

COUNCIL OF THE CITY OF CESSNOCK

**SECTION 94 CONTRIBUTIONS PLAN
EXTENSION OF OPERATIONS AT
BLACKHILL QUARRY
PARISH OF STOCKRINGTON**

27 March 1995

**Prepared By:
Gary Cox Planning & Policy Chambers Pty Ltd
PO Box 813, Darlinghurst, NSW 2010**

CITY OF CESSNOCK

SECTION 94 CONTRIBUTIONS PLAN NO.* EXTENSION OF OPERATIONS AT BLACKHILL QUARRY PARISH OF STOCKRINGTON

Commencement

1. This Plan commences on __ April 1995.

Name of the Plan

2. This Plan may be cited as "Cessnock Contributions Plan No. ** - Extension of Operations at Blackhill Quarry, Parish of Stockrington".

Area to Which the Plan Applies

3. The Plan applies to the Blackhill Quarry Special Contribution District in the City of Cessnock, identified in Clause 8 of this Plan.

Aims and Objectives

4. The Plan aims:
 - to apply Section 94 contributions in a manner that is fair, reasonable, publicly accountable and equitable;
 - to ensure that the operations of the Blackhill Quarry development contribute to the provision and maintenance of access roads and intersections required and used by quarry trucks;
 - to minimise any adverse environmental and social impacts in terms of noise and dust to residences and other development in the vicinity.

The Purpose of the Plan

5. The purpose of the Plan is to establish a schedule of contributions for the access roads and intersections leading to Blackhill Quarry.

6. The other purpose of the Plan is to demonstrate that the contributions have been set after due assessment of the likely needs and demands of the quarry development in terms of access roads and their on-going maintenance.

Definitions

7. *Contribution.* This term, anywhere in this Plan, refers to a contribution made under Section 94 of the Environmental Planning and Assessment Act 1979.
8. *Special Contribution District.* For the purposes of this Plan, a Special Contribution District has been designated. This is called the *Blackhill Quarry Special Contribution District.*

This Special Contribution District comprises:

- the total road reservation along Blackhill Road from its intersection with John Renshaw Drive (Main Road 588) to its intersection with Leneghans Drive;
 - Lots 683 and 686 of DP 619758, Parish of Stockrington;
 - Portion 70 and Lot 2 of DP 123949, Parish of Stockrington; and,
 - Lot 1 of DP 536570 and un-numbered Lot DP 957782, Parish of Stockrington.
9. Boundaries of the Special Contribution District are shown on Map 1.

Type of Development to Which the Plan Applies

10. This Plan provides for the charging of Section 94 contributions for the Blackhill Quarry development and operations as stipulated in Development Application Number 118/694/0115. No other development is covered by the provisions of this Plan.

Types of Public Amenity and Public Service Covered by this Plan

11. The following public amenities and services may be covered by this Plan:
 - upgrading and/or construction of roads,
 - intersection upgrading and construction,

- on-going maintenance and repair of roads,
 - drainage works,
 - traffic management measures, and
 - kerb and guttering.
12. Council will levy contributions for these items only under the provisions of this Plan.

Principles for the Setting of Contribution Rates

13. Principles of nexus, fair apportionment and reasonableness have been fully followed in the setting of the contribution rates. These principles are summarised below.
14. **Nexus.** This means that the contribution levied must be for increased demand for a public amenity or service that is caused by the development. In all cases, where a contribution is levied, the quarry development is expected to result in increased demand on roads, in terms of standard of provision and on-going wear and tear on the pavement.
15. **Fair apportionment.** This is the fairness principle. It means that new development only pays the full cost of a service or facility if it can be shown that it exclusively causes the increased demand. In this case, it has been demonstrated that the Blackhill Quarry solely causes the demand for the increased standard of intersection from Lot 1 of DP 536570 (i.e. the Western Access Road) to Blackhill Road. However, the use of Blackhill Road by existing users has been taken into account when assessing the on-going maintenance contribution for Blackhill Road itself.
16. **Reasonableness.** This principle refers to whether the amount levied is a reasonable contribution. All contributions in this plan fully satisfy this principle.

Basis of Contribution Amounts

17. In the Plan itself, the annual contribution rates for maintenance have been presented on a per tonne basis.

Contributions for Capital Road Works

18. Full details of the method of determining the contribution are contained in the attached Explanatory Report, Section 4.4.
19. Contributions for capital road works are calculated using the following formula:

$$S94 = (\text{works in kind } \Sigma \text{ CWP }) + (ST * I)$$

Where,

S94 is the Section 94 contribution for the quarry development.

(works in kind Σ CWP) refers to the satisfactory completion of all the works in kind stipulated in the Capital Works Program in Appendix 1.

ST is the total of the Section 94 Study cost. The quantum is shown in Appendix 1.

I is the annual index, as defined in Clause 27 of the Plan. The monetary component will be indexed annually from the date of consent.

Contributions for Road Repairs and Maintenance

20. Full details of the method of determining the contribution are contained in the attached Explanatory Report, Section 4.5.
21. Contributions for annual road maintenance are calculated using the following formula:

$$S94 = ((MWP * P) * I) / ATE$$

Where,

S94 is the Section 94 contribution per tonne.

MWP is the total annualised cost of the Maintenance Works Program in Appendix 2.

P is the proportion of pavement damage attributable to the heavy quarry trucks. This has been estimated at 90%.

I is the annual index, as defined in Clause 28 of the Plan.

ATE is average planned tonnage to be extracted from the Blackhill Quarry. This figure is 140,000 tonnes per annum.

22. Calculating the per tonne rate:

From the formula shown in Clause 21, the per tonne rate is as follows:

$$((\$19,820 * 0.90) * 1) / 140,000 \text{ tonnes}$$

$$\$17,838 / 140,000 \text{ tonnes}$$

$$= \$0.13 \text{ per tonne}$$

23. Calculating the total contribution:

The quantum levied is calculated as follows:

$$S94 = (\$0.13 * I) * TE$$

Where,

S94 is the total Section 94 contribution per annum.

\$0.13 is the road maintenance royalty per tonne extracted.

I is the cumulative annual index, as defined in Clause 28 of the Plan. The royalty per tonne can either be indexed annually itself and used in the following year's calculations as the base royalty rate or a cumulative index used instead. The result is the same either way.

TE is total tonnage extracted from Blackhill Quarry, Parish of Stockrington, during the period 1 July to 30 June during the previous financial year.

24. The maintenance contribution for the quarry operation must be calculated annually on presentation of adequate returns stipulating the amount of tonnage extracted in the previous financial year.

Timing of Payments

25. Unless otherwise agreed to by Council, the payment of contributions will be required:

- For the Capital Works Program in-kind component - all works must be completed to the satisfaction of Council prior to development consent being issued for the extraction of material at Blackhill Quarry. This is both in terms of continuation of existing operations and the extension

of the quarry into the 5 hectare area to the southwest of the present quarry.

- For the Capital Works Program monetary component - all contributions must be paid in full to Council prior to development consent being issued for the extraction of material at Blackhill Quarry. This is both in terms of continuation of existing operations and the extension of the quarry into the 5 hectare area to the southwest of the present quarry.
- For the Maintenance Works Program monetary component - all contributions must be paid by **15 August** for the previous financial year's extraction of material.

Timing of Expenditure

26. Council will spend contributions for annual road repair and maintenance during the 12 months after receipt of the full annual contribution. Contributions for resealing must be spent within 10 years of collection.

Annual Indexation

27. From the date of adoption of this Plan, monetary contributions under the Capital Works Program will be indexed annually. This will be on the basis of the annual *Private Borrowing Rate for Local Government* applicable at the time of indexation.
28. Monetary contributions under the Maintenance Works Program will be indexed annually on the basis of the Australian Bureau of Statistics *Price Index of Material Used in Building Other Than House Building* (Cat. No. 6407.01). The applicable index is the annual index issued for 30 June for the previous 12 months.

Annual Reporting

29. By 31 July of each year, the quarry operator must supply to Council details of the previous financial year's extraction (1 July to 30 June) and the tonnage transported along the Western Access Road to Blackhill Road.
30. This information should be corroborated by any royalty or statistical reports (such as the *Summary of Extraction Report* required to be lodged with the Department of Conservation and Land Management every 12 months).

Annual Review

31. This Plan will be reviewed by Council every year. The following are some of the matters to be taken into account:
- changes in quarry output or methods of operation,
 - changes in rural road cost construction,
 - changes in road construction standards,
 - observed pavement damage and altered traffic conditions in the vicinity,
 - the impact of quarry truck movements on the amenity of adjoining residents and landuses,
 - the progress of the Maintenance Works Program.
32. Council may amend this Plan by following the procedure laid down in the Environmental Planning and Assessment Regulation 1994 Clause 31(1).

Administration of the Contributions Plan

33. Council's Strategic Services Department in conjunction with officers from Council's Finance and Administration Department will administer the day to day running of the Contributions Plan. A *Section 94 Management Team* coordinates and prioritises all Council's Section 94 Capital Works Programs.
34. The composition of the Section 94 Management Team is as set up in the *Cessnock Contributions Plan For Residential Development*.

Public Accountability

35. Council will maintain for its own administration and for public viewing a *Contributions Register*. This will record the following:
- details identifying the development consent for which the contribution has been charged;
 - the type of contribution charged and the amount;
 - details of the amount and date of payments made;
 - the name of the Plan under which the contribution was levied.

36. As soon as practicable after the end of the financial year, Council will prepare an *Annual Statement* in relation to money collected under this Plan. This will show the following:
- all the categories of public amenities or services for which contributions have been collected;
 - all the contributions received under this Plan listed under the various categories of public amenity or service;
 - all the amounts spent during the year listed by category of public amenity or service; and,
 - any other matters that are required to be reported on under the provisions of the Environmental Planning and Assessment Regulation 1994 Part 4, Division 5 - Accounting.

Changing the Contributions Plan

37. The Council may change or repeal this Plan at any time. To repeal the Plan, the Council must make a public notice in the usual way stating this intention. Clauses 31(2) and 32 of the Environmental Planning and Assessment Regulation 1994 apply.
38. The Council can amend the Contributions Plan by a subsequent Contributions Plan as provided by Clause 31 of Environmental Planning and Assessment Regulation 1994. The Council must exhibit the changed Plan in full for public comment and submission. Clauses 25 to 30 of the Environmental Planning and Assessment Regulation 1994 apply as if it were an entirely new Plan.

Supporting Studies and Plans

39. The following supporting material is presented alongside this Plan and should be seen as part of it. The documents are:
- the Contributions Plan Explanatory Report, including tables and appendices;
 - the *Assessments of Transport Impacts* and the *Road Standard Assessment*, prepared by Council's Works Department;
 - the Capital Works Program and the Maintenance Works Program;
 - the Schedule of Section 94 Contributions.

SCHEDULE OF SECTION 94 CONTRIBUTIONS

The Section 94 Contributions Plan for Blackhill Quarry, Parish of Stockrington, has 2 components:

A. Access Roads Capital Works Contribution:

Contributions for capital road works are calculated using the following formula:

$$S94 = (\text{works in kind } \Sigma \text{ CWP}) + (ST * I)$$

Where,

S94 is the Section 94 contribution for the quarry development.

(works in kind Σ CWP) refers to the satisfactory completion of all the works in kind stipulated in the Capital Works Program in Appendix 1.

ST is the total of the Section 94 study cost and road works inspection fee. The quantum is a total of \$4,500 (see Appendix 1).

I is the annual index, as defined in Clause 27 of the Plan. The monetary component will be indexed annually from the date of consent.

B. Access Roads Annual Maintenance Contribution:

Contributions for annual maintenance works are calculated using the following formula:

$$S94 = (\$0.13 * I) * TE$$

Where,

S94 is the total Section 94 contribution per annum.

\$0.13 is the road maintenance royalty per tonne extracted calculated as shown in Clauses 21 and 22 of this Plan.

I is the cumulative annual index, as defined in Clause 28 of the Plan. The royalty per tonne can either be indexed annually itself and used in the following year's calculations as the base royalty rate or a cumulative index used instead. The result is the same either way.

TE is total tonnage extracted from Blackhill Quarry, Parish of Stockrington, during the period 1 July to 30 June during the previous financial year.

The maintenance contribution for the quarry operation must be calculated annually on presentation of adequate returns stipulating the amount of tonnage extracted in the previous financial year.

COUNCIL OF THE CITY OF CESSNOCK

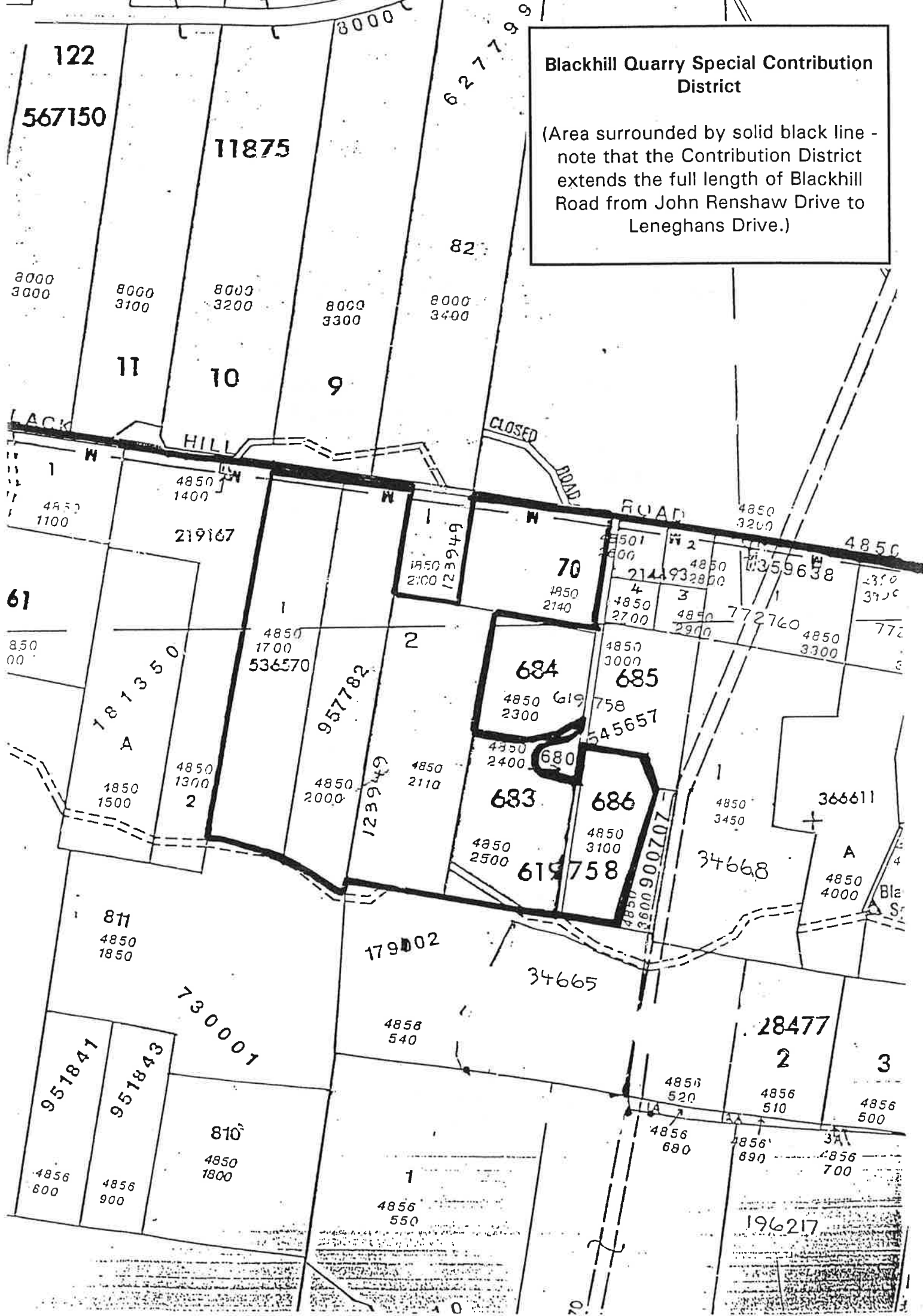
**SECTION 94 CONTRIBUTIONS PLAN
EXTENSION OF OPERATIONS AT
BLACKHILL QUARRY
PARISH OF STOCKRINGTON**

MAP 1

**BLACKHILL QUARRY
SPECIAL CONTRIBUTION DISTRICT**

Blackhill Quarry Special Contribution District

(Area surrounded by solid black line - note that the Contribution District extends the full length of Blackhill Road from John Renshaw Drive to Leneghans Drive.)



COUNCIL OF THE CITY OF CESSNOCK

**SECTION 94 CONTRIBUTIONS PLAN
EXTENSION OF OPERATIONS AT
BLACKHILL QUARRY
PARISH OF STOCKRINGTON**

EXPLANATORY REPORT

27 March 1995

**Prepared By:
Gary Cox Planning & Policy Chambers Pty Ltd
PO Box 813, Darlinghurst, NSW 2010**

TABLE OF CONTENTS

1	Intent	15
2	Background	16
3	Key principles in the administration of Section 94	19
4	Contributions for rural roads and intersection works	23
5	Assessment against contribution principles	33
6	Monitoring the Section 94 program	35
7	Conclusion	36
8	References	37
	Appendix 1 - Capital Works Program	
	Appendix 2 - Maintenance Works Program	
	Appendix 3 - Assessments of Transport Impacts Manager - Classified & Rural Roads	
	Appendix 4 - Traffic Count - Blackhill Road 9 February 1995 - 26 February 1995	
	Appendix 5 - Road Standard Assessment Manager - Traffic Engineering	
	Appendix 6 - Extracts from Austroads publications	

1 INTENT

The intention of this Contributions Plan is to ensure that the continuation and extension of quarry operations proposed at Blackhill Quarry, Parish of Stockrington, does not adversely impact on Council maintained roads or the amenity of nearby residents.

To achieve this, the Contributions Plan establishes principles and formulae for setting reasonable contribution rates for on-going maintenance of Blackhill Road from the intersection with Main Road 588 (John Renshaw Drive) to the intersection with Leneghans Drive. It also stipulates upgrading works that must be carried out at the intersection of the Western Access Road with Blackhill Road prior to the development consent being issued.

The Plan has been made and will be administered in accordance with the requirements of Section 94 of the Environmental Planning and Assessment Act 1979 and Part 4 of the Environmental Planning and Assessment Regulation 1994.

In essence, the intention is to provide adequate access to the site to enable quarrying operations to take place without detriment to adjoining property owners and without adverse impact on Council's current road maintenance program.

2 BACKGROUND

2.1 Description of the proposed development

The Blackhill Quarry has been operating since 1955. Since 1993, the quarry has been operated by Woodburys Haulage and Earthmoving Pty Limited. The quarry has no formal development consent; hence, it has been registered under *State Environmental Planning Policy No. 37 - Continued Mines and Extractive Industries*.

The proponent is now seeking development consent from Council for the continuation of existing quarry operations and also for the extension of the quarry into a 5 hectare area to the south west of the current extraction area. The application is for a 20 year period.

No extraction plan has been presented in the EIS. However, the EIS states that the remaining gravel in the existing quarry will be extracted in the one or two year period to the end of 1996. Extraction will then commence in the 5 hectare extension. This will extend the quarry life until around 2015 (Wayne Perry & Associates 1994, p. 6).

2.2 Production and markets

Four quarry products are extracted from the development. These are ridge gravel, clay shale, fill and boulders. Approximate annual tonnages are shown in the table, below. The data has been obtained from the Environmental Impact Statement (Wayne Perry & Associates 1994, p. 4 & p. 6). Unfortunately complete production details were not presented in the EIS, for example, for clay shale and boulders. Also, the conversion factor for sandstone fill had to be obtained from the NSW Department of Mineral Resources (Geological Survey of New South Wales).

Annual production averages			
Product	Quantity	Loose density	Tonnage
Ridge gravel	45,000 m ³	1.6 t/m ³	72,000 t
Fill (sandstone)	50,000 m ³	1.36 t/m ³ †	68,000 t
Clay shale	data unavailable	1.44 t/m ³ †	
Boulders	data unavailable		
Total production:			140,000 tonnes

Source: Wayne Perry & Associates 1994, p. 6.
† figure obtained from NSW Department of Mineral Resources.

The EIS states that approximately 25% of product is sold in the Kurri and Cessnock areas and 75% is sold in the Maitland, Newcastle, Lake Macquarie and Port Stephens Local Government Areas. These figures are based on the period March 1993 to March 1994 (Wayne Perry & Associates 1994, p. 4).

2.3 Quarry operation

It is proposed that the hours of operation will not change from current practice. That is, the quarry will operate from 6.30 am to 6.00 pm Mondays to Fridays, with machinery commencing at 7.00 am. On Saturdays, loading and haulage of gravel will take place from 7.00 am to 1.00 pm. No extraction will occur on Saturdays (Wayne Perry & Associates 1994, p. 6).

Generally, the annual production and truck movements are expected to be fairly constant year to year. The EIS simply states (Wayne Perry & Associates 1994, p. 6):

'Subject to normal seasonal variations, quarrying will be undertaken generally at a similar rate of extraction as at present involving the present range of machinery and trucks, the same hours of operation and similar workforce levels.'

2.4 Non-Section 94 matters relating to roads

This Section 94 Contributions Plan relates to the satisfactory mitigation of the impact of the quarry development on Council maintained roads accessing the site. The Plan provides for the upgrade of the intersection of Blackhill Road with the Western Access Road and the on-going maintenance of Blackhill Road itself.

Amenity impacts (primarily relating to noise and dust) associated with the internal access roads to the quarry are dealt with as conditions of consent. These are private roads and thus cannot be dealt with under Section 94, which relates solely to public amenities or services. Consequently, the following condition of consent addresses these issues:

'The applicant shall close the eastern access road to the quarry operation and restore the footpath and pavement where necessary to match the existing adjacent footpath and road conditions. All access to and from the site shall be via the western access road and its upgraded intersection with Blackhill Road.'

In order to address noise and dust impacts from the internal access road, Council considers it necessary that the Western Access Road be reshaped and adequate drainage provided. After this, the road should be bitumen sealed (2 coats of 140 bitumen seal comprising 10mm aggregate and 14mm aggregate).

The road will be required to be 8 metres wide with a seal width of 7 metres. These works will be the responsibility of the proponent.

It should also be noted that Council has recently realigned Blackhill Road in the vicinity of the Western Access Road. This has been carried out for safety reasons. It is clear that the quarry operator will benefit substantially from these works.

2.5 Section 94 matters relating to roads

The following sections of the Explanatory Report relate directly to the Section 94 contributions for the public roads in the vicinity of the development upon which the quarry operation will have a direct impact upon. These are the on-going maintenance of Blackhill Road and the need for an upgraded intersection treatment at the junction of the Western Access Road and Blackhill Road.

3 KEY PRINCIPLES IN THE ADMINISTRATION OF SECTION 94

3.1 The provisions of Section 94

Section 94(1) of the Environmental Planning and Assessment Act 1979 permits Council to levy a contribution for provision of amenities or services where:

'... a development, the subject of a development application, will or is likely to require the provision of or increase the demand for public amenities and public services within the area...'

The condition may require the dedication of land free of cost or the payment of a monetary contribution (s.94(1)(a) & s.94(1)(b)).

Section 94(2C) of the Act also allows Council to accept a 'material public benefit' or works in kind in full or part satisfaction of a condition imposed under Section 94(1) or (2A). It should be noted that 'material public benefit' is not defined in the Act.

Section 94(7) requires that any condition imposed under these provisions be determined in accordance with a Contributions Plan.

3.2 Capital works and maintenance

Contributions are generally only applicable to capital works. This has been established by the Land and Environment Court, rather than being stipulated in the Act. However, a number of Court judgements have firmly established that contributions for road repairs and maintenance are permissible under Section 94, where excessive wear and tear has been established. The relevant cases establishing this principle relate to extractive industry; they are:

- *McInerney v. Hawkesbury Shire Council* ((1980-1) 1 APAD 460);
- *Schuster v. Gunning Shire Council* (Unreported 2 July 1985);
- *Capital Quarries Pty Ltd v. Gunning Shire Council* (Unreported 14 August 1987);
- *E.H. & P.H. Clifford Pty Ltd v. Scone Shire Council* ((1988) 65 LGRA 391); and,
- *Collin C. Donges Pty Ltd v. Baulkham Hills Council* (4 May 1989).

In these cases, an annual maintenance contribution was levied, based on tonnage of material extracted. In *Clifford v. Scone*, a base annual charge was levied plus a per tonne rate for tonnage extracted over an annual threshold. In *Kittler v. Baulkham Hills Shire Council* (Unreported 16 April 1985), the Court refused consent because of likely damage to the road system from heavy trucks.

An important principle established in the *Clifford v. Scone* judgement was that, even though the proposed development replaced another quarrying development for which no Section 94 contribution had been paid, this did not gainsay the levying of a contribution for the proposed application. This is a significant precedent for the Blackhill Quarry. The current development commenced around 40 years ago before formal development consent was required. Consequently, no Section 94 contributions have been levied or paid. Even so, it is consistent with both this judgement and SEPP 37 that, pending this development application for continued and expanded operations, Section 94 contributions be levied for impacts on the local adjacent Council maintained roads.

The Department of Planning's *Section 94 Contributions Plans Manual* implies that levying for recurrent funding (repairs and maintenance) for roads is acceptable practice, since the Court has established this principle (section 4.5, p. 8; section 7.6, p. 14). Current practice has followed this principle in cases where quarries have been assessed as causing damage to road pavements. For example, Shoalhaven City Council has recently made Contributions Plans for road upgrade and maintenance for quarries in its area (Shoalhaven City Council 1994a & 1994b).

3.3 Daromin Quarry case, Buttai

The Land and Environment Court judgement in the recent case of the Daromin Quarry deserves noting. The proposal was for an extractive industry in nearby Buttai. The central issue of the case was the use of Lings Road as a haul route. The Court found that the operation of the quarry itself would be satisfactory; however, the use of Lings Road as a haul route was found to have significant adverse impacts on the amenity and lifestyle of nearby residents. The judgement stated (p. 21; *The Black Hill Environment Protection Group and the Buttai Community Development Group v. The Council of the City of Cessnock & Monteath and Powys Pty Ltd - agents for Daromin Engineering Pty Ltd; Monteath and Powys Pty Ltd - agents for Daromin Engineering Pty Ltd v. The Council of the City of Cessnock*; 10484 of 1993, 23 November 1994):

'In this scenic and residential locality, the establishment of a sealed haul route carrying major movements of haulage trucks cannot, in my opinion, be regarded as anything but a significant adverse impact. It will change the character of the valley, in a planning sense, because its predominantly rural/residential nature will be

critically affected by the bulk, design, visibility and commercial activity of the haul route.'

Even though a Section 94 Contributions Plan was prepared to address the need for upgraded roads and intersections and on-going maintenance, the Court deemed the access route so unacceptable as to require refusal of the application (p. 21):

'While I am satisfied that the relevant considerations which may be taken into account under s.90(1) result in the quarrying activity itself being a satisfactory development, I am of the opinion that the considerations involving the use of Lings Road render that road unacceptable as a haul route. The use of Lings Road is fundamental to the development application. In that circumstance, my conclusion is that development consent should be refused.'

It should be noted that the Blackhill Quarry case involves the continuation of an existing use. The major change relating to access is that the operator will no longer be permitted to use the Eastern Access Road (see Section 2.4, above). This should improve the amenity of the locality since most of the residences are situated near the Eastern Access Road. The only residence to be adversely affected on the western side is the rented cottage near the intersection of the Western Access Road and Blackhill Road.

3.4 Principles behind the preparation of the Plan

Before assessing needs and deriving contribution rates it is necessary to bear in mind the key principles in the administration of Section 94. Contributions must satisfy all three principles. These principles are central to the administration of Section 94. They are:

- nexus and benefit,
- fair apportionment, and
- reasonableness.

Nexus and Benefit

This is the foundation stone of Section 94. Nexus refers to the fundamental necessity of establishing the connection between the proposed development and the increased need for public amenities or public services. If this connection cannot be made, a Section 94 contribution cannot be levied.

There are three aspects to nexus:

- causal - that the development *causes* an increased demand for services or facilities;
- physical - the service or facility will be *located* to benefit the contributing development; and,
- temporal - the service or facility will be provided within a reasonable *time*.

The first component of nexus is critical in the determination of the contribution level. The last two components relate to the 'benefit principle'. That is the contributing development must benefit from the facilities provided.

Fair apportionment

This principle relates to the apportioning of costs. Essentially, the contributing development should only be required to contribute the full cost of a facility or service if it can be shown that it fully causes the increased demand. Contribution rates may be based on the full cost of new works or maintenance programs or some proportion of them. The latter is applicable when it can be demonstrated that the proposed development only causes a proportion of the demand for new or upgraded facilities.

Reasonableness

Reasonableness refers to the amount of contribution levied. It relates to the ability of developers to pay the contribution, but also to a contribution being reasonable in terms of Council obtaining enough money to provide the service or facility without imposing a burden on existing residents or ratepayers.

3.5 Application of the principles

In deriving contribution rates for each type of facility or service, reference will be made as to how they satisfy the above principles.

movements were calculated as 472 (weekending 19 February 1995) and 579 (weekending 26 February 1995). The overall eastbound total in the EIS of 338 vehicle movements is broadly consistent with the Council figures.

Blackhill Road Traffic Count Results 10 February 1994				
Location	Vehicle class	Westbound	Eastbound	Total
Near John Renshaw Drive	Light	68	65	133
	Heavy	7	8	15
	Total	75	73	148
Near Blackhill School	Light	178	210	388
	Heavy	50	55	105
	Total	228	265	493
Overall totals		303	338	641
Heavy vehicles		57	63	120
Modified from Wayne Perry & Associates 1994, p. 36.				

Traffic generation and distribution

The EIS states (p. 37) that future operations will have between 30 to 55 laden truck trips (60 to 110 vehicle movements) per working day from 7.00 am to 6.00 pm. 15 truck trips (30 movements) are planned to occur on Saturdays from 7.00 am to 1.00 pm. It should be noted that this represents no change from existing practices and volumes (Wayne Perry & Associates 1994, pp. 6 & 18).

These truck trips will be distributed according to market demand for the product. The EIS states that, in the 12 month period from March 1993 to March 1994, 25% of product was sold in the Kurri/Cessnock area and 75% in the Maitland, Newcastle, Lake Macquarie and Port Stephens Local Government Areas (Wayne Perry & Associates 1994, p. 4).

In the absence of other data, it can be assumed that, on average, 25% of truck movements will turn left at the intersection of the Western Access Road and Blackhill Road to final destinations in Kurri and Cessnock. Similarly, 75% of truck movements will turn right and proceed via the sealed section of Blackhill Road and then along Leneghans Drive to the destinations outside the Cessnock Local Government Area.

Heavy vehicle traffic other than quarry trucks

There are a number of poultry sheds along the northern side of Blackhill Road between the Eastern Access Road and Blackhill School (see Landuse Map). These are not high traffic generating developments. Typically, there few traffic movements per day - delivery of feed, delivery of chicks, export of poultry and export of waste products. Ten movements per day would be a reasonable estimation. This would be consistent with the EIS traffic count in the table, above (i.e. 120 total heavy vehicle movements minus 110 maximum quarry vehicle movements, leaving 10 heavy vehicle movements).

4.2 Nexus - summary of warrants

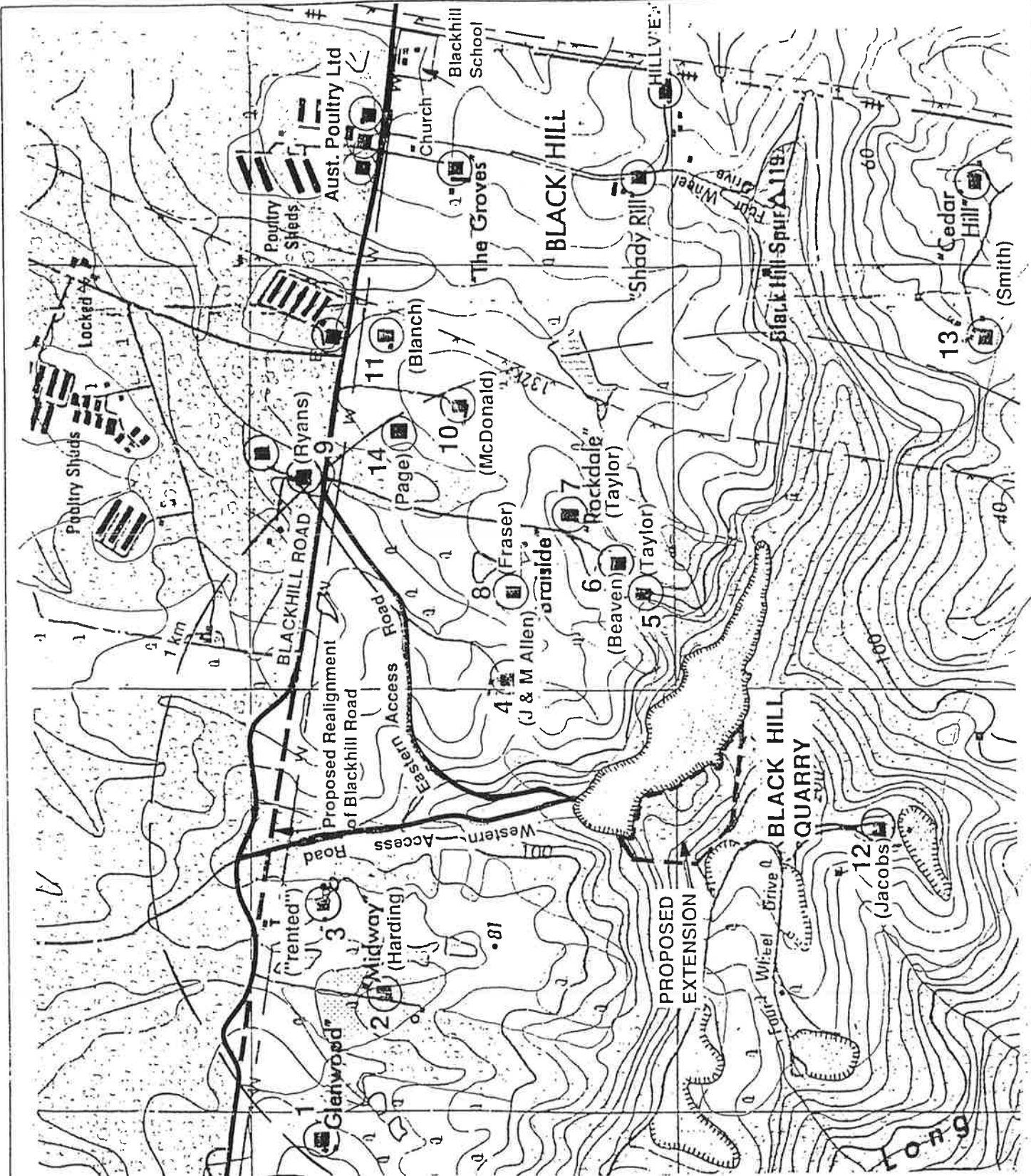
Nexus between Blackhill Quarry operations and an upgraded intersection at the junction of Blackhill Road and the Western Access Road

EIS impact assessment. The EIS stipulates that a modified Type B intersection will be installed (Wayne Perry & Associates 1994, p. 19; see also p. 37):



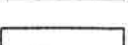
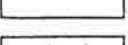




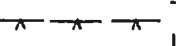

'All trucks will use the western access road which will be provided with an upgraded and safer intersection with the realigned and sealed Blackhill Road. The intersection will be upgraded to a standard between Type B and Type C Standard (NAASRA 1988). A "Type B modified" intersection, similar to the intersection recently installed for the ICI Plant entrance on George Booth Drive, is the favoured design and will be installed, subject to approval from Cessnock Council.'

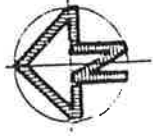
The impact assessment in the EIS for the roads from the quarry site is presented in the table. It assigns the total daily quarry truck movements to each direction (i.e. for occasions where the market demand is 100% to the west or to the east). For most of the roads, the quarry haulage represents an insignificant proportion of average annual daily traffic (AADT). It assesses that these impacts can be accommodated by the existing road design.

Only for Blackhill Road (north) is the haulage impact significant. The EIS states that the haulage traffic on this section of Blackhill Road is 74% for movements travelling to and from John Renshaw Drive (i.e. going west to Kurri or Cessnock). Even though the EIS states that this can be accommodated by the existing road design the modified intersection will improve service and road safety at this point and is justified on those grounds.



LEGEND

-  QUARRY
-  NATURAL VEGETATION
-  OPEN GRAZING
-  ORCHARD
-  POULTRY
-  DAM
-  RESIDENCE
-  ROAD
-  TRANSMISSION LINE
-  BUILDING



LAND USE

Basemap Source: CMA 1:25,000 Beresfield Topographic Map

It should be noted that the *Road Standard Assessment* also assesses the intersections of Blackhill Road with both John Renshaw Drive and Leneghans Drive. It recommends that no upgrading of these intersections is required.

Road safety. As referred to in the EIS (Wayne Perry & Associates 1994, p. 19), the intersection upgrading at the Western Access Road will ensure that the quarry operator's good safety record with transport will be maintained and that the probability of traffic accidents will be minimised. The upgraded treatment is justified on these grounds.

Quarry operations and maintenance

Excessive wear and tear. The justification for a Section 94 contribution for maintenance is on the grounds of excess wear and tear from quarry trucks, both laden and unladen, on the road pavement. Furthermore, Blackhill Road must be maintained to a useable standard to ensure the amenity of adjoining residents and landuses is not diminished.

It can be shown that a typical quarry truck carrying 25 tonnes of gravel can cause approximately the same amount of damage to a road pavement as 10,000 passenger cars (using the mechanistic road pavement design procedure in the Austroads *Pavement Design Guide* 1992). The *Pavement Design Guide* (section 7.1) states further that:

'For all pavements, performance is influenced only by the heavy end of the traffic spectrum. No account need be taken of cars and light commercial vehicles as far as loadings are concerned ...'

Following on from the Austroads damage ratio and given that the majority of vehicle movements on Blackhill Road will be quarry truck movements, it can confidently be stated that at least 90% of damage to the road will be as a 'direct result of these trucks. 10% of damage may be attributable to poultry operators' trucks (see p. 25, above). After the poultry operations are taken into account, the wear and tear on the road will thus be in direct relation to the tonnage of material carried along it.

Therefore, nexus has been established between the quarry operations and the need for road maintenance. However, the quarry operator should only pay a proportionate share (90%) of this cost due to the damage caused by poultry trucks also using the road. However, Council should not bear any financial loss from the quarry development.

Traffic Impact Assessment (Traffic Movements per Day)			
Road	AADT 1993	Quarry haulage (traffic movements per day)	Percentage of AADT
Blackhill Road (east)	493	60-110	12.2-22.3
Leneghans Drive	6,400	60-110	0.9-1.7
New England Highway	39,410	60-110	0.15-0.28
Pacific Highway	49,320	60-110	0.12-0.22
Blackhill Road (north)	148	60-110	40.5-74.3
John Renshaw Drive	7,310	60-110	0.8-1.5
N.B. The opening of the Minmi section of the F3 Freeway in December 1993 will have resulted in an increase in the Leneghans Drive AADT and a decrease in the John Renshaw Drive AADT. This will not affect the analysis significantly.			
Source: Wayne Perry & Associates 1994, p. 37.			

Road standards. The assessment against roads standards has been carried out by Russell Humble Council's Manager for Traffic Engineering. Assessment has been made using current Austroads (formerly NAASRA) standards. This assessment is attached at Appendix 5.

For the Blackhill Road/Western Access Road intersection, the most recent Council counts have been used (see Appendix 4). Council's Traffic Engineering *Road Standard Assessment* concludes (see Appendix 5):

'According to Austroads guidelines (1988, p. 42, *Figure 5.23a Warrants for Rural Turn Lanes*), a Type A intersection would suffice for this level of service (see Appendix 6). However, due to the nature of the road and the make-up of the traffic (i.e. a high proportion of heavy vehicles), the modified Type B right turn intersection as recommended in the EIS would be a more desirable treatment.'

The Austroads warrant for a Type B intersection is not met due to the low number of approaching vehicles per hour, though with a higher number of approaching vehicles the warrant would be met for the level of haulage trucks entering the quarry access road.

4.3 Benefit district - definition of the Special Contribution District

For the purposes of this Contributions Plan, a *Special Contribution District* has been designated, called the Blackhill Quarry Special Contribution District. The term Special Contribution District is used here to distinguish it from the 3 Urban and 3 Rural Contribution Districts designated under Council's other Contributions Plans.

The Blackhill Quarry Special Contribution District comprises:

- the total road reservation along Blackhill Road from its intersection with John Renshaw Drive (Main Road 588) to its intersection with Leneghans Drive;
- Lots 683 and 686 of DP 619758, Parish of Stockrington;
- Portion 70 and Lot 2 of DP 123949, Parish of Stockrington; and,
- Lot 1 of DP 536570 and un-numbered Lot DP 957782, Parish of Stockrington.

Contributions under this Plan can only be collected from development occurring on land in the above Portions and Lots in the Parish of Stockrington. Contributions can only be expended on works within the Blackhill Quarry Special Contribution District - specifically, Blackhill Road and its intersections with John Renshaw Drive, Leneghans Drive and the Western and Eastern Access Roads. This will ensure that the contributing development directly benefits from the contributions made.

4.4 Determination of contribution rates - capital road works

(i) Capital Works Program

A Capital Works Program has been set up to stipulate the road works required along Blackhill Road and the intersection with the Western Access Road. The works in this program are to be carried out by the proponent prior to development consent being issued. The power to require works in kind is contained in Section 94(2C)(b), which refers to 'material public benefit'. It is the Department of Planning's view that this section is the more appropriate section to deal with works in kind, as opposed to Section 90 and Section 91 (Department of Planning 1992, section 7.8, p. 14).

The only cash contribution to be paid regarding this part of the Plan is the contribution for the plan-making and Section 94 background study. It is

accepted practice to include such costs in the calculation of contribution rates (Department of Planning 1992, section 7.3, p. 13). A fee for Council inspection of the road works completed under the Capital Works Program may also be levied as standard Council practice.

The Capital Works Program is included in Appendix 1. Indicative cost estimates are included in this program for reference purposes only.

(ii) Formulae

The Blackhill Quarry development clearly causes the total demand for the road works in the program. This has been established in Section 4.2, above. Therefore it follows that the development must contribute the **full cost** of these works. Council stipulates that these works must be carried out in kind and in full prior to development consent being issued. The Section 94 study fee and any road works inspection fee must also be paid at this stage.

The contribution formula is:

$$S94 = (\text{works in kind } \Sigma \text{ CWP}) + (ST * I)$$

Where,

S94 is the Section 94 contribution for the quarry development.

(works in kind Σ CWP) refers to the satisfactory completion of all the works in kind stipulated in the Capital Works Program in Appendix 1.

ST is the total of the Section 94 study cost. The quantum is shown in Appendix 1.

I is the annual index, as defined in Clause 27 of the Plan. The monetary component will be indexed annually from the date of consent.

4.5 Determination of contribution rates - annual maintenance works

(i) Maintenance Works Program

The Maintenance Works Program lists all the maintenance, repair and upgrade works for which contributions may be levied under this part of the Plan. Some of these works are to be carried out on an annual basis, whereas others, such as resealing works will take place on a cyclical basis every 10 years. The 10 year

costs have been annualised for the purpose of the Maintenance Works Program and ease of contribution calculations.

These are the minimum works required to keep Blackhill Road at a satisfactory state of service. The frequency of maintenance works is indicated in the program. Resealing works will be conducted as sufficient funds are accumulated, but in the normal course of events should occur within 10 years of collection of funds. Should wear and tear be more severe than expected. The Maintenance Works Program may require reviewing.

The Maintenance Works Program is included in Appendix 2.

(ii) Formulae

As stated in Section 4.2 above (*Quarry operations and maintenance*), the quarry operation will only be required to contribute a fair **proportion** of the cost of these maintenance works. This is emphasised by the fact that these higher cost maintenance works would not occur if the development was not to occur.

The proportion will be on the basis of no net cost or benefit to Council and also on the estimate of 10% of heavy vehicle movements on Blackhill Road having origins and destinations at the poultry operations along the northern side of Blackhill Road. It is assumed that poultry operators' trucks use both the western and eastern sections of Blackhill Road.

Current Section 94 practice is to levy on a per tonne extracted basis. This method is used here. The Maintenance Works Program is based on the assumption of a pavement design life of 10 years, after which rehabilitation and resealing work will need to occur. This design period is based on the tonnage projections presented in the EIS (see Section 2.2, p. 16, above). If these targets are not achieved, due to market conditions or other factors, the design period will necessarily be lengthened due to the decreased wear and tear experienced. It would not be reasonable therefore to assume a flat maintenance contribution per annum but one that is based on actual tonnage extracted. Similarly, if output is increased over these annual averages, the design period will be reduced and hence a higher maintenance contribution is justified.

The contribution formula is based on the average annual tonnage calculated in Section 2.2 of this report (p. 16, above), derived from the production figures in the EIS (Wayne Perry & Associates 1994, p. 6). This is approximately 140,000 tonnes of gravel and fill per year.

The contribution formula is:

$$S94 = ((MWP * P) * I) / ATE$$

Where,

S94 is the Section 94 contribution per tonne.

MWP is the total annualised cost of the Maintenance Works Program.

P is the proportion of pavement damage attributable to the heavy quarry trucks. This has been estimated at 90%.

I is the annual index, as defined in Clause 28 of the Plan.

ATE is average planned tonnage to be extracted from the Blackhill Quarry as presented in the EIS. As calculated above, this figure is 140,000 tonnes per annum.

(iii) Calculating the Contribution

The maintenance contribution for the quarry operation must be calculated annually on presentation of adequate returns stipulating the amount of tonnage extracted in the previous financial year.

Calculating the per tonne rate:

From the formula shown in (ii), the per tonne rate for the first year of operation (i.e. $I = 1.00$) is as follows:

$$((\$19,820 * 0.90) * 1) / 140,000 \text{ tonnes}$$

$$\$17,838 / 140,000 \text{ tonnes}$$

$$= \$ 0.13 \text{ per tonne}$$

Calculating the total contribution:

The quantum levied is calculated as follows:

$$S94 = (\$0.13 * I) * TE$$

Where,

S94 is the Section 94 contribution per annum.

\$0.13 is the road maintenance royalty per tonne extracted.

I is the cumulative annual index, as defined in Clause 28 of the Plan. The royalty per tonne can either be indexed annually itself and used in the following year's calculations as the base royalty rate or a cumulative index used instead. The result is the same either way.

TE is total tonnage extracted from Blackhill Quarry, Parish of Stockrington, during the period 1 July to 30 June during the previous financial year.

4.6 Timing of payment of Section 94 contributions

Capital works contribution

All works in kind specified in the Capital Works Program in Appendix 1 must be completed prior to the development consent being issued for the operation and extension of quarrying operations at Blackhill Quarry. At this time, the monetary contributions listed in this Program must be paid also. The monetary contribution will be indexed annually from the time of adoption of this plan until the contribution is paid in full. Since these are already expended items, the index to be used is the annual *Private Borrowing Rate for Local Government* applicable at the time of indexation.

Maintenance works contribution

The annual Section 94 contribution for road maintenance is payable on 15 August for the previous financial year's operations (July 1 to 30 June). The August date allows for drafting of returns and publication of indexes.

By the 31 July each year, the quarry operator must supply details of the previous 12 months extraction and the tonnage transported along Blackhill Road to either John Renshaw Drive (Main Road 588) or Leneghans Drive. This information should be corroborated by any royalty or statistical reports (such as the *Summary of Extraction Report* required to be lodged with the Department of Conservation and Land Management every 12 months).

The per tonne maintenance contribution will be indexed annually on the basis of the Australian Bureau of Statistics *Price Index of Material Used in Building Other Than House Building* (Cat. No. 6407.01).

5 ASSESSMENT AGAINST CONTRIBUTION PRINCIPLES

The contributions satisfy the key principles outlined in Section 3.4, above.

5.1 Nexus

The continuation and extension of quarrying operations at Blackhill Quarry will create a demand for a higher level of service on Blackhill Road, particularly at the intersection with the Western Access Road, than would exist in the absence of the quarry. The need arising from heavy quarry traffic generation is demonstrated in Section 4.1, above. Section 4.2 details the warrants for the intersection upgrade and maintenance works detailed in the works programs. Nexus is fully established in terms of safety, design standards, the amenity of adjoining residents and excessive wear and tear. The quarry development fully causes the demand for the higher standard of intersection on Blackhill Road and thus should be required to conduct the works specified.

5.2 Fair apportionment

The costs of both works programs have been fairly apportioned. Firstly, the development completely causes the demand for the capital works specified. Secondly, Council has no program or plan to upgrade this intersection. No other sources of funds are available to carry out the works. As such the Capital Works Program has been fairly apportioned on a full cost basis.

It can confidently be stated that the heavy vehicles servicing the quarry will cause at least 90% of the wear and tear on Blackhill Road. This recognises that the poultry operators' truck also have an impact on maintenance too. The quarry operator pays on the basis of actual tonnage extracted. This is fair and reasonable as maintenance payments will then be in direct proportion to the damage done and to the extended or reduced life of the pavement. Thus, all the contributions have been fairly apportioned.

5.3 Reasonableness

It is reasonable to require these contributions for capital road works and maintenance for the following reasons:

- to minimise negative impacts (amenity, safety, excessive road damage) on adjoining residents and landuses from quarry trucks using Blackhill Road;

- the contributions internalise into the operating costs of the quarry, external costs that would otherwise be borne by third parties (Council, local residents);
- the road works and maintenance program benefit the quarry development by providing ease of access and the appropriate road standard for the operations that will occur; and,
- there are no over-riding social reasons as to why the quarry operator should not contribute towards these 'external' costs.

On this basis, the contributions for road works and maintenance are considered reasonable.

6 MONITORING THE SECTION 94 PROGRAM

6.1 Key issues

One of the keys to successful administration of a Section 94 program is careful and regular monitoring. There should be a more or less formal process of review and monitoring annually when the quarry returns are submitted.

The following issues should be taken into account:

- changes in quarry output or methods of operation,
- changes in rural road cost construction,
- changes in road construction standards,
- observed pavement damage and altered traffic conditions in the vicinity,
- the impact of quarry truck movements on the amenity of adjoining residents and landuses,
- the progress of the Maintenance Works Program.

This may lead to additions or alterations to the Capital and Maintenance Works Programs and adjustments to contribution rates. This may necessitate amendment and re-exhibition, according to Clause 31(1) of the Environmental Planning and Assessment Regulation 1994. Indexing of contribution rates is embedded in the Plan and consequently does not require re-exhibition.

7 CONCLUSION

This Contributions Plan for Extension of Operations at Blackhill Quarry, Parish of Stockrington, Blackhill, in the City of Cessnock has been prepared in accordance with the 1992 Department of Planning Manual and the Environmental Planning and Assessment Regulation 1994 Part 4.

The contributions that have been determined have been carefully assessed and adhere to the principles of nexus, fair apportionment and reasonableness. Capital and Maintenance Works Programs have been prepared for the increased road demands from heavy vehicles. Procedures for on-going management of the Section 94 program are stated. Matters for inclusion in annual reviews are also highlighted.

This Contributions Plan will ensure Council funds are not adversely affected by the quarry operations and that the amenity of existing residents and landuses is maintained. Both capital and maintenance works will be of direct benefit to the quarry operator and assist in the safe and efficient extraction of the material.

APPENDIX 1

CITY OF CESSNOCK

**BLACKHILL QUARRY
PARISH OF STOCKRINGTON**

SECTION 94 CONTRIBUTIONS PLAN

CAPITAL WORKS PROGRAM

CITY OF CESSNOCK**BLACKHILL QUARRY
PARISH OF STOCKRINGTON, BLACKHILL****CAPITAL WORKS PROGRAM**

Works to be completed by the applicant prior to issuing the development consent for the Blackhill Quarry, Parish of Stockrington.

CONTRIBUTION DISTRICT	In kind works	Cost estimate \$
1 BLACKHILL QUARRY SPECIAL CONTRIBUTION DISTRICT		
1.1 Construct Modified Type B right turn intersection at the junction of Blackhill Road and the Western Access Road to the Blackhill Quarry	•	100,000
1.2 Section 94 Contributions Plan - plan-making and background study		4,500
1 TOTAL BLACKHILL QUARRY SPECIAL CONTRIBUTION DISTRICT:		
Value of in-kind works:		\$100,000
Total monetary contribution:		\$4,500
Total value of Capital Works Program (1995 dollars):		\$104,500

APPENDIX 2

CITY OF CESSNOCK

**BLACKHILL QUARRY
PARISH OF STOCKRINGTON**

SECTION 94 CONTRIBUTIONS PLAN

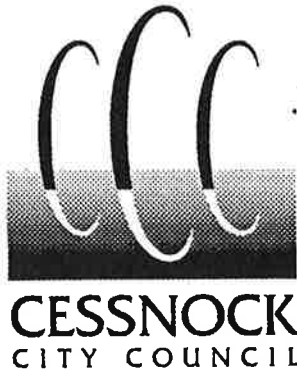
MAINTENANCE WORKS PROGRAM

CITY OF CESSNOCK**BLACKHILL QUARRY
PARISH OF STOCKRINGTON, BLACKHILL****MAINTENANCE WORKS PROGRAM
Maintenance / Rehabilitation Works Program - Annualised Costs****CONTRIBUTION DISTRICT**

		Cost 1995 \$
2 BLACKHILL QUARRY SPECIAL CONTRIBUTION DISTRICT		
2.1 Work:	Re-grading works	
Location:	Western section of Blackhill Road (gravel pavement)	
Frequency:	Every 3 months	
Annual cost:	25 tonnes of gravel per visit; 100 tonnes of gravel per year.	8,600
2.2 Work:	Pothole maintenance one day per year	
Location:	Eastern section of Blackhill Road (sealed pavement)	
Frequency:	One day per year	
Annual cost:	Two tonnes of coldmix plus labour costs	2,220
2.3 Work:	Resealing	
Location:	Eastern section of Blackhill Road (sealed pavement)	
Frequency:	Every 10 years	
Total cost:	1995 dollars	90,000
Annualised cost:	Bitumen seal plus labour costs	9,000
2 TOTAL BLACKHILL QUARRY SPECIAL CONTRIBUTION DISTRICT:		\$19,820

APPENDIX 3

**ASSESSMENTS OF TRANSPORT IMPACTS
MANAGER CLASSIFIED & RURAL ROADS
CESSNOCK CITY COUNCIL**



MEMO TO :- **ROD SANDELL**

SUBJECT :- **WOODBURY'S QUARRY - BLACKHILL ROAD**

FILE :-

I have carried out an assessment of the maintenance costs for Blackhill Road in the two (2) directions from Woodbury's quarry.

A. Western section of gravel road.

It is assumed that we would grade the road on each maintenance visit to the area, hence four times a year and that we would place one hundred (100) tonnes of gravel each year. Cost to do this is \$8,600.00 per year in 1995 dollars.

B. Eastern section of sealed road.

It is assumed that would carry out pothole maintenance a total of one day per year using two (2) tonnes of coldmix, and would reseal the road every ten years. Cost to do this is \$2,200.00 per year for patching and \$ 90,000.00 every ten (10) years for resealing , both in 1995 dollars.

The actual costs place in the conditions should relate this to the proportion of movements in each direction and should be a rate per tonne of gravel produced.

A handwritten signature in black ink, appearing to read "Bill Pigram".

(BILL PIGRAM),
MANAGER CLASSIFIED & RURAL ROADS.

March 29,1995

8 REFERENCES

Austroads 1988, *Guide to Traffic Engineering Practice - Part 5: Intersections at Grade*, Austroads, Haymarket, NSW.

Austroads 1989, *Rural Road Design - Guide to the Geometric Design of Rural Roads*, Austroads, Haymarket, NSW.

Austroads 1992, *Pavement Design Guide*, Austroads, Haymarket, NSW.

Department of Planning 1992, *Section 94 Contributions Plans Manual*, Department of Planning, Sydney.

Roads and Traffic Authority 1988, *Rural Design Guide*, Roads and Traffic Authority, NSW.

Shoalhaven City Council 1994a, *Contribution Plan Area 1: Amendment No. 4*, Shoalhaven City Council, NSW.

Shoalhaven City Council 1994b, *Contribution Plan Area 1: Amendment No. 5*, Shoalhaven City Council, NSW.

Wayne Perry & Associates 1994, *Environmental Impact Statement for the Operation and Extension of the Blackhill Quarry, Blackhill, NSW*, prepared for Woodburys Haulage and Earthmoving Pty Ltd, Blackhill, NSW, 2322.

APPENDIX 4

CESSNOCK CITY COUNCIL

**TRAFFIC COUNT - BLACKHILL ROAD
9 FEBRUARY 1995 - 26 FEBRUARY 1995**

HOURLY TRAFFIC COUNTS - BLACKHILL ROAD - ALL VEHICLES

WEEKENDING SUNDAY 12 FEBRUARY 1995

Time	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	weekday average	7 day average
1:00					0	0	1	0	0
2:00					0	0	2	0	0
3:00					0	0	1	0	0
4:00					0	0	0	0	0
5:00					1	0	0	1	0
6:00					13	5	0	13	6
7:00					57	11	1	57	23
8:00					94	46	3	94	48
9:00					108	73	4	108	62
10:00					81	57	13	81	50
11:00					98	62	10	98	57
12:00					86	56	8	86	50
13:00				65	67	72	6	66	53
14:00				66	82	50	7	74	51
15:00				62	78	33	9	70	46
16:00				60	62	13	12	61	37
17:00				63	39	13	13	51	32
18:00				27	17	9	9	22	16
19:00				14	9	12	0	12	9
20:00				4	4	4	0	4	3
21:00				3	5	4	1	4	3
22:00				7	4	1	2	6	4
23:00				2	2	4	0	2	2
0:00				0	1	1	0	0	0
TOTALS:				373	908	526	102	N/A	N/A

HOURLY TRAFFIC COUNTS - BLACKHILL ROAD - ALL VEHICLES

WEEKENDING SUNDAY 19 FEBRUARY 1995

Time	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	weekday average	7 day average
1:00	0	0	0	0	1	1	0	0	0
2:00	0	0	0	0	0	0	2	0	0
3:00	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
5:00	5	0	0	0	0	0	0	1	0
6:00	14	13	11	5	5	0	1	10	7
7:00	24	45	45	20	16	3	3	30	22
8:00	44	69	89	25	30	6	3	51	38
9:00	52	79	80	20	19	9	3	50	37
10:00	35	66	63	9	11	8	5	37	28
11:00	45	65	69	12	17	3	9	42	31
12:00	51	57	60	9	19	6	8	39	30
13:00	42	49	54	11	14	13	7	34	27
14:00	39	64	42	13	12	9	8	34	27
15:00	47	70	27	18	18	8	14	36	29
16:00	36	57	27	22	17	14	21	32	28
17:00	30	60	37	30	19	16	9	35	29
18:00	14	22	13	18	13	8	9	16	14
19:00	14	12	6	9	16	11	10	11	11
20:00	6	4	4	2	5	7	4	4	5
21:00	4	6	4	5	1	1	2	4	3
22:00	4	3	2	3	2	4	1	3	3
23:00	0	2	2	4	0	4	0	2	2
0:00	2	0	3	0	1	0	0	1	0
TOTALS:	508	743	638	235	236	131	119	472	373

HOURLY TRAFFIC COUNTS - BLACKHILL ROAD - ALL VEHICLES

WEEKENDING SUNDAY 26 FEBRUARY 1995

Time	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	weekday average	7 day average
1:00	0	0	0	0	0	0	0	0	0
2:00	0	0	0	1	0	0	0	0	0
3:00	0	1	0	0	0	0	0	0	0
4:00	0	1	1	0	0	0	0	0	0
5:00	1	1	0	1	1	0	0	0	0
6:00	7	18	11	18	12	0	0	13	9
7:00	23	33	50	52	11	0	0	34	24
8:00	41	72	89	95	50	0	0	69	50
9:00	41	84	75	100	35	0	0	67	48
10:00	15	82	65	98	38	0	0	60	43
11:00	19	72	80	89	0	0	0	52	37
12:00	31	59	74	65	0	0	0	46	33
13:00	44	63	69	42	0	0	0	44	31
14:00	42	65	57	29	0	0	0	39	28
15:00	45	62	75	36	0	0	0	44	31
16:00	39	75	83	26	0	0	0	45	32
17:00	36	55	41	33	0	0	0	33	24
18:00	18	16	11	11	0	0	0	11	8
19:00	14	12	11	9	0	0	0	9	7
20:00	7	5	7	6	0	0	0	5	4
21:00	3	3	6	3	0	0	0	3	2
22:00	2	2	2	4	0	0	0	2	1
23:00	3	4	2	2	0	0	0	2	2
0:00	2	0	0	0	0	0	0	0	0
TOTALS:	433	785	809	720	147	0	0	579	413

APPENDIX 5

**ROAD STANDARD ASSESSMENT
MANAGER TRAFFIC ENGINEERING
CESSNOCK CITY COUNCIL**

Blackhill Quarry

Intersection treatments

Blackhill Road / Blackhill Quarry intersection (Western Access Road)

Traffic count - weekending 19 February 1995 (attached at Appendix 4):

Average daily traffic	373 vehicles per day
Average weekday traffic count	472 vehicles per day

This equates to approximately 50 vehicles per hour - peak hour.

Projected traffic generation - 110 truck movements per day.

This is approximately 14 movements per hour.

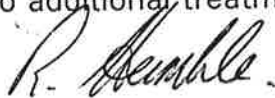
According to Austroads guidelines (1988, p. 42, *Figure 5.23a Warrants for Rural Turn Lanes*), a Type A intersection would suffice for this level of service (see Appendix 6). However, due to the nature of the road and the make-up of the traffic (i.e. a high proportion of heavy vehicles), the modified Type B right turn intersection as recommended in the EIS would be a more desirable treatment.

Blackhill Road / John Renshaw Drive intersection

Traffic volumes on Main Road 588 (John Renshaw Drive) are approximately 16,000 vehicles per day. The additional impact that the quarry traffic would make to this intersection would be negligible. Therefore, no additional treatment is warranted.

Blackhill Road / Leneghans Drive

The existing intersection treatment at Leneghans Drive would successfully cope with the additional traffic generated by the Blackhill Quarry. Therefore, no additional treatment is warranted.



R. Humble

Manager - Traffic Engineering
8 March 1995

APPENDIX 6

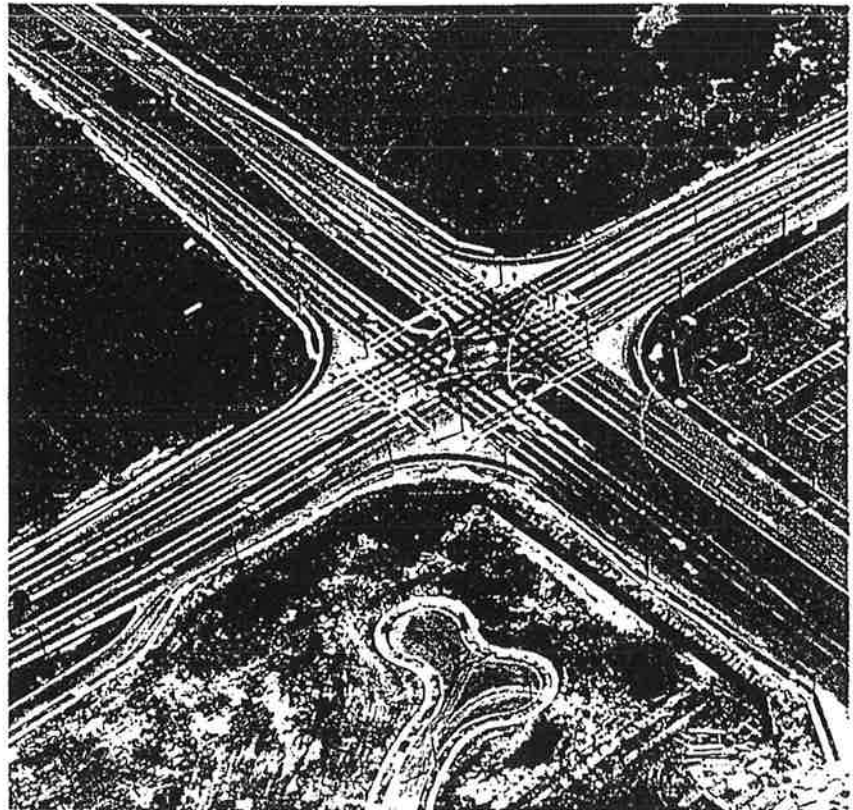
**EXTRACTS FROM
AUSTROADS PUBLICATIONS**

**RELEVANT TO THE
SECTION 94 CONTRIBUTIONS PLAN**

Guide to
Traffic Engineering Practice
Intersections at Grade

PART

5



AUSTROADS 1988