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14 February 2007

Project No. 00006511

PROPOSED ASPHALT PLANT

Lots 14 & 15 Kennington Drive
TOMAGO NSW

PRELIMINARY ENVIRONMENTAL ASSESSMENT

Prepared for

TROPIC ASPHALT

1 Executive Summary

- The proposal is an asphalt plant located in Tomago. The site is located in a new industrial subdivision and is within the Tomago Alumunium buffer zone.
- The asphalt plant will be the only asphalt plant in the Port Stephens shire and will be able to utilise up to 30% recycled asphalt product.
- The proposed maximum hourly capacity is 150t/hr and the average annual production is 75000t/annum.
- Due to the proposed production capacity, the plant is considered 'designated development' under the Environmental Planning & Assessment Regulation (2000) (Part 5 Bitumen pre-mix and hot-mix industries).
- The plant is located within the 'coastal zone' as defined by the Coastal Protection Act 1979.
- As the project is 'designated development' and within the 'coastal zone', it meets the 'major project' criteria under Schedule 2 of State Environmental Planing Policy (Major Projects) 2005 and therefore is to be assessed under Part 3A of the Environmental Planning & Assessment Act 1979, with the Minister as the consent authority.
- Key environmental issues for the proposed plant are:- noise, traffic, air quality, water quality and soil. These issues have been investigated and measures have been identified at this preliminary stage to minimise any adverse effects the plant may generate.

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3 Introduction

3.1 Background

The proposed project is an asphalt plant located in a new industrial estate off Old Punt Road, Tomago. The plant is within the Tomago Aluminium Buffer Zone. Tomago is part of Port Stephens Shire and there is no existing asphalt plant within Port Stephens Shire. The nearest plants are Carrington to the south, Rutherford and Black Hill to the west, and Taree to the distant north.

3.2 The Proponent

The proponent currently operates an existing asphalt laying business. The business services federal, state and local government, as well as the private sector, in the supply of maintenance and construction services for roads. The proposed plant has been sized to supply product to that business and is of sufficient size to support growth of that business.

3.3 Justification

The selection of the preferred plant arrangement, process and site can be justified as follows:-

- The site that has been chosen is located in a large industrial zoning, within the Tomago Aluminium Smelter buffer zone, and in this context will have negligible impact upon residential areas. There is a single residential dwelling 600 m north of the site. The closest residential cluster is the mobile home park (Tomago Village Van Park) approximately 800m south. The nearest residential subdivision is in Tarro, approximately 3.5km to the west
- There exists no asphalt plant within the Port Stephens Shire. Currently, the closest plant is in the Newcastle local government area. The location of the proposed plant will more conveniently service the demand within Port Stephens Shire.

- Additionally, the close proximity to the Pacific Highway will allow greater access to markets further north, an area currently serviced from Rutherford, Newcastle or Taree.
- The site is located close to sources of aggregate, with quarries at Brandy Hill, Seaham and Paterson.
- The plant is located in an area that is able to provide a suitable labour force, without the need for long travelling times.
- A traffic study confirmed that there is negligible impact to surrounding roads due to the presence of this plant.
- The economic and environmental sustainability of this plant is enhanced by its ability to utilise Recycled Asphaltic Product (RAP) and the determination of the Principal to develop a plant that can utilise RAP was a key objective. An environmental cost of not developing this plant would be the increased quantities of RAP that would be disposed to landfill at substantial economic and environmental disadvantage to the broad community. Alternatively, the product could be transported to plants in Sydney that can utilise RAP, however this would increase transport costs and generate increased traffic congestion.

3.4 Objectives

The objectives of the proposed asphalt plant are:

- to provide a proximate source of asphalt for the Port Stephens area
- to supply the proponents existing asphalt laying business operations
- to provide employment to Tomago and surrounding area
- to provide a means for the recycling of reclaimed asphaltic product
- to minimise and manage any deleterious environmental effects which may arise as a result of the construction of the asphalt plant

3.5 Alternatives Considered

The volume of asphalt purchased by Tropic Asphalt warrants the investment in an asphalt plant to service their current market and to accommodate the growth of that market.

Two other locations were considered as potential sites for the asphalt plant: a mine site in Teralba and an industrial block in Toronto. Both sites were considered too

close to an existing asphalt plant. The site chosen has the advantage of potential to service the Port Stephens area and areas north.

4 Project Description

4.1 Location

The proposed location is at Tomago, northwest of Newcastle, in the new industrial subdivision 'Hunter Industrial Park'. The site address is Lots 14 & 15 Kennington Drive, Tomago, with the real property description being Lots 14 & 15, DP 104 3561, Parish of Stockton, County of Gloucester.

The site has been cleared during subdivision and is now flat grassland.

Perusing the location plan in Figure 1 on the proceeding page, it can be seen that the site is located close to the Pacific Highway, with Kennington Drive accessed from the highway by travelling east on Tomago Road and then north along Old Punt Road, or simply south along Old Punt Road, with the former route being the most likely.

Landmarks and properties of note in the area include Tomago Aluminium Smelter to the east, Tomago Village Van Park to the south and a residence to the north

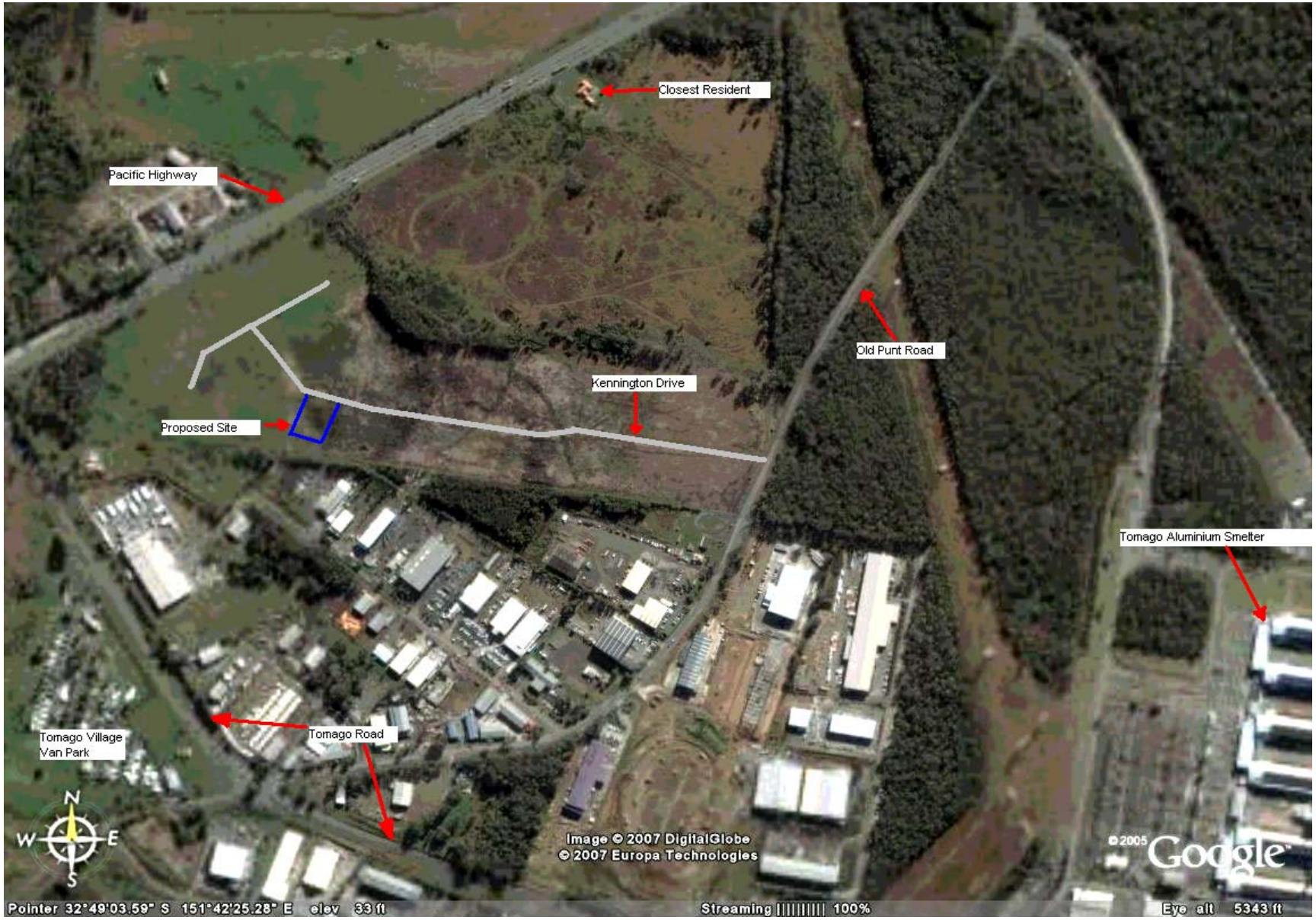


Figure 1 :- Proposed Location and surrounding features

4.2 Plant Details

A preliminary schematic of the proposed asphalt plant can be found in Drawing 1 Appendix A.

- The bitumen is delivered to the plant in tankers and pumped into the bitumen storage tanks within a bunded area.
- Aggregate from various local sources, would be transported to the site by truck. RAP, recovered largely from the proponent's construction sites, delivered to the plant by truck and de-aggregated with a shredder.
- Trucks will unload into a receival hopper, slowly ('dribble') feeding at the capacity of the reclaim conveyor. Product will be conveyed to the appropriate storage bin via a semi-enclosed radial stacker.
- Lime is delivered by truck and fed into the lime storage bin by pumping.
- When required, the aggregate will be conveyed from the storage bins to the process plant via a semi-enclosed conveyor. RAP will be reclaimed by a small front-end loader to a feed conveyor to either the dryer or the pugmill.
- The primary components of this plant are: -
    - A dryer, bitumen kettle, batch tower (screen, hot aggregate storage bins and pugmill) and hot asphalt storage bins
- The secondary components of this plant are: -
    - An energy source, baghouse, exhaust stack, dust and lime storage bins, a means of conveying product between plant components, RAP storage, bitumen storage, aggregate storage, laboratory, office, and workshop
- The process component of this plant is a proprietary, self-contained plant. The plant process is as described below: -
    - The cold aggregate is fed into the dryer, which heats the aggregate, removing any residual moisture. RAP may be fed into the dryer partway along its length or directly to the pugmill.
    - The dust exhaust from the combustion process in the dryer is cleaned by a baghouse, where any dust particles are removed. Any dust collected is fed to the screen deck or directly to the pugmill for recycling.
    - The heated aggregate from the dryer is elevated to the screen deck where it is sized and fed into hot aggregate storage bins. The

aggregate is weighed from selected hot aggregate bins into the pugmill, where it is mixed with bitumen, lime filler and dust,

- The mixed asphalt is either loaded directly to trucks, or stored for short periods of time in the hot asphalt storage bins and then loaded to trucks.

- The following production capacities are anticipated:-
  Maximum hourly capacity:- 150t/hr
  Typical daily output:- 200t - 500t/day
  Peak daily capacity (8 hrs):- 1000t/day
  24 hour peak capacity:- 1500t
  Average annual production:- 75000 t (range 50000t -125000t)

5 Relevant Planning Provisions

The following planning instruments are applicable to the project:-

- Environmental Planning & Assessment Regulation 2000
- State Environmental Planning Policy (Major Projects) 2005
- State Environmental Planning Policy No. 71 – Coastal Protection
- State Environmental Planning Policy No.33 – Hazardous & Offensive Developments
- Environmental Planning & Assessment Act 1979
- Hunter Regional Environmental Plan 1989
- Port Stephens Local Environmental Plan 2000
- Protection of the Environment Operations Act 1997

The relevant provisions of each instrument are outlined below.

5.1 Environmental Planning & Assessment Regulation 2000

Schedule 3 of this planning instrument outlines those developments that are classified 'designated development'. The proposed asphalt plant meets the criteria for designated development under Part 5 'Bitumen pre-mix and hot-mix industries':-

1) *Bitumen premix or hot-mix industries (being industries in which crushed or ground rock is mixed with bituminous materials):*

   (a) that have an intended production capacity of more than 150 tonnes per day or 30,000 tonnes per year

5.2 State Environmental Planning Policies

5.2.1 SEPP (Major Projects) 2005

Schedule 2 of this planning instrument outlines 'specific sites' which trigger assessment under Part 3A of the Environmental Planning & Assessment Act 1979, for which the Minister will be the consent authority.

Part 1 of schedule 2 states

1) *Development within the coastal zone for any of the following purposes: (e) the following types of industries (other than mining or extractive industries) but only if they are:*

   (i) designated development, and

   (ii) in the case of the metropolitan coastal zone—wholly or partly in a sensitive coastal location:

   bitumen pre-mix industries

coastal zone means the coastal zone within the meaning of the *Coastal Protection Act 1979*

The Coastal Protection Act provides maps outlining the areas that are classified as within the coastal zone. Figure 2 on the proceeding page shows that the proposed location falls within the coastal zone.

As outlined in Section 5.1 of this report, the project is classified 'designated development' and therefore meets the criteria of Schedule 2, Part 1 of SEPP (Major Projects)

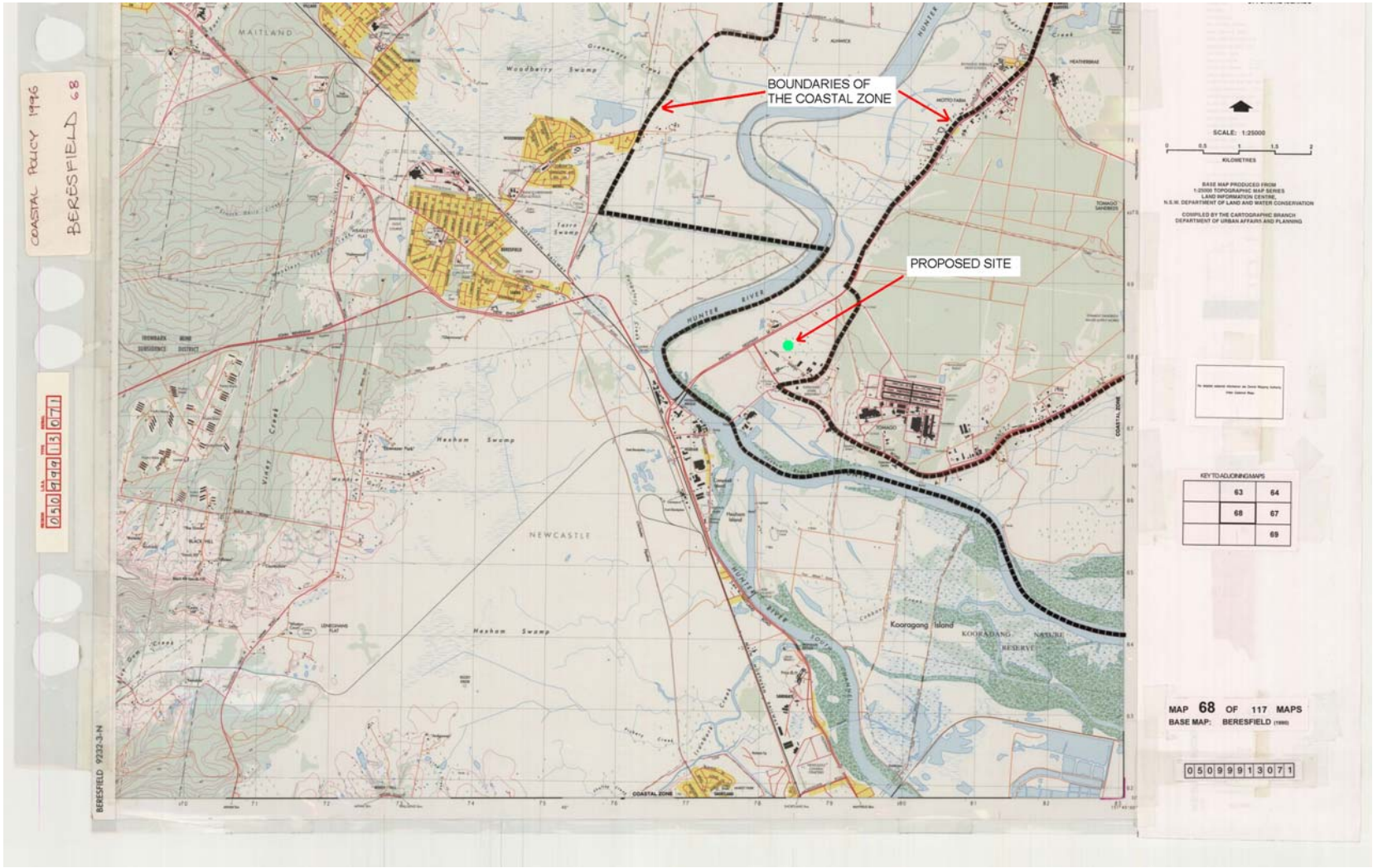


Figure 2 :- Coastal Zone Delineation

5.2.2 SEPP 71 (Coastal Protection)

This policy applies to those projects undertaken in the 'coastal zone' as defined in section 5.2.1 and Figure 2 of this report:-

1) *This Policy applies to land the whole or any part of which is within the coastal zone, except as provided by this clause.*

(2) This Policy does not apply to:

(a) Lord Howe Island, or

(b) in relation to State Environmental Planning Policy No 62—Sustainable Aquaculture:

(i) a development application for consent to carry out development to which that Policy applies, or

(ii) development that is carried out in accordance with a development consent granted under that Policy.

5.2.3 SEPP 33 (Hazardous & Offensive Industries)

This planning instrument applies to those industries which can be categorised under the policy's definition of 'potentially hazardous industry' or 'potentially offensive industry'.
As the proposed development is industry, requires development consent and has pollution potential then SEPP33 applies. For designated development such as this project, the Department of Planning will issue the Director's requirements, which will refer to the need to do a preliminary hazardous analysis or assess the extent of offence. These analyses will be included in the Environmental Assessment.

5.3 Environmental Planning & Assessment Act 1979

Due to the provisions of the SEPP (Major Projects), the proposed asphalt plant falls under Part 3A of this act, is classed as a Major Project and consequently the Minister is the consent authority.

5.4 Hunter Regional Environmental Plan 1989

As the proposed asphalt plant meets the criteria for Part 3A of EP&A Act, this planning instrument is not directly applicable, however the project is consistent with the intentions and objectives of the Hunter REP.

The objectives of this plan in relation to planning strategies concerning industrial development are:

(a) to ensure that sufficient zoned and serviced industrial land is provided in locations appropriate to the needs of industry, while ensuring protection of the environment, and

(b) to promote the distribution of employment in secondary industry in a manner compatible with the availability of services and distribution of population

5.5 Port Stephens Local Environmental Plan 2000

The site is zoned 4(a) Industrial – General under the Port Stephens Local Environmental Plan. The objectives for this zoning are:-

(a) to enable the development of a wide range of industrial, service and storage activities and a limited range of business and retail activities, and

(b) to allow industrial development only after comprehensive hazard analysis and risk assessment provide adequate safeguards designed to protect the surrounding environment and ecological balance, and

(c) to regulate industries in proximity to urban localities and to ensure that adequate buffers are provided in the vicinity of adjacent zones, so that activities near the boundary of an adjacent zone will not have a significant detrimental effect on the amenity of that zone, and

(d) to enable the most efficient and effective industrial development of waterfront industrial land by encouraging associated waterfront land uses sympathetic to the environment and ecology of the waterfront lands, and

(e) to allow commercial, retail, residential, or other development only where it is associated with, ancillary to, or supportive of, industrial development, and

(f) to limit development for the purpose of bulky goods salesrooms or showrooms, and

(g) to encourage a high standard of design and amenity in industrial areas.

As the proposed asphalt plant meets the criteria for Part 3A of EP&A Act, this planning instrument is not directly applicable. However, the project is consistent with the intentions and objectives of the Port Stephens LEP.

The subject site falls under class 3 land as shown on the acid sulphate soils maps referred to in the LEP. Therefore any:-

-Works more than 1 metre below the natural ground surface

-Works likely to lower the watertable to a depth of more than 1 metre below the natural ground surface

will require the preparation and submission of an acid sulphate soil assessment and management plan.

5.6 Protection of the Environment Operations Act 1997

Schedule 1 of this instrument lists all EPA-licensed activities. The proposed asphalt plants meets the criteria as :-

Bitumen pre-mix or hot-mix industries *where crushed or ground rock is mixed with bituminous or asphaltic materials and that have an intended production capacity of more than 150 tonnes per day or 30,000 tonnes per year. This activity does not include works of a temporary nature exclusively providing product for a construction site and located on or adjacent to that site for a period of less than 12 months*

Therefore the proposed asphalt plant will require an Environmental Protection License.

6 Environmental Issues and Consent

6.1 Overview

The following section identifies key environmental issues, elucidates their significance and provides information on how the significant issues will be addressed.

The key environmental issues identified are:-

- Noise
- Traffic
- Air Quality
- Land Use / Visual Amenity
- Water Quality
- Social
- Mine Subsidence
- Flora/Fauna
- Indigenous Heritage
- Soil

6.2 Key Environmental Issues: Evaluation & Management

6.2.1 Noise

The proposed asphalt plant will have some items of plant that typically create high noise levels. The most significant is the burner that has a substantial low frequency content and the second is the presence of mobile plant and elevated conveyor/screening systems that have high and/or tonal noise emissions.

The proposed plant is located 600 – 800m from the two sensitive receivers:- Tomago Village Van Park to the south, and the residence to the north.
Background noise levels in the area are approximately 35 dB(A) despite the presence of the smelter and the Pacific Highway. Typical sound power levels for this type of plant are in the range 100 to 110 dB(A). With an expected free field attenuation loss of approximately 60 dB(A) to the nearest sensitive receptor a received noise level of between 40 and 50 dB(A) would be expected. The anticipated Department of Environment & Conservation (DEC) criteria under the Industrial Noise Policy would be 40 dB(A). Allowing a 5 dB adjustment for adverse noise character then it is likely that the noise target values set in accordance with DEC procedures would be exceeded by between 5 and 15dB(A) depending on the particular plant.

The noise type and level is generally consistent with other industrial plant in the area and asphalt batch plants generally operate for short periods 15 minutes to 1 hour at a time over an extended day usually 6 am to 10 pm. There are times, however, when a plant may be required to operate 24 hours per day for an extended period if major road construction is underway.

Asphalt plants can generally be treated cost effectively to significantly reduce noise emissions from the key sources. Given treatments are available and that the overall character of the area is industrial and the nearest affected receptors are influenced by other significant noise sources the overall risk associated with potential noise impacts is, in the acoustic specialist's view, moderate and may be readily addressed as part of the design process.

6.2.2 Traffic

Material deliveries to the plant would tend to be from consistent suppliers and the origins and destinations would generally be uniform. Trucks delivering aggregate will generally arrive via the Pacific Highway, Tomago Road and Old Punt Road. Few deliveries will arrive via Nelson Bay Road and Cabbage Tree Road/Tomago Road.

Trucks transporting asphalt from the plant to work sites will be much more random in nature depending upon location of the destination.

The proposed asphalt plant will generate approximately 3 car trips and 23 truck trips during the peak traffic period for average operating conditions. The maximum potential operation would be for 24hours of operation and although the potential output in such exceptional circumstances would be up to approximately 1500 tonnes per day, the peak hour generation would not be significantly affected. Maximum hourly deliveries are limited by the maximum hourly plant output.

The estimated peak hour trip generation during maximum potential output is 6 car trips (shift change) and approximately 38 truck trips.

It is the opinion of the traffic specialist that approval of the proposed asphalt plant would result in negligible impact on the level of service, capacity, vehicular and pedestrian safety of Kennington Drive and Tomago Road.

Additionally, the proposed location enables all deliveries of raw material and transport of finished product to be via arterial roads and Old Punt Road which services the industrial estate, with minimal impact on residential areas remote form the development site.

6.2.3 Air Quality

There are two issues regarding air quality impacts of the proposed asphalt plant.

The main issue is dust, and the short and long-term impacts associated with particulate emissions.

The second is odour, associated with stack emissions of various organic chemicals, and also fugitive emissions of organic chemicals from unloading bitumen to the plant, and loading the hot asphalt to trucks.

There are a number of potential sources of dust emissions that are managed by the process. The product cold feed is aggregate. The aggregate will typically have some surface dust from the crushing process. To control any dust emissions at each point in the delivery and handling of the aggregate, the following measures are applied: -

- *Truck dump hopper*: Trucks will dump slowly (dribble feed) into a receiver hopper. The hopper will discharge the product via a feed belt onto a short conveyor to a radial stacker. The rate of truck discharge will be controlled to the rate of the discharge feed belt. This slow (dribble) feed will be the principal control of dust emissions from the truck dumping process. Additionally, there will be sprays mounted on the hopper to further suppress dust where required.
- *Conveyors and transfer points*: These will have sprays to control dust and, where necessary, transfer points can be enclosed. The conveyors will be partially enclosed (roof and one side).
- *Discharge of radial stacker to bins*: The radial stacker will be fitted with sprays at the discharge. The discharge will be enclosed by roofing and partial walling of the bins
- *Discharge from aggregate feeders and conveyors to dryer*: The aggregate feeders discharge onto a collect conveyor. The collect conveyors will be partially enclosed and transfer points are as enclosed as is practical.
- *The Process*: The process is a proprietary plant. It is as enclosed as is practical with vacuum exhaust of the dryer and dryer discharge. The exhaust draws dust from the dry aggregate in the rotary dryer and conveys it to a bag house. The baghouse separates the dust from the air and the dust is conveyed to the dust bin where it is stored to be cycled into the process. Alternatively, the dust is recycled directly to the screen deck. Any dust or fumes generated in the batch tower will be exhausted through the dryer and baghouse as appropriate.

Odour sources are the organic vapours from the rotary dryer, the heater and the mixer. Should the dispersion modelling of the plant indicate that odour might be a nuisance then the following options are available: -

- to reduce vapours from the heated bitumen storage tanks, the vapours can be condensed with air-cooled vent pipes
- tank emissions could be routed back to combustion units
- carbon canisters could be used on the tanks
- another less common option would be to vent the emissions from tanker loadings into the dryer.

6.2.4 Land Use/Visual Amenity

The proposed site is part of the new "Hunter Industrial Park" subdivision at Tomago and is currently open grassland. This site and the surrounding area are zoned 'Industrial – General' and as such, all immediately neighbouring properties, existing and proposed, are for industrial usage. Consequently, an asphalt plant will not be conspicuous with the diversity of industrial uses that are likely to occur in the subdivision.

6.2.5 Water Quality

The proposed site is located close to the Tomago Sandbeds Special Area. This aquifer supplies 20-25% of the drinking water to the Lower Hunter and plays an important role in Hunter Water Corporation's Drought Management Plan. Therefore it is crucial that the ecological health of the aquifer be not be jeopardised.

Therefore the main issues to be addressed are

Sewerage Facilities - As this is a sensitive site, it is imperative that the sewerage system be capable of handling the produced waste. The site is connected to a sewerage network and therefore effluent will be piped from the site and should not pose a threat to the aquifer.

Aquifer Interference - Any construction or operational activities which could interfere with the aquifer must be addressed. The proposed plant will be supported by either surface pad footings or a pile system that does not involve material removal (eg. steel screw piles or timber mini-piles), thus minimising aquifer interference.

Safe Storage/Handling of Fuels & Chemicals - Any fuels or chemicals onsite, if improperly stored or handled, may permeate the soil and pollute the aquifer. The only chemicals stored on site will be in the laboratory and they will be stored and handled in accordance with statutory

requirements with a self-contained facility. Any unwanted chemicals or by-products will be disposed to an appropriately licensed contractor. The bitumen and any other liquid hydrocarbons will be stored in tanks and bunded to contain any spillage.

Surface Runoff Management - All surface runoff from areas with potential for contamination will be discharged to a first flush containment (the first 10mm of any storm event will be contained). The first flush holding tanks will be monitored for contamination and treated if necessary prior to discharge.

Airborne Pollutants - Any airborne pollutants from the process or transport of raw or finished product can potentially settle on the ground. Mitigation actions are addressed in the air quality and the surface runoff sections of this report.

6.2.6 Social

The proposed site is immediately surrounded by industrial usage. The closest residential areas are the Tomago Village Van Park approximately 800m to the south and a single residence located approximately 600m to the north.

The site location in 'Hunter Industrial Park' will ensure that the surrounding lots are also used for industry and therefore the additional social impact an asphalt plant would make to this area is minimal.

For this development, the extent of community consultation considered necessary was to meet with the resident to the north and fully inform them of the development. This has been done. The scope and scale of the development was explained to the resident and he expressed no concerns.

It is considered that this development proposal is ideally located to minimise social impact and to provide a positive improvement to the social environment by providing a modern asphalt plant in an area that will minimise transport times to markets to the north. It also enables transport routes to and from the plant along existing main arterial routes, predominately away from residential areas.

6.2.7 Mine Subsidence

The property is not within a 'proclaimed mine subsidence district' as per the meaning of section 15 of the Mine Subsidence Compensation Act 1961, therefore mine subsidence is not an issue.

6.2.8 Flora/Fauna

The proposed plant location is open grassland. There is no significant fauna or flora that will be immediately affected by the construction of the asphalt plant. The greater surrounding area consists of other industrial concerns, swamp, scrub and some bushland. Any deleterious effects the plant may have on the environment at large will be mitigated by noise, water and air quality controls that are built into the plant itself.

6.2.9 Indigenous Heritage

The proposed site is part of a new industrial subdivision and as such is a disturbed site and should not contain any artefacts of indigenous heritage. Should any artefacts be discovered on the site, the land use planning section of Port Stephens Council will be notified.

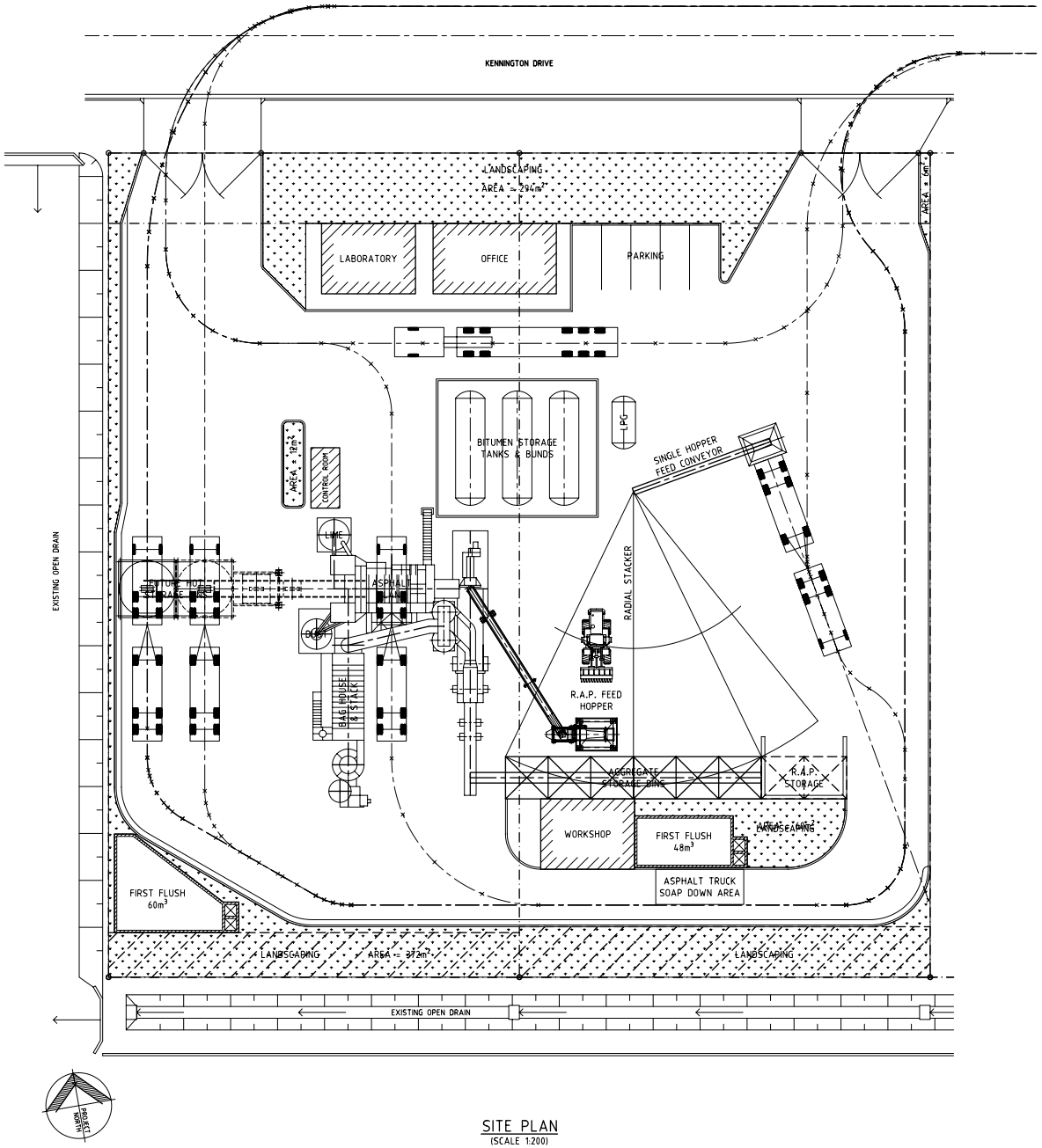
6.2.10 Soil

According to the Acid Sulphate Soils Planning Maps, the proposed location is classified as ‘class 3 acid sulphate soil’. A geotechnical assessment of sample from a borehole located approximately 180m East of the site found the presence of ‘potential acid sulphate material’.
As discussed in section 5.5 of this report, the Port Stephens LEP requires an Acid Sulphate Soil Assessment and Management Plan be carried out for all class 3 acid sulphate soils where works are undertaken more than 1m below the natural ground surface or where works are likely to lower the watertable to a depth greater than 1m below the natural ground surface.

7 Appendix A

Proposed Plant Schematic

DO NOT SCALE - THIS DRAWING MAY BE A REDUCED COPY



SITE PLAN
(SCALE 1:200)

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REVISIONS

No.	DATE	APP.	AMENDMENTS
B	14.02.07	N.I.	PRELIMINARY ISSUE
A	17.11.06	N.I.	ISSUED FOR INFORMATION

MEMBER OF THE ASSOCIATION OF CONSULTING ENGINEERS OF AUSTRALIA

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CLIENT: TROPIC ASPHALT

TITLE: PLANT LAYOUT

PROJECT: PROPOSED ASPHALT PLANT
LOTS 14 & 15 KENNINGTON DRIVE
TOMAGO N.S.W.

DRAWN	DESIGNED	CHECKED	SHEET SIZE
N.I.	M.L.		A1
SCALE	DATE	APPROVED	
A1 - 1:200	SEPTMBER 2006		

PROJECT No.	DRAWING No.	REVISION
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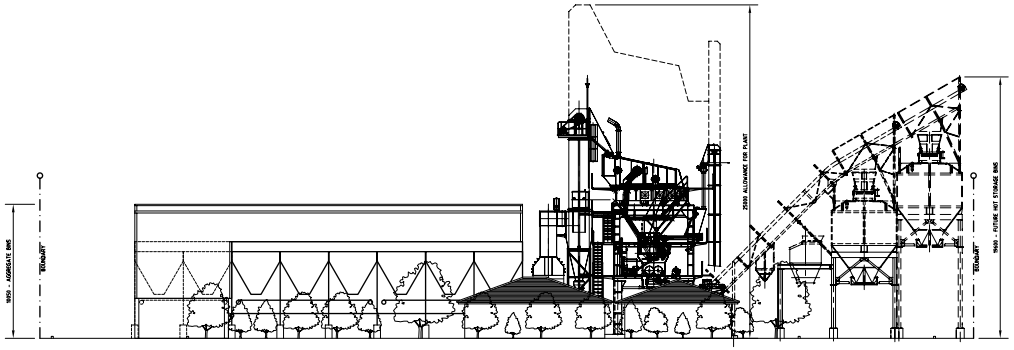
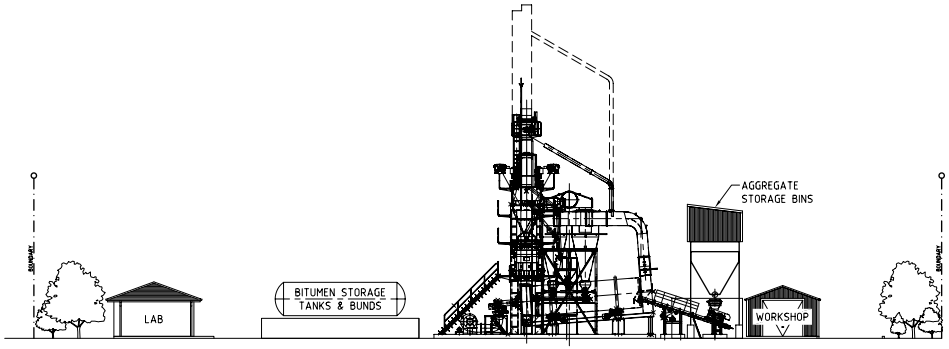


NORTH ELEVATION - VIEW FROM KENNINGTON DRIVE
(SCALE 1:200)



EAST ELEVATION
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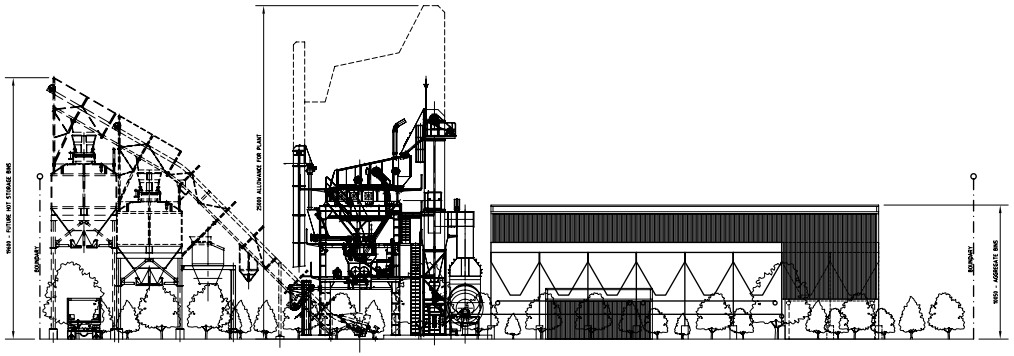

SOUTH ELEVATION
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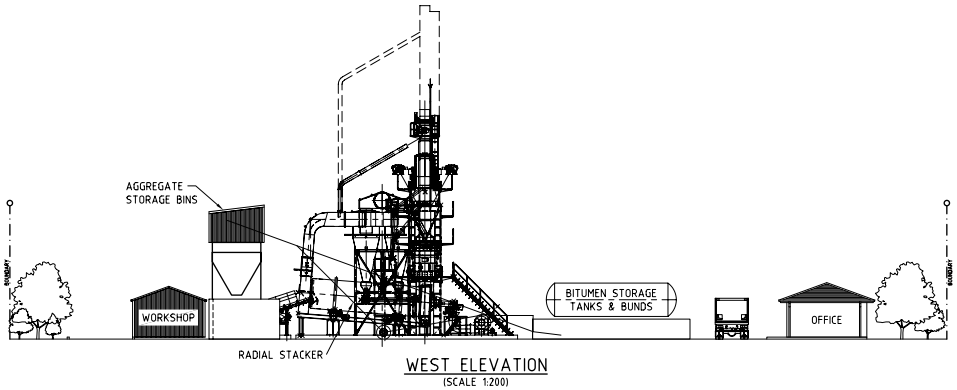

WEST ELEVATION
(SCALE 1:200)

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A	14.02.07	N.I.	PRELIMINARY ISSUE
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CLIENT: TROPIC ASPHALT

TITLE: PLANT ELEVATIONS

PROJECT: PROPOSED ASPHALT PLANT
LOTS 14 & 15 KENNINGTON DRIVE
TOMAGO N.S.W.

DRAWN	DESIGNED	CHECKED	SHEET SIZE
N.I.	M.L.		A1
SCALE	DATE	APPROVED	
A1 - 1:200	SEPTMBER 2006		
PROJECT No.	DRAWING No.		REVISION
6511	SK103D		A