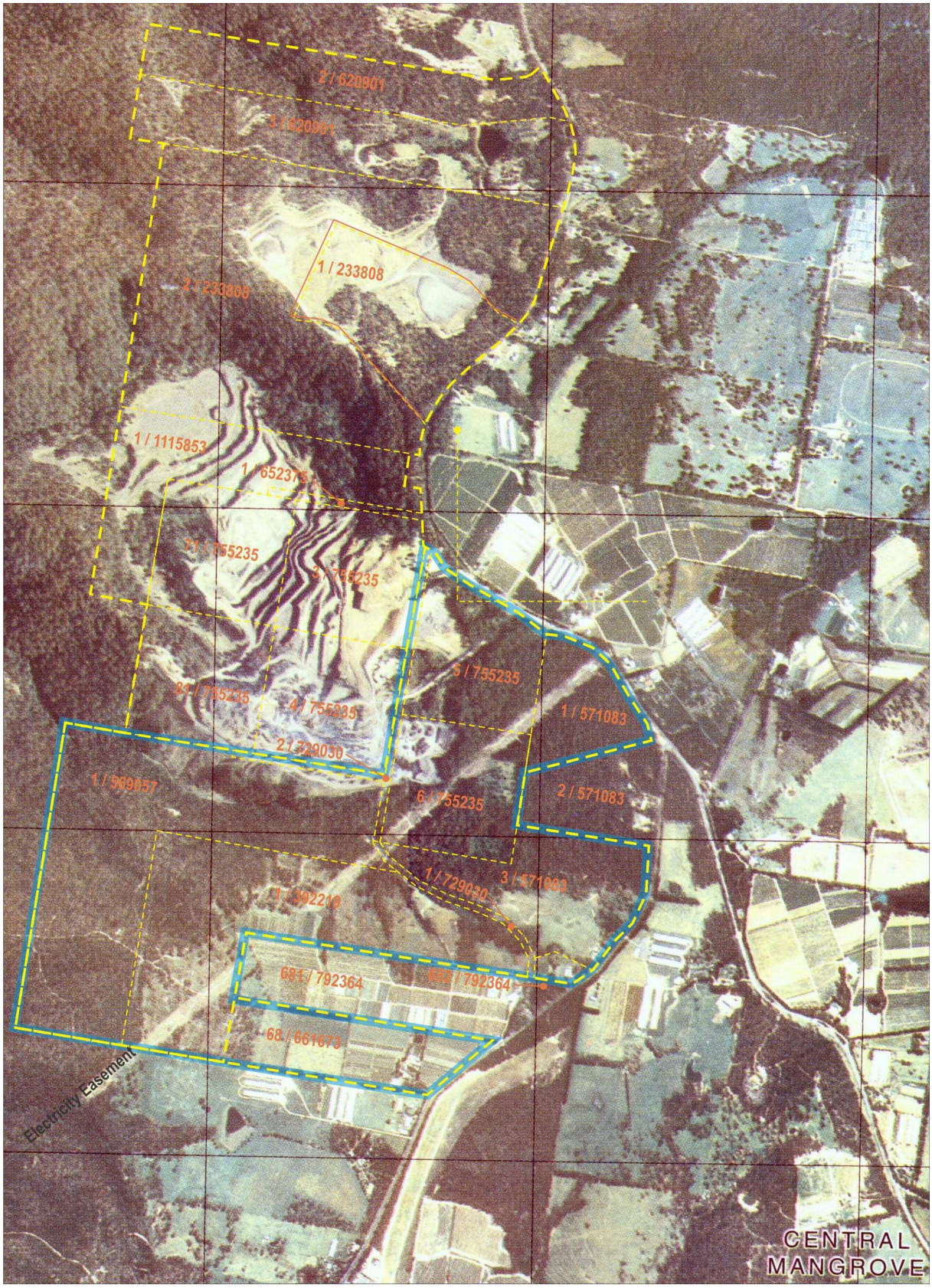

Kulnura Sand Quarry - Kulnura

**SITE - Lots and Deposited Plans**

0 250 m

prepared by planning workshop australia
2071105\graphics\ds-fig 1-8.cdr issued 9 Nov 07

Fig 2




Kulnura Sand Quarry - Kulnura

**AERIAL PHOTOGRAPH**

0 250 m

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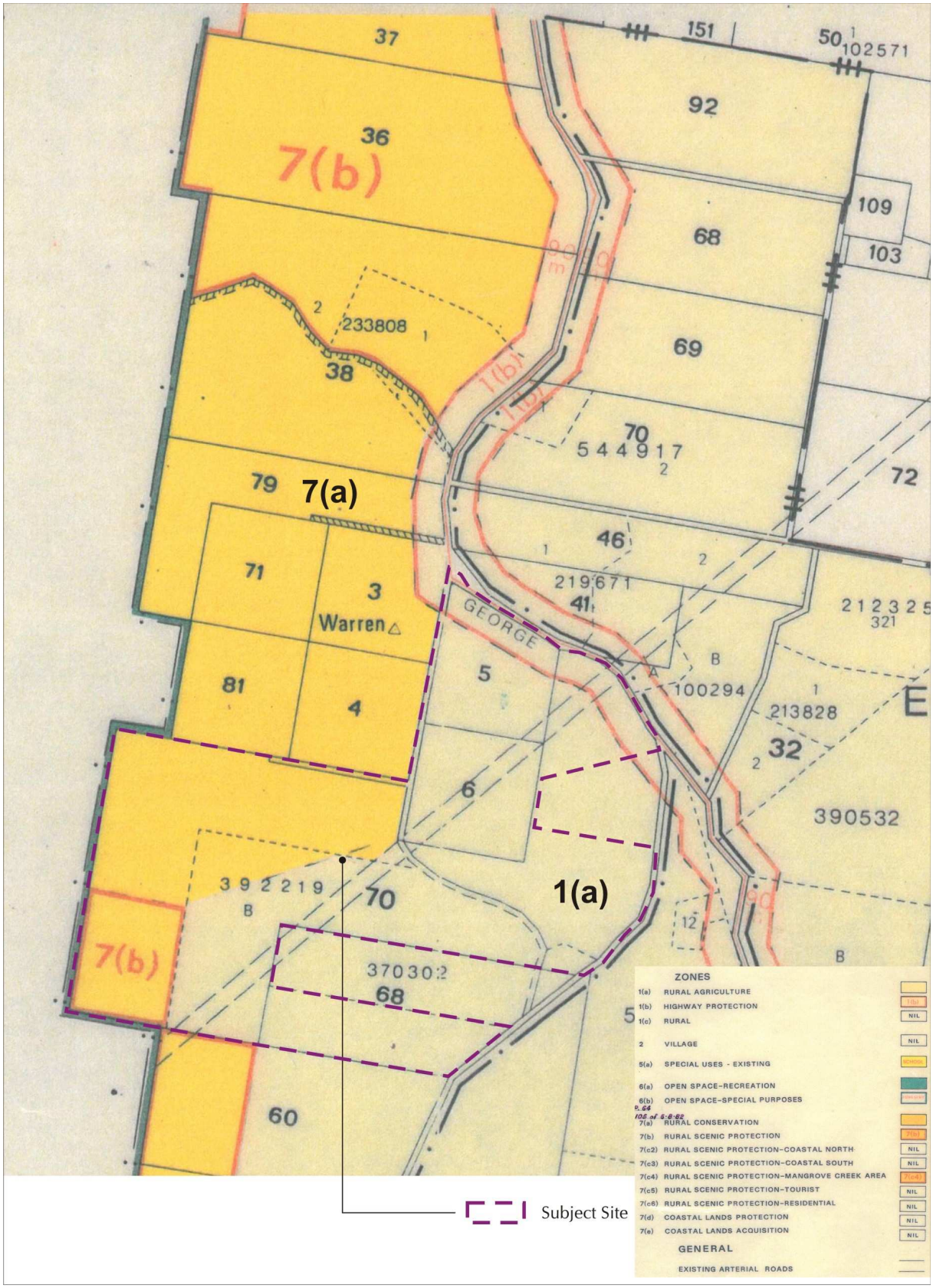
2071105\graphics\ds-fig 1-8.cdr issued 9 Nov 07

Fig 3




Kulnura Sand Quarry - Kulnura

**ZONING - Gosford IDO No. 122**

0 500 m

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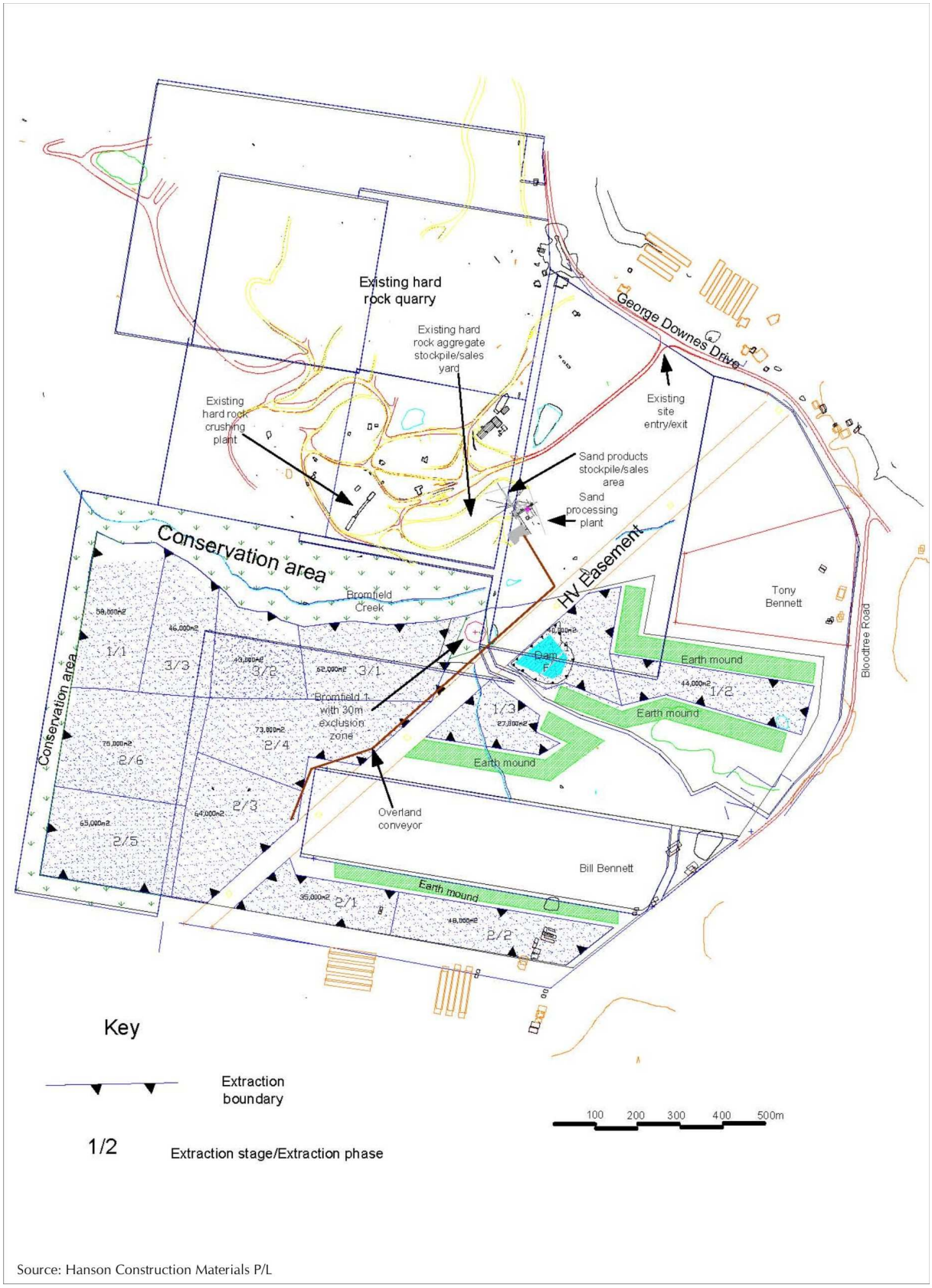
**Fig 4**




Source: Hanson Construction Materials P/L

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**PRELIMINARY SITE LAYOUT**

0 250 m

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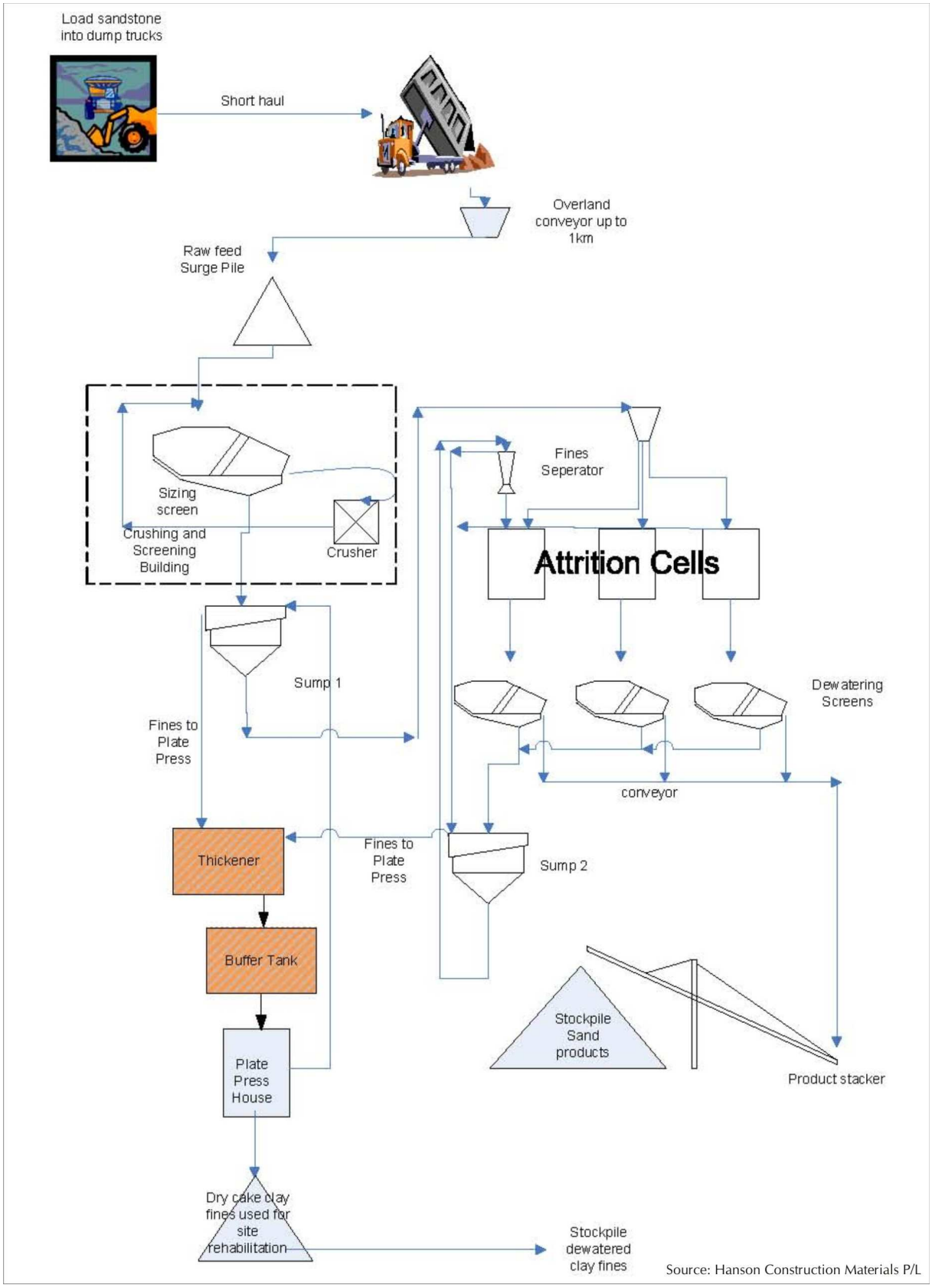
**Fig 5**

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**SAND PROCESSING FLOWCHART**

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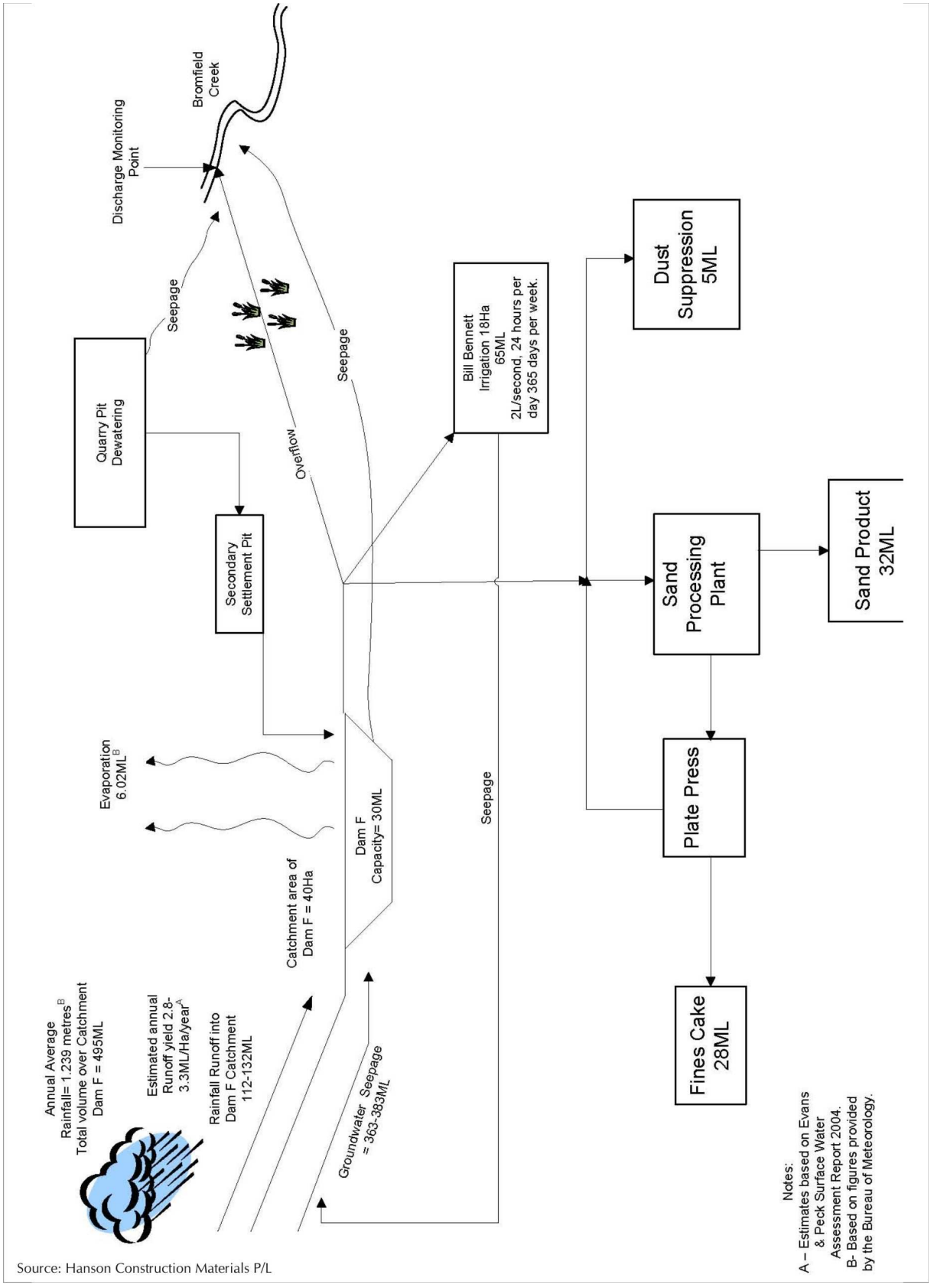
**Fig 6**

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**WATER BALANCE MODEL**

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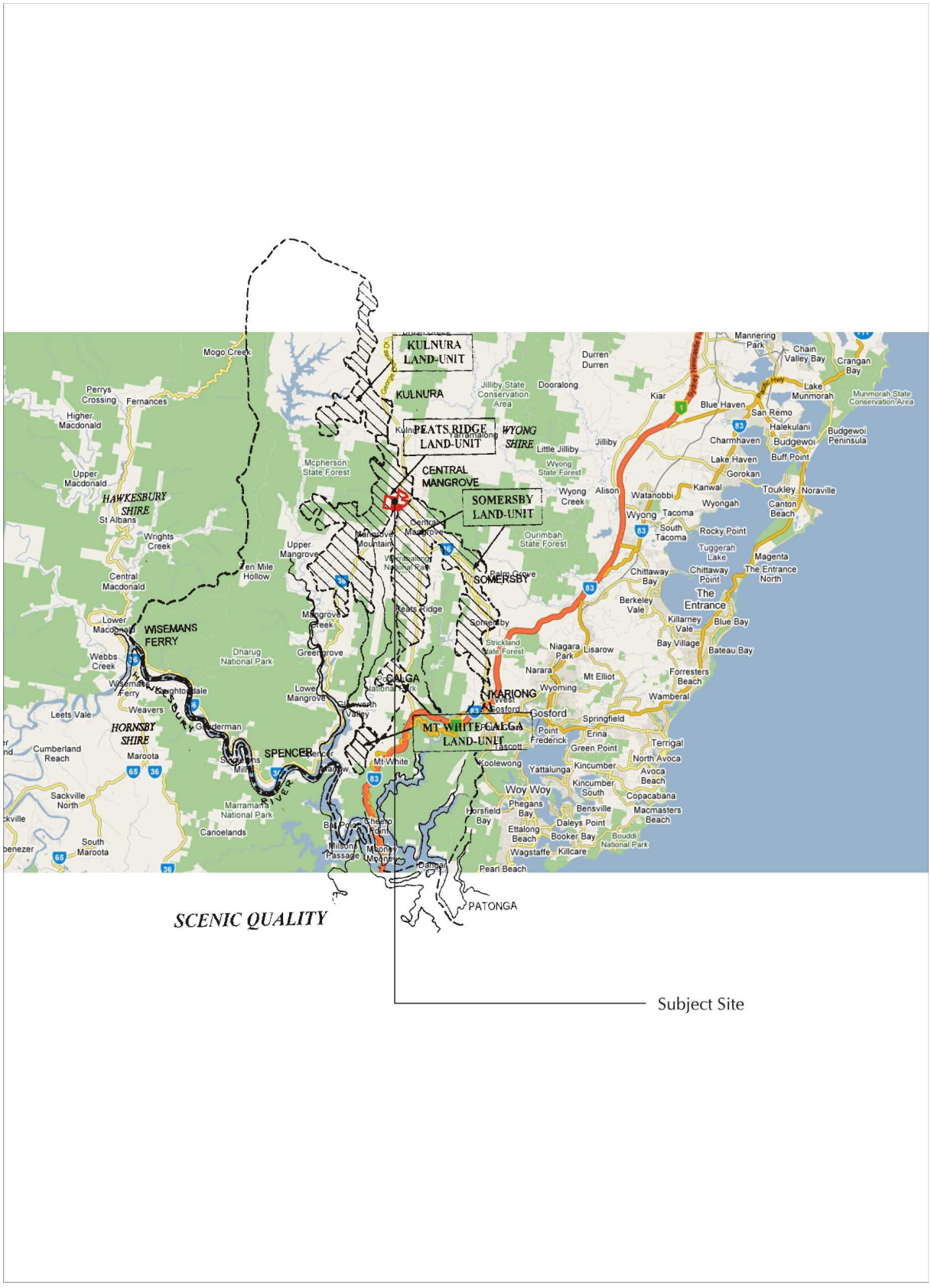
**Fig 7**




Kulnura Sand Quarry - Kulnura

**SCENIC QUALITY, PEATS RIDGE LAND-UNIT - Gosford DCP No.89**

0 10 km

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Fig 8