

YARROWLUMLA COUNCIL

SECTION 94 CONTRIBUTION PLAN (NO. 2)

FOR PROVISION OF ACCESS ROADS

**ORIGINALLY ADOPTED BY COUNCIL ON 28 JUN 1994
PLAN CAME INTO EFFECT ON 1 JUL 1994
AMENDMENT NO. 5 CAME INTO EFFECT ON 31 MAR 2000**

**THE FOLLOWING AMENDMENTS HAVE BEEN
ADOPTED BY COUNCIL**

AMENDMENT NO. 1	- ROYALLA CATCHMENT ADDED (9/6/98)
AMENDMENT NO. 2	- CLARE LANE ADDED (9/6/98)
AMENDMENT NO. 3	- JOE ROCKS ROAD AREA ADDED (9/6/98)
AMENDMENT NO. 4	- SUTTON RURAL RESIDENTIAL ADDED (9/6/98)
AMENDMENT NO. 5	- VARIOUS SUBSECTIONS (28/3/00)

CONTENTS

EXECUTIVE SUMMARY

- E 1.0 Background
- E 2.0 Basis of Nexus
- E 3.0 Calculation of Contributions (in Rural & Rural Residential Areas)
 - E 3.1 Upgrading the Carrying Capacity of Existing Road Pavements Leading to new Developments
 - E 3.2 Site Specific Road Construction Projects (Cases 1&2 contributions)
- E 4.0 Determining Total Contribution Payable in Rural Based Areas
- E 5.0 Schedule of Contributions by Development Type
- E 6.0 Annual Cost Adjustment
- E 7.0 Complying Development

PLAN IN DETAIL

- P 1.0 Preface
- P 2.0 Introduction
- P 3.0 Definitions
- P 4.0 Road Hierarchy Required
- P 5.0 Extent of Impact of New Developments on Access Roads
- P 6.0 Nexus
 - P 6.1 For CASE 1 – New Road and CASE 2 – Road Upgrading
 - P 6.2 For CASE 3 – Pavement Upgrading
- P 7.0 Assessment of Contributions
 - P7.1 Traffic Based
 - P7.2 Apportionment
 - P7.3 Costs
 - P7.4 Contribution Rates
 - P7.5 Determination of Section 94 Levy/Lot
 - P7.6 Special Cases
 - P7.6.1 Extractive Industries & Landfill Operations
 - P7.6.2 Bungendore Roundabouts
 - P7.6.3 Dual Occupancy Dwellings
 - P7.6.4 Bed & Breakfast Operations
 - P7.6.5 Villages
 - P7.6.6 Unsealed Cul-de-sac in 1(d) Zones
 - P7.6.7 Hutchinson Place
 - P7.6.8 Fernloff Road
 - P7.6.9 Maximum contributions
 - P7.6.10 Minimum contributions
 - P7.6.11 Annual Adjustment
 - P7.7 Royalla Catchment
 - P7.8 Clare Lane
 - P7.9 Joe Rocks Road Area
 - P7.10 Sutton Rural Residential Catchment Area
 - P7.11 Woolshed Lane

- P 8.0 Works Program
- P 9.0 Payment of Contributions
- P 10.0 Accountability

ATTACHMENTS

1. Rural Residential Road Standard Schedule
2. Non-Urban 1A Roads Standards Schedule
3. Graph – Road pavement life
4. Typical Formation Cross-sections
5. Pavement Construction/Reconstruction Costs
6. Works Program
7. Examples of S94 Contributions for Sample Locations
8. Why is the Requirement for Developers to Pay a CASE 3 Section 94 Contribution for Pavement Upgrading not Already Covered in Rates?
9. Cost of Pavement Vs CESAs
10. Pavement Thickness Required

APPENDIX A

Traffic Generation Probability Maps

MAPS

- 1 S94 Road Catchments
- 2 Designated Road Hierarchy

REFERENCES

ARRB (Australian Road Research Board) (1993). *Unsealed Local Roads Manual : Guidelines to Good Practice*, sponsored by Commonwealth Office of Local Government and Department of Defence – Army, May 1993 (ARRB: Vermont South, Victoria).

AUSTROADS (1992). *Pavement Design Guide : A Structural Guide to Design*, (AUSTROADS: Sydney, New South Wales).

MULHOLLAND, P.J. (1989). *Into a New Age of Pavement Design : A Structural Design Guide for Flexible Residential Street Pavements*, Special Report 41, (ARRB: Vermont South, Victoria).

M.G. LAY (1985) *Source Book for Australian Roads* (ARRB: Vermont South, Victoria).

NSW RTA (DMR) MR FORM 76 (1980). *Pavement Thickness Design*.

DUAP (Department of Urban Affairs and Planning) (1997). *Section 94 Contributions Plans Manual Second Edition*.

TIM C. MARTIN (Sept 99) ARRB Transport Research. *Review of Section 94 Plans for Roads for Yarrawumla Shire Council*.

THE FOLLOWING AMENDMENTS HAVE BEEN ADOPTED BY COUNCIL

AMENDMENT NO. 1	Royalla Catchment – 9 June 1998
AMENDMENT NO. 2	Clare Lane – 9 June 1998 (amended 28 March 2000)
AMENDMENT NO. 3	Joe Rocks Road Area – 9 June 1998
AMENDMENT NO. 4	Sutton Rural Residential Catchment Area – 9 June 1998
AMENDMENT NO. 5	Major changes – 28 March 2000, include:

- a. Executive Summary added
- b. Expansion and further explanation of Sections P2.5, P6.2, P7.1, P7.2, P7.3, P7.4 and P7.6
- c. New sections added at P2.7, P 2.8, P7.6.3, P 7.6.4,P7.11 and Attachment 9.
- d. P7.6.11 - Name change of Index to Country Operations Roads and base date for annual adjustments confirmed as March 1994.
- e. Attachment 6 – Works Program revised
- f. Sub-sections P7.7, P7.8, P7.9 and P7.10 added to body of the Plan. Prices and rates backdated to March 1994
- g. P 7.7 Royalla Catchment the total lots in Royalla Estate increased from 170 to 200 requiring an adjustment to contribution rates.
- h. P 7.8 Clare Lane Case 2 contribution amended to the amount agreed during the hearing vs Karalee Pty Limited in the Land and Environment Court in February 2000.
- i. P7.10 Sutton Road Catchment further amended based on new knowledge of actual lot numbers and layout resulting in the standard required for the link road being reduced.
- j. Sub-section P7.11 added.
- k. In Section P9.0 arrangements for payments altered including allowing deferment pending sale of individual lots.
- l. Minor variations in Road Standard Schedules and subsequent minor adjustments to Section 94 calculations
- m. Assessed S94 Contributions Tables added to Appendix A.

Annual Adjustments (based on RTA's Road Cost Index (Country Operations Roads))

Date March 1994 (base date)	Annual Change (yr to yr)	Cumulative Change from March 1994
At July 1995	+ 3.85	+ 3.85%
At July 1996	+ 3.62	+ 7.61%
At July 1997	+ 2.66	+ 10.47%
At July 1998	+ 3.70	+ 14.50%
At July 1999	+ 2.22	+ 17.13%
At July 2000	+ 2.55	+ 20.12%
At July 2001	+ 3.50	+ 24.31%

SECTION 94 PLAN - ROADS

EXECUTIVE SUMMARY

E 1.0 BACKGROUND

Yarrowlumla Council's corporate vision is '**Yarrowlumla Shire-The Best in Rural Living**'

One of the objectives adopted by Council in its Management Plan to focus on this vision is the encouragement of a range of lifestyle choices including the promotion of rural residential developments within commuting distance of nearby towns and cities as well as the enhancement of the shire's urban centres. It will also protect viable farming pursuits and encourage other economic growth including low impact commercial and industrial developments.

Rural residential living especially has proven to be very popular, due mainly to the shire's proximity to Canberra and a lack of opportunity for such development within neighbouring ACT. However, as a result of the spread of rural residential developments, the great number of rural based building allotments being created (now over 2500 lots catering for over 75% of the shire's population) and the relatively large lot sizes (mostly 2-16ha) with long road frontages, an extensive, good standard access road network is required and expected by residents who live in these areas. Inherently, such a road network is very expensive to provide.

E 2.0 BASIS OF NEXUS

The reality is that most of the existing roads within the shire that need to be used with the intensification and expansion of this rural based development are aging and under stress, or are otherwise not properly formed, and do not have adequate carrying capacity to cater for the corresponding increase in traffic on these roads.

The development of new subdivisions and the traffic they generate causes:

- A. Existing roads to deform and fail at an earlier time with the useful life of pavements being cut-short, especially in rural areas where most of the pavements on the main feeder roads are old and relevantly thin. Strengthening of these pavements is required to ensure the structural integrity of these roads into the future. (*Case 3 Impact-General Pavement Upgrading on Approach Routes*);
- B. A need for some currently deficient roads to be upgraded to a higher standard. For example, a basic dirt access track off a main road may need to be constructed to a properly aligned, bitumen sealed standard with good drainage. (*Case 2 Impact-Site Specific Road Upgrading Projects*);
- C. Occasionally a new link road may be required to join neighbouring subdivisions. (*Case 1 Impact New Road Projects*).

This demand for upgraded road infrastructure results in the need for large outlays of money which can be attributable, at least in part, to new development.

Contribution by new development towards the cost of these works is considered justified. The amount payable may include a contribution under Case 3 alone or a combined contribution under Cases 1,2 &/or 3 depending on the extent that particular roads will be used when accessing a development.

EXECUTIVE SUMMARY

SECTION 94 PLAN - ROADS

Council's policy is therefore to require any new developments to pay a road contribution, the amount of which will depend on the level of demand that the development places on the road network. This will be assessed in terms of traffic volume, percentage of heavy vehicles, the standard of road(s) required and the lengths of roads travelled.

E 3.0 CALCULATION OF CONTRIBUTIONS (in Rural & Rural Residential Areas)

Contributions will be taken towards:

E 3.1 Upgrading The Carrying Capacity Of Existing Road Pavements Leading To New Developments (Case 3 Contributions-Refer To Section P 7.0)

Council has developed a methodology which has been scrutinised by **Australian Road Research Board Transport Research** (Ref.,ARRB TR, Martin, Sept 1999) and confirmed as being sound and fair in it's determination of a reasonable level of contributions to be charged for the use/consumption of existing pavements by new developments.

The contributions are based on apportioning costs to reflect the relative usage of roads by both the traffic attributable to new developments and traffic attributable to existing users.

The main form of development in the shire is subdivision creating new lots. Developments other than subdivisions will involve contributions calculated in terms of new lot equivalents by comparing the predicted traffic movements for each. The general conversion factors used are 1 lot is equivalent to 8 vehicles per day for total traffic predicted or 1 ESA per week for heavy vehicles; which ever is the greater. Haulage associated with extractive industries and landfilling is a special case. (See section P 7.6)

The methodology has involved breaking up the shire into 17 separate catchments as depicted on Map 1.

The road hierarchy required to cater for the potential development of the shire under existing planning provisions has been determined and is illustrated on Map 2.

The particular road standards adopted by Council for various traffic volumes are defined in Attachments 1 & 2.

The contributions are based on the adopted rates calculated in sub-section P 7.4 and summarised in the following table:

Road Standard	Apportionment	Adopted Rate
Type 8 (rural, unsealed)	1/15 th of costs with 15 lots being the maximum served.	\$2,320/km/lot
Type 9 (rural, unsealed)	1/30 th of costs with 30 lots being the maximum served.	\$1,370/km/lot
Type 4 (sealed)	1/40 th of costs with 40 lots being the maximum served.	\$1,000/km/lot
Type 5 & 10 (sealed)	1/100 th of costs with 100 lots being the maximum served.	\$1,000/km/lot
Type 6 (sealed)	1/310 th of costs with 310 lots being the maximum served.	\$580/km/lot

EXECUTIVE SUMMARY

SECTION 94 PLAN - ROADS

Type 7 (sealed)	1/550 th of costs with 550 lots being the maximum served.	\$390/km/lot
RR 7607 (Bung/Macs Reef Link)	1/650 th of costs with 650 lots being the maximum served.	\$340/km/lot
Bungendore R/abouts	1/2500 th of costs	\$240/lot

The above rates are multiplied by the lengths of the roads travelled. Where access to a particular location is likely to be from more than one direction the figure will be adjusted by a factor relating to the assessed probability for those different movements. The individual Traffic Probability Maps contained in Appendix A indicate these factors. These maps also indicate the specific S94 contribution payable for any location within the shire. A minimum contribution of \$920/lot (eg. for a location adjacent to a highway) and a maximum of \$12000/lot (eg. in more remote areas), have been adopted under this part.

The sum of contributions paid will be expended to the best advantage of the roads within the particular catchment in which the funds have been collected. Where possible, Council will add it's own revenue funds on local roads and available RTA funds on regional roads to maximise the scope and benefits of the projects undertaken. Based on expected development patterns various pavement reconstruction/rehabilitation works have and will be undertaken over the years on failing bitumen sections of Burra Rd, Old Cooma Rd, Captains Flat Rd(RTA assisted), Bungendore Rd (RTA assisted), Macs Reef Rd(RTA assisted), Weeroona Dr, Norton Rd and Wallaroo Rd especially. Widening, gravel resheeting and minor improvement works are intended on Smiths Rd, Williamsdale Rd, Urila Rd, Gidleigh Lane, Hoskinstown Rd and Millpost Lane, subject to contributions actually being collected at these locations. The latest works program is indicated in Attachment 6.

E 3.2 Site Specific Road Construction Projects (Cases 1&2 contributions)

Subdivisions that will gain access to new lots by using any of the following deficient roads shall pay the contribution indicated below towards the upgrading of the particular road used, in addition to any contribution required under E3.1 above. (Case 3). The contributions under this part are generally for the upgrading of a road from an unsealed to a sealed standard in a rural residential zone. The road is usually at or just before the address of the subdivision or development being undertaken.

Road	Reference Sub-section	Contribution
Summerhill Road	P 7.6.6.1	\$8,330/lot
The Forest Road – end section	P 7.6.6.2	\$7,500/lot
Wanna Wanna Road	P 7.6.6.3	\$13,000/lot
Hutchinson Place (N.B. Dedication as public road is a pre-requisite).	P 7.6.7	\$20,000/lot

EXECUTIVE SUMMARY

SECTION 94 PLAN - ROADS

Fernloff Road	P 7.6.8	\$25,000/lot
Old Cooma Road		
a. for lots in Royalla Development	P 7.7	\$1,960/lot
b. for precinct between Burra Rd and ACT border.	P 7.7	\$8,940/lot
Clare Lane	P 7.8	\$20,000/lot
Joe Rocks Road	P 7.9	\$20,090/lot
Old Goldmines Road (in 1d zone)	P 7.10	\$21,450/lot
Bidges Road		
a. Federal Highway to Hickey Rd	P 7.10	\$1,870/lot
b. Hickey Rd to Old Goldmines Rd	P 7.10	\$760/lot
Hickey Road Link (Case 1)	P 7.10	\$690/lot
Woolshed Lane	P 7.11	\$18,430/lot
Williamsdale Road 0-0.3 km	Attachment 6	\$1,300/lot

E 4.0 DETERMINING TOTAL CONTRIBUTION PAYABLE IN RURAL BASED AREAS

By following the steps listed below the total S94 contribution payable for each lot created in a new subdivision in a rural area can be determined:

- a) With reference to Map 1 determine the S94 catchment in which the new subdivision is located.
- b) Go to the Traffic Probability Maps for that catchment in Appendix A and select the appropriate Location map.
- c) Use the appropriate abridged formula provided there to calculate the Case 3 contribution towards pavement upgrading on access roads leading to the development site. Alternatively the contribution can be determined using the long hand calculation illustrated by the example in Attachment 7. It will also be necessary to refer to Map 2 (to identify the road categories travelled) and to E3.1 (for the road contribution rate). Distances will also need to be determined. Note the maximum (\$12000/lot) and minimum (\$920/lot) amounts set.
- d) Any amounts payable under E3.2 (for road upgrading at or near the site) will also be indicated on the Location Map.
- e) Add the contribution determined under E3.1 to the contribution determined under E3.2 (if applicable) for the total amount payable as at 1 July 1994.
- f) Determine final amount payable by multiplying this amount by the current Road Cost Index indicated on the front cover or otherwise available by ringing Council's Operations & Works Office.

SECTION 94 PLAN - ROADS

E 5.0 SCHEDULE OF CONTRIBUTIONS BY DEVELOPMENT TYPE

Type of Development	Contribution Rates (dependent on location)
Subdivision	A. Urban Bungendore \$920/lot Bungendore North \$470/lot Captains Flat \$680/lot Michelago \$680/lot Sutton \$680/lot B. Rural Locality Based - Summarised in tables contained in Appendix A
New Residences	Same as for subdivision; except any new single residence being constructed on a lot for which a contribution has already been paid at the subdivision stage will be exempt.
Dual Occupancies	No contribution where total number of bedrooms between the two dwellings is 5 or less. Where total bedrooms exceeds 5, the contribution will be number of bedrooms in excess of 5 divided by 5 to convert to lot equivalents.
Bed & Breakfasts	1/14 th of an equivalent lot for each bedroom.
Extractive Industries	Refer to P 7.6.1
Landfilling	Refer to P 7.6.1
Other developments	Contributions will be calculated in terms of new lot equivalents by comparing the predicted traffic movements for the new development to that predicted for a new lot in a subdivision (refer to P 7.1)

E 6.0 ANNUAL COST ADJUSTMENT

All contribution rates are based on costs as at March 1994 when the Plan was originally prepared. The amount payable needs to be adjusted in accordance with subclause P 7.6.11 to account for increases in the Road Cost Index to the current date. (The latest increase is indicated on the front cover).

E 7.0 COMPLYING DEVELOPMENT

Accredited Certifiers are obliged to impose on complying developments a condition requiring the payment of Section 94 contributions where these are required under the provisions of this Plan.

SECTION 94 CONTRIBUTION PLAN (NO. 2)

FOR PROVISION OF ACCESS ROADS

PLAN IN DETAIL

Amended 28 March 2000

SECTION 94 CONTRIBUTIONS PLAN FOR THE PROVISION OF ACCESS ROADS TO SERVE NEW DEVELOPMENTS PLAN IN DETAIL

P 1.0 Preface

Council policy is to levy Section 94 contributions under Section 94 of the Environmental Planning and Assessment Act 1979, from subdividers and/or developers for roads which it has a responsibility to maintain, viz. Access roads serving new developments. Most new lots will be served by the existing road network which will be affected by any increase in traffic. In addition some new roads and road upgrading will need to be constructed at the full cost of development or apportioned to developments based on usage.

The preparation of a Roads Section 94 Plan that is appropriate to Yarrawlumla Council is a special case when compared with most other Councils.

The methodology adopted needs to reflect the special circumstances that impinge on the future of road asset provisions within the Shire.

These special circumstances are associated with the following:

- the consequence of Council allowing a large proportion of its population ($\approx 75\%$) to live in rural areas on mostly 2-16 ha lots;
- recognition that the demand for rural residential lots will continue due to the Shire's immediate proximity to a thriving Canberra and the ability for residents of the Shire to commute to work in the ACT and to be readily serviced by commercial, industrial and educational facilities of Canberra, Queanbeyan and the villages of the Shire;
- the realisation that the creation of dispersed high quality rural residential subdivisions requires an extensive high standard and efficient road network;
- the appreciation that the existing road network is already under stress. It is showing the signs of depreciation associated with usage and over usage. Provision needs to be made for road and road pavement upgrading;
- the acknowledgment of Council's Mission Statement of 'A Community Working Together to Achieve the Best in Rural Living' and especially its objectives relating to roads.'

Council on 25 June 1993, achieved the implementation of a new planning scheme allowing previously existing Rural 1(c) zones to be amended to Rural 1(d) zones. This has had the effect of allowing the creation of an extra 200-300 new lots in the new zones at Burra (S94 Catchment 2), Widgiwa (Catchment 4) and Bywong (Catchment 6). This means that a significant amount of new development in the rural areas has and will be the subdivision of existing lots into mainly one or two extra lots but sometimes more lots. In addition there remains considerable expanses of vacant land within rural residential and rural zones that have subdivision potential and continue to be developed. This will result in a dispersion of the new lots over the length of many of the shire's existing access roads.

Ordinarily, each new lot in isolation may not warrant the determination of a Section 94 contribution, but when hundreds of extra lots are added there is a significant cumulative effect on the existing access roads when considered in total. The passing of trucks and school buses to serve the development of the new lots, the establishment of residences and improvements on them and the longer term use of the lots will result in gradual and insidious degradation of pavements that cannot be corrected by maintenance activities alone. It is reasonable for Council to recover the costs involved for the use/loss of pavement life and the need to upgrade these pavements to cater for this use.

The further approval of new rural residential zones e.g at Royalla, Sutton and other areas will result in traffic impacts that will need to be addressed by the provision of a higher standard of roads in these areas.

Thus Section 94 contributions will be levied for the following cases of road asset provision being:

- CASE 1 For NEW ROADS (e.g. for link roads shared by new subdivisions)
- CASE 2 For ROAD UPGRADING (e.g. where road is being improved from gravel to sealed standard).
- CASE 3 For PAVEMENT UPGRADING (on existing access roads)

CASE 3 contributions are applied predominantly in rural areas where each developer of new lots is required to provide for the long term use of existing pavements travelled in proportion to other users. CASE 3 will apply on the sections of the travelled route(s) where road upgrading items under CASE 2 have not been identified for construction within current works programs.

This document sets out the road hierarchy of both bitumen sealed and gravel standard roads needed to serve the Shire's lot potential based on zoning (and allows for through traffic where necessary), together with a methodology and calculations to assess the impact on these roads as new lots are developed. The standard of road required at any location is determined from assessment of traffic.

P 2.0 Introduction

P 2.1 Citation

This plan may be referred to as the 'Section 94 Contribution Plan (No. 2) for the Provision of Access Roads'. It has been prepared in accordance with the requirements of S94AB of the Environmental Planning and Assessment Act, 1979.

P 2.2 Purpose

The purpose of the plan is to enable the levying of developer contributions for the provision of access roads which will be required as a consequence of increased traffic generated by development in Yarrowlumla Shire.

P 2.3 Objective and Aims

The primary objective of this Plan is to determine reasonable levels of S94 contributions for road asset provision within the Shire and to ensure that existing roads are not detrimentally affected overall by new development. Supplementary aims are:

- a. to provide a basis for levying developer contributions;
- b. to identify the road assets which Council has provided or intends to provide;
- c. to establish a nexus between anticipated development and contributions sought;
- d. to enable the planned provision of road assets over the longer term;
- e. to encourage public participation in the formulation of the plan;
- f. to provide the development industry with early advice as to the amount of contribution which will be required for a particular development;
- g. to facilitate proper financial management and accountability for expenditure of contributions received.

P 2.4 Land to Which Plan Applies

The plan applies to all land within the Yarrowlumla Council area as identified in the attached Map 1.

P 2.5 Relationship to Environmental Planning Instruments

The plan enables the levying of developer contributions specified for land uses permissible under Yarrowlumla Shire's Local Environmental Plan (LEP).

The most common land uses for which S94 contributions are levied include the development/construction of subdivisions, residences, commercial premises, works depots, wineries, bed and breakfasts, dual occupancies, extractive industries, landfilling, riding schools, recreational facilities, art and craft centres and various other developments.

It is to be noted that any new single residence being constructed on a lot for which a S94 contribution for roads has already been paid at the subdivision stage is exempt from paying any further contribution.

Associated with each of these developments is an increase in traffic which results in an additional demand on Council's road network with the cumulative effect being that the safe capacity and structural integrity of these roads are likely to be exceeded:

- some roads are of an inadequate standard in terms of alignment, width and surfacing to cater for the extra total traffic from new developments. These need to be upgraded as a result of development.
- all of the roads have pavements that will be 'consumed' at an increased rate as a result of the passing of any extra heavy vehicles associated with new developments.

It follows therefore that if new pavement is not added at the time, the existing pavement reaches the end of its useful life, and the need for replacement, at an earlier time. Council as owner, and the existing users are denied the full life of the pavement. The new development can therefore be expected to provide new pavement or otherwise pay a contribution for the pavement that will be consumed so that it can be replaced by Council (Case 3).

The level of contributions will need to be assessed on a case by case basis depending on the location, the layout and existing standard of the adjacent road network and the level of traffic that can be expected to be generated by the new development.

Subdivision applications will involve contributions calculated for each new lot created.

Developments other than subdivisions will involve contributions calculated in terms of new lot equivalents by comparing the predicted traffic movements for the new development to that predicted for a new lot. (Refer to Section 7.1).

P 2.6 Notes

1. Where the words "new lots" are used, they infer, as well, "new development approvals" as these will be considered in terms of "new lot equivalents" by an assessment of the predicted extra traffic that will be generated by the new development. Reference to the RTA's document 'Guide to Traffic Generating Developments' may also be required.
2. Costs of road maintenance activities will not be included in setting Section 94 contributions. Rate revenue collected on the lots will be applied independently for this purpose.

P 2.7 Statutory Requirements Listed in Clause 26 of the EPA Regulation 1994

Matters to be Considered in Section 94 Plan	Section 94 Plan Section
a. purpose of the plan	P 2.2 and P 2.3
b. the land to which the plan applies	P 2.5
c. the relationship between the expected types of development in the area and the demand for additional public amenities and services to meet that development.	E 2.0, P 2.5, P2.6 (note 1) and P 6.0
d. the formulas to be used for determining the Section 94 contributions required for different categories of public amenities and services.	P 7.0

- e. the contribution rates for different types of development, as specified in a schedule to the plan. E 5.0
- f. the Council's policy concerning the timing of the payment of monetary Section 94 contributions and the Section 94 conditions that allow deferred or periodic payment. P 9.1, P 9.2, P 9.3
- g. a works schedule of the specific public amenities and services proposed to be provided by the Council, together with an estimate of their cost and staging P 8.0, Attachment 6

P 2.8 Complying Development

Pursuant to Section 94D of the Environmental Planning and Assessment Act 1979 where this plan allows a contribution to be levied on development, an accredited certifier must impose on any complying development certificate issued, a condition requiring a monetary contribution in accordance with this plan. The amount of the monetary contribution must be determined in accordance with section P 7.0 of the Plan.

P 3.0 Definitions

In the interests of a common interpretation of what is intended and applied in the assumptions, principles and philosophy adopted, the various terms used are defined as follows:

- Asset** Property or possession of useful quality e.g, car, road, road pavement.
- Consumption** Act or process of using up, wasting, destroying and/or reducing to nothing the asset concerned (roads and/or road pavements).
- Standard Axle** This is a single axle with dual wheels loaded to a total mass of 8.2 t. It is set by regulation. The payload on this standard axle is approximately 5.25 t.
- Equivalent Standard Axle (E.S.A)** This is one pass of a standard axle load. Loads on different axle configurations of various vehicle types can be considered in equivalent standard axle terms. These loads are considered to be equivalent because they produce the same surface deflection and same pavement damage.

Examples ESA AS A FUNCTION OF VEHICLE TYPE AND PER CENT LOADING(Schofield 1985)

Truck Load	Light Truck	Two Axle Heavy Truck	Three Axle Heavy Truck	Articulated Vehicle	Large Buses
Tare(t) Net(t)	T<3 N=2.5	3≤T<5 N=8.0	T≥5 N=13.0	Semis N=22.0	Buses N=4.0
E	0.001	0.19	0.18	0.32	0.83
25%	0.004	0.35	0.34	0.42	
50%	0.008	0.66	0.67	0.78	1.73
75%	0.016	1.22	1.33	1.62	
F	0.028	2.15	2.48	3.26	3.21

- Cumulative Equivalent Standard Axles(CESA)** The sum of the ESAs passing along a road in a certain period.
- Road Pavement** The portion of the road placed above the design subgrade level for the support of, and to form a running surface, for vehicular traffic. It includes sub-base course, base course and surface course (refer to Attachment 4).
- Road Pavement Life** Attachment 3 indicates pictorially the life cycle of a road pavement. (Taken from ARRB (Australian Road Research Board) 'Source Book for Australian Roads – M.G. Lay)

Road Maintenance

The routine acts or processes of keeping road surfaces and roadside areas in a safe and functional working condition.

The aim of road maintenance is to undertake such acts and processes in a timely and cost effective manner to preserve roads, and particularly, road pavements so that the extent of their serviceable life is optimised. That is, the time span that a road or road pavement is available before it is finally used up (i.e, totally consumed) is maximised. Road maintenance includes such activities as pothole and edge bitumen patching, isolated heavy patching to repair surface ruptures, bitumen reseals, guideposts reinstatement, road side clearing, culvert clearing, centreline remarking, road sign reinstatement, gravel surface grading. Road maintenance involves day to day works and recurrent expenditure.

(N.B A definition of road maintenance is provided to indicate the definite distinction between road maintenance and road pavement upgrading processes of pavement rehabilitation and pavement reconstruction).

Pavement Upgrading

The addition of new pavement to an existing road. This includes the processes of pavement rehabilitation and pavement reconstruction . In both these renewal processes provision is made in the dimensions of the new pavement (i.e, thickness and width) being provided to cater for both existing traffic and any extra traffic that will be generated for new developments.

Pavement Rehabilitation – The reinstatement of a road pavement to or near its original condition. In practice, it involves the replacement or overlaying of the road pavement to provide renewed, and usually increased, structural capacity. NAASRA (National Association of Australian State Road Authorities) defines rehabilitation as being part depth renewal works greater than 60 m length or 500 square metres in area.

Pavement Reconstruction - The removal of the existing pavement and replacing it with a new pavement, essentially on the same alignment. NAASRA defines pavement reconstruction as being full-depth renewal work greater than 60m length or 500 square metres in area.

In both processes the value of the asset is restored so that it may be consumed anew by its users for a further life cycle.

Pavement upgrading processes involving rehabilitation and pavement reconstruction are not road maintenance. These processes occur after road maintenance is no longer viable in sustaining life in the asset. Pavement upgrading involves one off capital works and the special allocation of funding.

P 4.0 Road Hierarchy Required

The standard of rural access roads required to serve Yarrowlumla Council's area are determined by 'Council's Rural Subdivision Roads Standards Schedule' (Attachment 1) and 'Council's Non Urban Zone 1A Road Standards Schedule' as contained in Attachment 2. Urban road standards are as contained in the Bungendore DCP.

Reference to these schedules and to the lot and development potential of the Shire together with allowance for through traffic where necessary determines that the road hierarchy system as depicted on Map 2 is required to serve full development under the existing zoning.

Changes from existing zoning and existing levels of through traffic over time may have an impact on the overall road hierarchy required. These impacts will need to be assessed and incorporated into the road hierarchy pattern when their influence is significant.

P 5.0 Extent of Impact of New Developments on Access Roads

Rules have been adopted with reference to these Road Hierarchy Maps to limit the length of access roads to serve new rural lots under consideration to:

- a. the nearest State Road or Highway (the upkeep of which is funded by sources other than Council's own revenue).
- b. the ACT and adjacent Local Government area borders.

Applying these rules determines that seventeen (17) rural S94 catchments are established as contained on Map 1. Village areas will be considered separately. Common to all catchments is that the roads within are interlinked.

In addition the extent of impact of new rural lots on access roads has been limited to roads that would be used by greater than 5% of traffic generated by the new subdivision/development. This is significant in the determination of Traffic Generation Probability Maps as contained in Appendix A and as described in Section P 7.5.

P 6.0 Nexus

P 6.1 For CASE 1 – New Roads and CASE 2 – Road Upgrading

Any new road or road upgrading required will be designed to cater for extra traffic generated with the creation of new lots/developments and any through traffic.

It is therefore reasonable for new lots/developments to pay Section 94 contributions based on apportioning costs to reflect the relative usage of the new or upgraded asset(s) by both the traffic attributable to the new lots/developments and traffic attributable to existing lots/developments.

Where the fundamental purpose for providing a new road or road upgrading is for access to new lots and for the local traffic generated (e.g, new internal roads within subdivisions and link roads between new subdivisions) the developer(s) will be required to provide the new road or upgrade at full cost to the development(s).

P 6.2 For CASE 3 – Pavement Upgrading : For Provision of Pavement for One Life Cycle on Existing Roads

It is a basic assumption that there is a direct relationship between the creation of new lots, the extra traffic loading that they generate with their development and use, and the 'consumption' of road pavement life. A nexus is developed below by demonstrating that there is a discernible impact on existing road pavements that is directly proportional to each new lot served.

The levying of Section 94 contributions which reflect costs to provide pavements on existing roads to serve new lots as a portion of the costs to provide road pavements to serve the Shire area as a whole can be justified when due consideration is given to the following points:

- A road pavement is an asset which is 'consumed' by traffic. With reference to Attachment 3, the structural ability of pavement to support a designated total traffic loading (design life in ESAs) is 'used up' by each passing equivalent standard axle or part thereof. This 'consumption' of pavement life occurs despite road maintenance activities, although effective maintenance does significantly prolong pavement life. A pavement, from the day it is first opened to traffic, commences on a life cycle that slowly but continuously involves its degradation until eventually a level of service is reached where it becomes unacceptably rough, as judged by its users. It is totally 'consumed' and new life can only be provided by pavement replacement/reconstruction at significant cost.
- When Council requires a developer to construct a new road within a new subdivision, the pavement on that road is expected to serve the new lots of the subdivision and the ESAs generated for one life cycle of the pavement. Council's road standard schedules as contained in Attachments 1&2 are based on one life cycle of 40 years duration reflecting the typical past results for pavement endurance and a realistic minimum pavement replacement program that has to be funded in an era when revenue sources are ever diminishing. Simply roads need to be built to last.
- On the basis that it is accepted practice for councils to require developers who create subdivisions involving construction of new roads in new subdivisions to provide on those roads pavements for one life cycle of use it is considered equally justifiable that councils should also require developers who create subdivisions making use of existing roads to also provide a proportion of the pavements on these existing roads commensurate with the additional traffic loading generated, based on one life cycle of use.
- The addition of even one extra lot causes extra ESA movements over existing pavements leading to the new lot. The passing of these ESAs occur over the years and results from:

- a. Subdivision construction traffic.
 - b. The haulage of building materials and plant associated with establishing dwellings, sheds, access driveways, dams, bores, fences etc.
 - c. Transport of furniture, stockfeed, fertiliser, fuel, water, produce and livestock etc, to or from the rural lots. It is to be noted that a truck visiting under such circumstances may be carrying a load extra to the delivery to a particular lot.
 - d. Bus services, visits from road maintenance trucks, bush fire trucks, telephone and electricity supply trucks, garbage collection trucks etc.
 - e. Haulage trucks and plant associated with reconstruction of the road pavements over time on access roads leading to subdivisions, and
 - f. Some lots act as depots for their owners trucks.
- Provision has been made in the road design standards, (detailed in Attachments 1 & 2) for pavements to be designed in increments of ESAs attributable to each new lot e.g, by measures of 2000 ESAs over the life of the pavement.

Therefore, Council's Road Design Schedules (Attachments 1 & 2), provide a 'sliding scale' of road standards with ESA increments (or new lots) being the governing variable and pavement depth requirement being the resulting variable. The equation:

$$T = [219 - 211 (\log \text{CBR}) + 58 (\log \text{CBR})^2] \log \frac{N}{120} \quad - \text{EQN (1)}$$

represents this relationship

(T = pavement thickness in mm, N = design traffic in ESAs) (From RTAs Form 76 'Pavement Thickness Design')

Examples of pavement thickness requirements for typical roads are included in Attachment 10, together with an explanation of the apportionment of pavement required for one extra lot.

- The rural roads within Yarrolumla Shire have been provided to varying standards over the years but Council asserts that existing pavements, other than those in recently completed subdivisions, are almost without exception at a lower standard than the standard sought as a corporate objective by Council's DCP. Most are deficient in width and pavement thickness and/or condition. None of these presently exist with spare capacity of pavement (in terms of providing a life cycle of use) to cater for traffic generated as a result of new subdivisions and development applications that will be approved at a later date. In fact, most of the pavements, due to their age, are well advanced on the path to total 'consumption'. The valuation of Council's road assets as required by AAS 27 confirms the point that existing pavements are substantially deteriorated. It was assessed at 30 June 1996 that accumulated depreciation for the roads covered by the S94 Plan was \$48.9million on a replacement cost value for these assets of \$110.9million.
- Clearly, if new pavement is not added at the time, the addition of extra lots accelerates the using up, the 'consumption', of existing road pavements. In fact, when increases in traffic load (in CESAs) occur due to development, the existing traffic load capacity of the pavement is reduced by the amount of the traffic load increase. An assessment of the cost of this impact can be made using the following formula:

$$\text{Impact (\$/km/lot)} = \frac{\text{New lot CESAs} \times \text{Existing pavement replacement cost (\$/km)}}{\text{Existing pavement design capacity (CESAs)}} - \text{EQN(2)}$$

Rehabilitation or reconstruction of the entire pavement or parts thereof is required at some earlier time as a result of the extra 'consumption'. The owner (Council), and the existing users thereby are denied the full life of the pavement as designed. The owner of the new lot can therefore expect to provide new pavement or otherwise account for the pavement that will be consumed by his/her use of the existing road network serving this lot.

However, in order to demonstrate fairness to developers, Council has adopted Section 94 contribution rates based on the standards of pavement required in accordance with Council's DCPs. In so doing it gives a significant discount to developers. The equation to be used is:

$$S\ 94\ Contribution = \frac{\text{New lot CESAs} \times \text{Upgraded pavement replacement cost (\$/km)}}{\text{Upgraded pavement design capacity CESAs}} - EQN\ (3)$$

The discount results when using equation (3) rather than equation (2) because the relationship between increased pavement thickness and increased traffic load capacity is non-linear as a mechanistic advantage exists with each increment of pavement thickness.

Consequently for each extra increment of traffic loading the costs to provide a required thickness of pavement is ever diminishing.

The level of discount can be illustrated with reference to the graph in Attachment 9, which has been prepared from information contained in the Section 94 Plan.

From that graph, if the existing road pavement is at a Type 4b standard for example, the cost of consumption of pavement life by the passing of 1 ESA over 1 km is assessed at \$1.83; using Equation (2).

If however for this location, a Section 94 contribution is calculated based on a need to provide an upgraded Type 5 road pavement that is required by the DCP, the charge will be only \$0.67 for each ESA passing per km; using Equation (3).

The adoption of a 40 year life for sealed pavements is also a concession to developers of subdivisions using existing roads as the achievement of such pavement life is dependent on reasonably high standards of maintenance.

If such maintenance is not possible due to a reduction of financial resources to carry out necessary crackfilling, routine surface patching, edge treatments, attention to drainage and reseals a lesser pavement life results for the same recurrent level of traffic loading. Pavement damage as a result will be higher for each ESA passing.

For gravel roads, whilst it is recognised that the effects that reduce a gravel pavement's life also include physical loss of gravel thickness through rising dust, wash during storms and physical dispersion by tyres the calculation based on Equation (3) results in Section 94 contribution rates that favour developers of new subdivisions.

If 40 years of pavement provision is to be achieved it is likely that the gravel pavement will need to be resheeted every 6 – 10 years, say 4 to 6 times in this period.

The Section 94 contribution that is determined however, is asking for a payment proportionate to other users for only one resheeting.

- Further, the notion of setting Section 94 contributions based on costs for one life cycle of a pavement is considered to be most appropriate as one life cycle of a pavement, accepted as being 40 years, closely approximates the time span of one generation of road users as may originate from a new lot.

- It follows that once a contribution is taken, Council is giving a commitment to the users of new lots to provide road pavement in a useable condition for one life cycle of pavement. The condition in which pavements are actually provided at any one time, and at any one location, will depend on Council's ability to fund its portion of pavement asset provision works. Council, however, pledges that monies collected under Section 94 contributions will be spent on providing road pavements within the individual catchments and, by inference, gives a guarantee that it will continue to provide all pavements in a trafficable state.
- Council has already accepted its responsibility in this regard when it adopted the following objective in its Corporate Plan under transport services.

"To provide and maintain safe and functional roads and ancillary facilities that meet the needs of the public travelling within the Shire".

- The Section 94 Plan in this part, (under Section P 6.2) is a statement that Council requires developers to provide their own pavement requirements. Nothing more. There is no attempt, by this exercise, to make good current pavement deficiencies; only that current pavement deficiencies are not exacerbated, overall, by new developments.
- It is not valid that Council must match the amount of contributions taken, at the time the contributions are expended. Council can only undertake its share of pavement provision, at any one time, to the extent that it can fund the works and due to the present limitations imposed on Councils to raise appropriate levels of revenue, Council may have to accept pavement condition for existing users as it is. The worst case 'pavement condition' will be given priority.

Why is the requirement for developers to pay a CASE 3 Section 94 contribution for pavement upgrading not already covered in rates?

Simply, the new lot has not been in existence to enable rates to be taken to provide 'up front' the pavement required as a result of its establishment. Instead the pavement has to be provided 'up front' by the developer as a CASE 3 Section 94 charge. Council is not a financier for private interests wishing to undertake subdivisions or other developments. A more detailed explanation of this is included as Attachment 8.

P 7.0 Assessment of Contributions

P 7.1 Traffic Based

The determination of the amount of Section 94 Contribution to be paid for road asset provision will be based on the increase in traffic that will pass along new and existing roads as a result of new development. In effect, total traffic volumes determines alignment and width; ESAs (Equivalent Standard Axles) passing over a pavement's life determines pavement depth. The dimensions of the pavement required determines costs.

Development applications, other than subdivisions, will be required to include details of both the extra light and heavy vehicle movements that are expected on the road network as a result of the development.

The figures provided will be verified as necessary with reference to those contained in the NSW Road and Traffic Authority's 'Guide to Traffic Generating Developments'.

If no traffic generation figures are provided by the applicant the assessment of traffic will be based on the RTA Guide.

The traffic figures for the development will be compared to those for a new lot with application of a conversion factor for light vehicle movements of 8 vehicles per day and for heavy vehicle movements of 1 ESA per week on average. These conversion factor figures are as reflected in Council's Road Standard Schedules.

P 7.2 Apportionment

The provision of road assets in some cases will be for the benefit of the new development only. In such cases the new development will be responsible for full costs of road asset provision.

Where road asset provision is required by both the existing development and new development the costs for providing these road assets will be apportioned against existing and new development based on respective usage.

The apportionment process will also make allowance for Through Traffic, being traffic that passes through a catchment without stopping.

The majority of the shire's roads which are the subject of this plan, are provided to service residents living in the shire's rural and rural residential areas.

Within the Shire however there are six (6) regional roads and eight (8) local roads with varying levels of through traffic.

The following table lists these roads and indicates:

- a) The standard of road required if only local traffic generated from development within each individual catchment is assessed; and
- b) The standard of road required when local traffic under (a) above is added to the through traffic passing along these roads without stopping.

Name	Description	Classification	Column 1 Road Standard required assessing local traffic only	Column 2 Road Standard required assessing local & through traffic
Tumut Road	From ACT border to Tumut Shire boundary	Local road	Type 8	Type 9*
Fairlight Road	From ACT border to Mountain Creek Road	Local road	Type 8	Type 10*
Mountain Creek Road	a. From Fairlight Road to Yass Shire boundary	Local road	Type 8	Type 10*
	b. From Fairlight Road to ACT border	Local road	Type 8	Type 9*
Nanima Road	From Barton Highway to Yass Shire boundary	Local road	Type 8	Type 10*
Springrange Road	From Barton Highway to Yass Shire boundary	Local road	Type 9	Type 10*
Gundaroo Road	ACT border to Yass Shire boundary	Local road	Type 9	Type 10*
Tallaganda Lane	Sutton Road to Yass Shire boundary	Local road	Type 9	Type 10*
Jerangle Road	Captains Flat village to Cooma-Monaro Shire boundary	Local road	Type 9	Type 10*
Macs Reef Road	Federal Highway to Bungendore Road	Regional road RR 7607	Type 7	Type 7***
Bungendore Road	a. Macs Reef Road to Bungendore	Regional road RR 7607	Type 7	Type 7***
	b. Macs Reef Road to Federal Highway	Local road MR 268	Type 6	Type 6**

Tarago Road	Kings Highway to Mulwaree Shire boundary	Regional road MR 270	Type 7	Type 7**
Captains Flat Road	a. Kings Highway to Briars Sharrow Road	Regional road MR 270	Type 7	Type 7**
	b. Briars Sharrow Road to Captains Flat village	Regional road MR 270	Type 5	Type 6*
	c. Captains Flat village to Tallaganda Shire boundary	Regional road MR 270	Type 9	Type 10*
Old Cooma Road	a. Queanbeyan City boundary to Burra Road	Regional road MR 270	Type 7	Type 7**
	b. Burra Road to Monaro Highway	Local road	Type 6	Type 6**

When calculations of S 94 contributions are made for the above roads, through traffic is allowed for as follows:

a. For roads marked *:

The higher standard of road in Column 2 is required because the through traffic is added. Consequently the S 94 contribution calculation using Equation (3) results in lower contribution rates than using the lower standard road of Column 1 because the denominator is much larger for the Column 2 road standard. i.e. the traffic generated from 1 new lot is a much smaller proportion of the total traffic allowed with the higher standard road. The rates adopted in Section P 7.4 for the road type listed in Column 2 can be applied and still give a concession.

b. For roads marked **:

The through traffic does not exceed the allowance already included in the basic calculations for these Type 6&7 roads. The rates adopted in Section P 7.4 for the road type listed in Column 2 can be applied as for other roads without through traffic.

c. For roads marked ***:

Following a change in Council policy, effective from 1/10/98, the allowance for through traffic inherent in the road standard schedule (Attachment 1) for a type 7 road is now exceeded for Regional Road No. 7607, the Macs Reef Road/Bungendore Road link.

Prior to 1/10/98 this route was subject to a 5 tonne (GVM) load limit which greatly limited through travel of heavy vehicles.

Since this date Council has increased the load limit to 10 tonne (GVM) and has also exempted all buses.

As a result of this, a revised Section 94 contribution rate (under Case 3) has been determined for this particular route based on a revised pavement design life on increasing the allowance for heavy vehicle through traffic from 10% to 30% of local access heavy vehicles i.e. by 2×10^5 extra CESAs to reflect the expected pattern of extra heavy vehicle movements. The special rate of \$340/km determined in Section P 7.4 is appropriate for this higher trafficked regional road.

P 7.3 Costs

For new road construction (CASE 1) and road upgrading (CASE 2) estimates as listed in Attachment 6 have been determined for identified projects that are proposed to be undertaken over the coming years.

For existing roads (CASE 3), costing of the provision of pavement for the various road standards has been determined in Attachment 5 based on typical pavement profiles as illustrated in Attachment 4 (costs as at March 1994). To determine the depth of pavement, required for the various road types, reference was made to ARRB's Special Report No. 41 (1989), its update APRG Report No.21 and Austroads 'Pavement Designs' (1992) for sealed roads and to ARRB's 'Unsealed Road Manual' (1993) for unsealed roads.

These pavement costs are summarised as follows:

<u>Road Standard</u>	<u>Pavement Cost Per KM</u>
Type 1, 2 & 3	Owners Cost
Type 8 (Gravel – Rural 1a Zones)	\$35,000
Type 9 (Gravel – Rural 1a Zones)	\$41,000
Type 4 Cul-de-sac Road (Sealed 4a)	\$96,000
Type 4 Cul-de-sac Road (Sealed 4b)	\$111,000
Type 5 Local Access Road (Sealed)	\$134,000
Type 10 Local Access Road (Sealed – Rural 1a Zone)	\$134,000
Type 6 Collector Road (sealed)	\$180,000
Type 7 Rural Arterial Road (sealed)	\$215,000
Type 7 RR 7607 (Macs Reef/Bungendore Rd)	\$220,500

Costs to reconstruct pavements as contained in Attachment 5 reflect works that are typically required when a road pavement has reached, or is close to the end of, its practical life. These works usually include many of the following:

- removal of existing contaminated pavement and strengthening of sub grade as necessary;
- widening of formation to support the upgraded pavement width including any clearing and/or opening up of cuttings sometimes in rocky ground;
- re-location of utility services
- widening of culverts and rearrangements of roadside drainage;
- supply, delivery, placement and compaction of new pavement materials;
- traffic control measures involving construction under traffic;
- provision of 2 coat bitumen seal;
- guideposting and line marking as necessary;
- re-instatement of any adjoining driveway entrances;
- re-establishment of vegetation cover on disturbed areas;
- design, supervision and level control.

P 7.4 Contribution Rates

To determine Case 1&2 contributions, the cost of an individual project is apportioned to each new lot by dividing this project's cost by the total number of lot equivalents being catered for in the design of the project.

To determine Case 3 contributions, the above costs for pavement provision have been apportioned to the new lots by using the ratio of ESAs attributable to each lot against maximum ESAs road design life. These figures are contained in Attachments 1 and 2. For Collector Roads and Arterial Roads discounts of 4% and 10%, respectively, have been allowed for through traffic.

The equation used is:

$$S94 \text{ Contribution} = \frac{\text{New lot CESAs} \times \text{Upgraded pavement replacement cost (\$/km)}}{\text{Upgraded pavement design capacity (CESAs)}} - \text{EQN (3) (\$/km/lot)}$$

The result of this apportionment is Section 94 contribution rates for existing roads under CASE 3 being determined as follows:

<u>Road Standard</u>	<u>Apportionment</u>		<u>Pavement Cost</u>		<u>Rate</u>	<u>Discount</u>	<u>Adopted Rate</u>
Type 8 (unsealed)	1.5×10^3 2.25×10^4	x	35,000	=	\$2,330 / km		\$2,330 / km
Type 9 (unsealed)	1.5×10^3 4.5×10^4	x	41,000	=	\$1,370 / km		\$1,370 / km
Cul-de-sac (sealed 4a)	1.5×10^3 2.25×10^4	x	96,000	=	\$6,400 / km	*84%	\$1,000 / km
Cul-de-sac (sealed 4b)	1.5×10^3 6.0×10^4	x	111,000	=	\$2,775 / km	*64%	\$1,000 / km
Local Access Type 5 & 10 (sealed)	2×10^3 2×10^5	x	134,000	=	\$1,340 / km	*25%	\$1,000 / km
Collector Type 6 (sealed)	2.0×10^3 6.25×10^5	x	180,000	=	\$580 / km		\$580 / km
Rural Arterial Type 7 (sealed)	2.0×10^3 1.1×10^6	x	215,000	=	\$390 / km		\$390 / km
RR 7607	2.0×10^3 1.3×10^6	x	220,500	=	\$340 / km		\$340 / km

**For Type 4,5&10 roads, discounting, in favour of S94 contributors has been allowed in the calculations to encourage subdivision along lower trafficked roads where possible due to the safety advantages of traffic turning into new lots from these roads in lieu of busier and faster collector and arterial roads*

P 7.5 Determination of Section 94 Levy/Lot

To determine the amount of contributions to be paid for each new lot taking expected usage into account, the following method is applied.

- a. Preparation of Traffic Generation Probability maps to indicate the probable access route(s) and the frequency of travel along each road that may be taken to gain access to the new lot(s). This is the traffic probability factor, Tn, in the equation below. In preparing these maps consideration has been given to the location of the new lot/development in relation to the service towns/villages, Queanbeyan, Canberra and other destinations, as well as to school bus routes, garbage depots and community halls. The map actually indicates the return route(s) from the new lot(s) for simplicity of illustration and calculations. Appendix A contains these maps and traffic factors for all locations within the Shire.
- b. Measurement of the length of each category of access road leading to the new lot(s).
- c. Calculation of the Section 94 levy applicable to the new lot(s) by applying the following formula:

Section 94 levy = Ln x Rn x Tn - EQN (4)

Where:

Ln is the length of each road type travelled,

Rn is the contribution rate per km for each road type or new roadworks travelled,

Tn is the traffic probability factor of each access road travelled.

Examples of the determination of Section 94 Contributions for sample locations are included in Attachment 7.

P 7.6 Special Cases

P 7.6.1 Extractive Industries and Landfilling (and other intensive truck haulage developments)

Where haulage is over existing roads Section 94 contributions will be charged based on applying the following formula previously adopted by Council (Reference – paper prepared by Cr J. Maclachlan, dated 11 Feb 92).

$$\text{Charge per m}^3 \text{ km} = \frac{C}{R_{DL}} \times \frac{1.5}{1} \quad \text{- EQN (5)}$$

P

or

$$\text{Charge per tonne km} = \frac{C}{P \times R_{DL}} \quad \text{- EQN (6)}$$

Where

C	=	Estimated cost to provide existing pavement
R _{DL}	=	Existing pavement design capacity in ESAs
m ³	=	cubic metres of payload
t	=	tonnes of payload
P	=	payload(t)/ESA (use 5.25 for 3 axle heavy trucks; 6.75 for articulated vehicles)

Note: The formulae are a mathematical representation of the cost of the impact of the haulage of each t or m³ of payload caused to a pavement with a particular design life and replacement cost.

The formulae involves dividing the assessed cost of the replacement of the existing pavement travelled by haulage trucks by the assessed design life of the existing payment to give the value per ESA of the pavement.

The passing of each ESA 'consumes' this dollar amount which the S94 charge seeks to recover.

The payload in tonnes is converted to ESAs by dividing by 5.25 recognising that an ESA is based on a single standard axle with dual wheels supporting a legal load of 8.2t and the payload on this single standard axle is approximately 5.25t. Different payloads/ESA apply for different axle configurations.

A conversion factor of 1m³ to 1.5 tonne is used, although measurement in tonnes is preferred as the conversion factor from m³ is affected by moisture content.

P 7.6.2 Bungendore Roundabouts

It is envisaged that over the next 3 – 10 years roundabouts will be required for the safe and efficient flow of traffic within and through the village of Bungendore. The roundabouts will not only benefit the residents of Bungendore but also residents from adjacent Catchments and through traffic on the Kings Highway and the Bungendore/Macs Reef Road links.

Roundabouts will be required at the following three locations.

- Roundabout 1 - at intersection of Gibraltar Street / Molonglo Street
- Roundabout 2 - at intersection of Molonglo Street / Malbon Street
- Roundabout 3 - at intersection of Malbon Street / Ellendon Street.

Cost = 3 @ \$200,000 = \$600,000

Contributions will be sought under this section for Catchments 4 and 6 as calculated below, and under section P 7.6 for the village of Bungendore: Funding under the RTAs Traffic Facilities' Programmes will also be sought.

$$\begin{aligned} \text{S 94 Levy / lot} &= \frac{2 \times 10^3}{5 \times 10^6} \times 600,000 \times \text{Tn} \\ &= \$240 \times \text{Tn/lot} \end{aligned}$$

Where Tn is the traffic probability factor.

P 7.6.3 Dual Occupancy Dwellings

The effect of the establishment of a second dwelling on a lot will be assessed on the basis of the number of total bedrooms. The total number of bedrooms gives an indication of the number of persons being catered for and consequently the increase of traffic generated along the road network leading to the site.

The assessment made will allow 5 or less bedrooms between the two dwellings without a S94 contribution being required. For dual occupancies where greater than 5 bedrooms are involved the S94 contribution will be calculated by converting to equivalent lots by dividing the number of bedrooms in excess of 5 bedrooms by 5 e.g two dwellings of 4 bedrooms and 3 bedrooms will result in a S94 contribution of 0.4 equivalent lots.

P 7.6.4 Bed and Breakfast Operations

Recognising a relatively low average occupancy rate for this type of development predicted traffic has been set at 4 vehicle movements per week per bedroom. This is equivalent to 1/14th of a lot in terms of traffic generation. This conversion will be adopted for all bed and breakfast operations.

P 7.6.5 Villages

P 7.6.5.1 General

New developments within village zones will be considered on an individual basis.

Contributions will be determined on an assessment of the traffic movements predicted, the proportion of extra ESAs that are likely to be generated and the need for roadworks attributable to the development.

No contributions will be levied for access roads leading to the villages to encourage growth of the villages which provide the most efficient form of development in relation to Council providing services for its ratepayers.

P 7.6.5.2 Bungendore

a. For Bungendore North Development

Amount 1 Towards Future Roundabouts – to be levied on all new lots.

As stated in Section p7.6.2 it is envisaged that over the next 3 – 10 years three roundabouts will be required at Bungendore at a cost of \$600,000.

S94 Levy/lot

Discount 60% for through traffic gives \$600,000 x 0.4 =	\$240,000
Potential Lots within the Village	= 1000
Cost per lot	= \$240,000 / 1000
	= \$240 / lot

Amount 2 Towards Tarago Road
 Adopt rate of \$390 / km for Arterial Road
 From Section 7.4 with discount of 50%
 Recognising future provision of second access
 Road crossing of Turallo Creek,
 i.e. $390 / 2 \times 1.05 \text{ km} = \$205 / \text{lot}$

Amount 3 Towards existing Turallo Creek Bridge upgrading = \$25 / lot

Total = \$470 / lot

b. For Existing Developed Village (i.e. other than Bungendore North)

Amount 1 Contribution towards Roundabout \$240 / lot.

Amount 2 Towards village street improvements and pavement upgrading

Cost \$34,000 / yr x 10 years	=	\$340,000
Cost / lot	=	\$300,000 / 500
	=	\$680 / lot
Total	=	\$920 / lot

P 7.6.5.3 Other Villages

For Sutton, Captains Flat and Michelago

A contribution the same as for Bungendore less contribution towards roundabouts, will be levied on all new developments to enable upgrading of village streets and pavement replacement.

Section 94 Levy = \$680 / lot

P 7.6.6 Unsealed Cul-de-sacs in Existing 1(d) Zones

It is intended to upgrade these roads to a sealed standard by applying Section 94 contributions to the new lots that will be created along these unsealed sections of roads. The roads are:

P 7.6.6.1 Summerhill Road

The Contribution rate calculated below is based on:

a.	<u>Cost to construct 1.2 km</u>	\$100,000
	Less Council's contribution of 50% of costs	\$ 50,000
	Leaves	\$ 50,000
b.	<u>Expected new lots</u>	6
c.	<u>Contribution for Summerhill Road</u>	<u>\$50,000</u>
		6
		\$8,330 / lot

- d. Contributions towards existing access roads will also apply from the Summerhill/Bungendore Road intersection – initially \$6,250 / lot

Total S94 Levy = \$8,300 + \$6,250 \$14,550 / lot

P 7.6.6.2 The Forest Road

1.35 km at the end of this road is unsealed.

The Contribution rate calculated below is based on:

a.	<u>Cost to construct 1.35 km</u>	\$120,000
	less Contribution by Council of 50% of costs	\$ 60,000
	Leaves	\$60,000
b.	<u>Expected new lots</u>	8
c.	<u>Contribution</u> for the end Section of The Forest Road	\$60,000 / 8 \$7,500 / lot

- d. Contributions towards existing access roads will also apply to the end of the existing seal on the Forest Road – initially \$6,510 / lot

Total S 94 Levy = \$7,500 + 6,510 = \$14,010 / lot.

P7.6.6.3 Wanna Wanna Road

Existing arrangements in place for the taking of S94 contributions of \$13,000 per lot for upgrading of this road remain in place. CASE 3 contributions will also be sought from the Wanna Wanna Road / Captains Flat Road intersection, i.e, \$1,900 / lot.

P 7.6.7 Hutchinson Place

This private right-of-way at Burra has been aligned and formed to a cul-de-sac standard but has not been sealed nor dedicated. It currently serves 13 lots. There are potentially eight extra lots that could be created under the new 1(d) zoning but Council's policy will not allow any new subdivisions. where the private access road already serves more than five lots.

Arrangements as detailed below are included in this Section 94 Plan to provide a mechanism for the extra lots to be created provided developers of the new lots are prepared to conjointly fund upgrading of the road to a sealed and dedicated cul-de-sac road standard.

Arrangements

a.	Payment of Contributions based on:	
	i. Cost to construct 1.6 km	\$160,000
	ii. Expected number of extra lots	8
	iii. Contribution for Hutchinson	\$160,000 / 8
	=	\$20,000 / lot

(Alternatively all existing lot owners along Hutchinson Place may agree among themselves on funding arrangements to construct the road).

- b. Any contribution received will be expended within two years of receipt to construct the road from Badgery Road southward to the value of funds received.
- c. Council will maintain the road once it is constructed to a sealed standard and dedicated.

- d. Contributions towards existing access roads will also apply from the Badgery Road/Hutchinson Place intersection – i.e, \$12,000 / lot.

P7.6.8 Fernloff Road

Council, on 14 September 1993 resolved to apply certain conditions to subdivisions along this road to ensure that the road is eventually constructed to a sealed cul-de-sac standard. The Section 94 contributions applicable are based on the following:

1. A preliminary estimate of \$750,000 to construct the cul-de-sac road.
2. With recognition that 33 extra lots could potentially be created along the road, but more probably no more than 30, developers be required to carry out improvement works to the value of $\$750,000 / 30 = \$25,000 / \text{lot}$. These works include:
 - (i) Survey and design of the road.
 - (ii) Construction of the type 5.16 intersection with Type B right turn lane required at Norton Road.
 - (iii) The staged construction of the cul-de-sac road towards the north to a sealed standard.
 - (iv) Entrances to the new lots being constructed to a Type A standard.
3. Payment of a contribution towards the provision of access roads leading to Fernloff Road - initially \$3,020/lot.

P 7.6.9 Maximum Contribution

This will be set at \$12,000 / lot except for subdivisions/developments causing the need for road upgrading of Summerhill Road, The Forest Road, Wanna Wanna Road, Fernloff Road, Old Cooma Road, Clare Lane, Joe Rocks Road, Old Gold Mines Road and Woolshed Lane, all of which are specially covered elsewhere in the plan.

By comparison \$15,000 - \$30,000 per lot is considered to be the 'going rate' for developers to provide roads within new 1(d) zone multi-lot subdivisions, depending on site conditions.

P 7.6.10 Minimum Contributions

This will be set at \$920 / lot. This is the same as the rate for Bungendore village.

This lower limit recognises that new lots even if fronting directly on to State Roads and Highways will generate traffic that will use local access roads e.g, travelling to the nearest village or garbage tip.

P 7.6.11 Annual Adjustment

The contribution rates contained in this document will be adjusted annually in line with movements in the Road Cost Index (Country Operations Roads) as prepared by the Roads and Traffic Authority of NSW. Costings and calculations in the Plan are based on prices as at 31 March 1994 when the Plan was first prepared.

P 7.7 Royalla Catchment (added as Amendment No. 1 – 9/6/98)

P 7.7.1 Area Served

With reference to attached Plan No. 7.7 the area served consists of the newly gazetted 1(d1) zone and the previously established 1(d) zone both situated south of the Old Cooma Road/Burra Road intersection and east of the Goulburn - Bombala Railway Line.

P 7.7.2 Expected Lot Yield

Sub catchment 1 (New 1(d1) zone other than Royalla Property)	260
Sub catchment 2 (Old 1(d) zone)	60
Sub catchment 3 (New 1(d1) zone - Royalla Property)	200

P 7.7.3 Road Upgrading Required

The current road network within the Royalla Catchment is constructed to the standard that was acceptable for the level of developments to date.

Upgrading over time to appropriately provide for future developments will require the following works:

a.	Old Cooma Road / Burra Intersection to be upgraded to 'Rural Seagull' treatment or similar	\$87,330
b.	Old Cooma Road south of Burra Road to be upgraded to Type 6 Road:	
	(i) Over Existing Seal	
	1.00 km @ \$157,200 / km	\$157,200
	(ii) Over gravel pavement on existing alignment	
	3.00 km @ \$209,600 / km	\$628,800
	(iii) Realignment involving road widening off existing road	
	1.8 km @ \$296,950 / km	\$534,510
	(iv) Realignment involving major deviation (new road reserve)	
	2.2 km @ \$331,900 / km	\$730,180
c.	New Bridge over Jerrabomberra Creek	\$436,680
d.	Railway Crossing upgrading including approaches	\$218,300
	TOTAL ROADWORK (to be provided under Section 94)	\$2,793,000

P 7.7.4 Apportionment

a.	Cost of Required Works	\$2,793,000
b.	Lots Benefited	
	From	
	Sub Catchment 1 [260 (lot yield) - 22 (current building entitlements)]	238 lots
	Sub Catchment 2 (potential extra lots)	60 lots

Sub Catchment 3 (20 % of traffic is expected to use Old Cooma Rd)

0.2 x 200	40 lots
TOTAL	338 lots

P 7.7.5 Section 94 Contributions

$$\text{Section 94 Contribution} = \frac{\text{Cost of Required Works}}{\text{Lots Benefited}}$$

For Sub catchments 1 and 2

- a. For upgrading of Old Cooma Road within Royalla Catchment

$$\text{Section 94} = \frac{\$2,793,000}{338} = \$8,260/\text{lot}$$

- b. Towards access roads leading to Royalla Catchment (See Section P 7.5)

\$680 / lot

For Sub catchment 3

- a. For upgrading of Old Cooma Road within Royalla Catchment

$$\text{Section 94} = \frac{\$8,260 \times 40}{200} = \$1,655 / \text{lot}$$

- b. Towards access roads leading to Royalla Catchment (See Section P 7.5)

\$305 / lot

TOTAL \$1,960

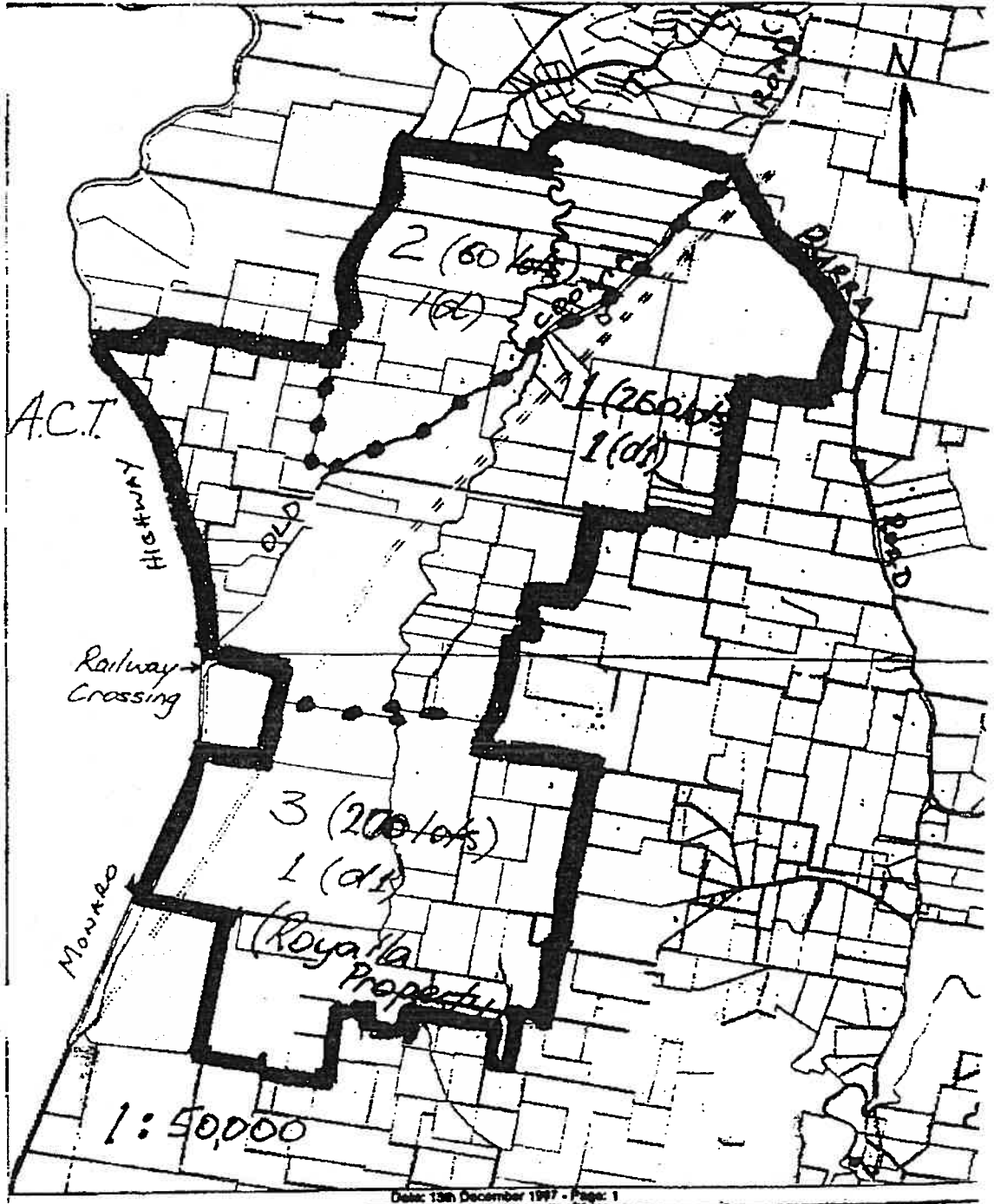
Summary of Section 94 contributions payable:

For Subcatchment 1 and 2 \$8,940 / lot

For Subcatchment 3 \$1,960 / lot

(NOTE: These rates have been calculated at March 1994 prices and will be subject to annual adjustment in accordance with sub clause P 7.6.11.

ROYALLA CATCHMENT PLAN 7.7.



Date: 13th December 1997 - Page: 1

Copyright of base map copyright Land Information Centre, 1997
Copyright © Yarrowakuta Shire Council, 1996

P 7.8 Clare Lane (added as Amendment No. 2 – 9/6/98) {revised 28/3/00}

P 7.8.1 Area Served

Future developments that may occur along the 2.9 km length of Clare Lane between Bungendore Road and Norton Road at Wamboin.

P 7.8.2 Expected Lot Yield

14 extra lots.

P 7.8.3 Road Upgrading Required

The current standard of the gravel road along Clare Lane has been satisfactory for the level of developments to date; apart from the sub-standard intersection at the Bungendore Road end.

Upgrading over time to appropriately provide for the future developments will require the following works:

a.	Construct 2 @ Type 4a cul-de-sac roads - one from Norton Road and one from Bungendore Road	
	2.5 km @ 98,030 / km	\$245,070
b.	Norton Road intersection to be upgraded to a BAR / BAL intersection	\$17,470
c.	Bungendore Road intersection to be upgraded with a modified seagull treatment with \$17,470 of costs to be met by future developments along Clare Lane (see report to Council 24 Feb 1998)	<u>\$17,470</u>
	TOTAL	<u>\$280,010</u>

P 7.8.4 Section 94 Contributions

a.	For Clare Lane upgrading including intersection treatments:	
	<u>\$280,010</u> =	\$20,000 / lot
	14 lots	
b.	Towards access roads leading to Clare Lane (see Section P 7.5)	\$5,200 / lot
	TOTAL SECTION 94 RATE REQUIRED	<u>\$25,200 / lot</u>

(NOTE: These rates have been calculated at March 1994 prices and will be subject to an annual adjustment in accordance with sub clause P 7.6.11.

P 7.9 Joe Rocks Area (added as Amendment No. 3 – 9/6/98)

P 7.9.1 Area Served

Future developments that may occur in the area served by Joe Rocks Road and The Mountain Road.

P 7.9.2 Expected Lot Yield

10 extra lots.

P 7.9.3 Road Upgrading Required

The current road network within the area is constructed to the standard that was acceptable for the level of developments to date.

Upgrading over time to appropriately provide for the future developments will require the following works:

a.	Construct Joe Rocks Road to the intersection with The Mountain Road as a Type 4b sealed road	\$165,940
b.	Construct BAR/BAL sealed intersection at the junction of Joe Rocks Road/ The Mountain Road	<u>\$34,930</u>
	TOTAL	<u>\$200,870</u>

Any works required on the cul-de-sac sections south of Joe Rocks Road/The Mountain Road junction will be applied in consideration of Section 90, as appropriate.

P 7.9.4 Section 94 Contributions

a.	For Joe Rocks Road Upgrading:	
	<u>\$200,870</u> =	\$20,090 / lot
	10 lots	
b.	Towards access roads leading to Joe Rocks Road (see Section P 7.5)	\$5,440 / lot
	TOTAL SECTION 94 RATE REQUIRED	<u>\$25,530 / lot</u>

(NOTE: These rates have been calculated at March 1994 prices and will be subject to an annual adjustment in accordance with sub clause P 7.6.11.

P 7.10 Sutton Rural Residential Catchment (added as Amendment No. 4 – 9/6/98)

P 7.10.1 Area Served

With reference to attached Plan No. 7.10 the area served consists of the newly gazetted 1(d1) zone generally bounded by the Federal Highway, Sutton Road and the ACT border.

P 7.10.2 Expected Lot Yield

Sub catchment 1 (Area south and west of Bidges Road but not gaining primary access from Bidges Road)	25
Sub catchment 2 (Area served by Bidges Road)	30
Sub catchment 3 (Area north and east of Bidges Road but not gaining primary access from Bidges Road i.e, Sutton Acres)	54
Sub catchment 4 (Area served directly by new RTA service road)	13
Sub catchment 5 (Denley land fronting Sutton Road)	11
Sub catchment 6 (MacDonald land fronting Sutton Road)	1
TOTAL	<u>134</u>

P 7.10.3 Road Upgrading Required

The current standard of the existing roads within this catchment has been accepted for the level of development to date.

Upgrading over time to appropriately provide for future developments will require the following works:

- a. Bidges Road from the proposed service road adjacent to the Federal Highway to the proposed link road through Lot 6 DP 246156 Bidges Road to be upgraded to Type 5 - Local Access Road.

1.5 km @ 104,800 / km
\$157,200

- b. Bidges Road south of proposed link road to Old Goldmines Road to be upgraded to a Type 4b Road.

0.6 km @ \$69,870 / km
\$41,920

- c. Old Goldmines Road from Bidges Road to half way across the frontage of Lot 250 to be upgraded to a Type 4a Road

0.8 km @ \$122,275 / km \$97,820

- d. Complete and upgrade the link road from Bidges Road to the Sutton Acres development to a Type 4b standard.

- i. from Type 4a to Type 4b

0.3 km @ \$60,000 = \$18,000

- ii. Type 4b road

0.3 x \$190,000 = \$57,000 \$75,000

P 7.10.4 Apportionment

Required Works	Cost	Sub-Catchments Benefited	No. of Lotes Benefited
Bidges Road to Link Road	\$157,200	2 & 3	30 + 54
Bidges Road Link Road to Old Goldmines Road	\$41,920	1&2	25 + 30
Old Goldmines Road	\$97,820	Part of 2	4
Link Road	\$75,000	1, 2 & 3	25 + 30 + 54

P 7.10.5 Section 94 Contributions

$$\text{Section 94 Contribution} = \frac{\text{Cost of Required Works}}{\text{Lots Benefited}}$$

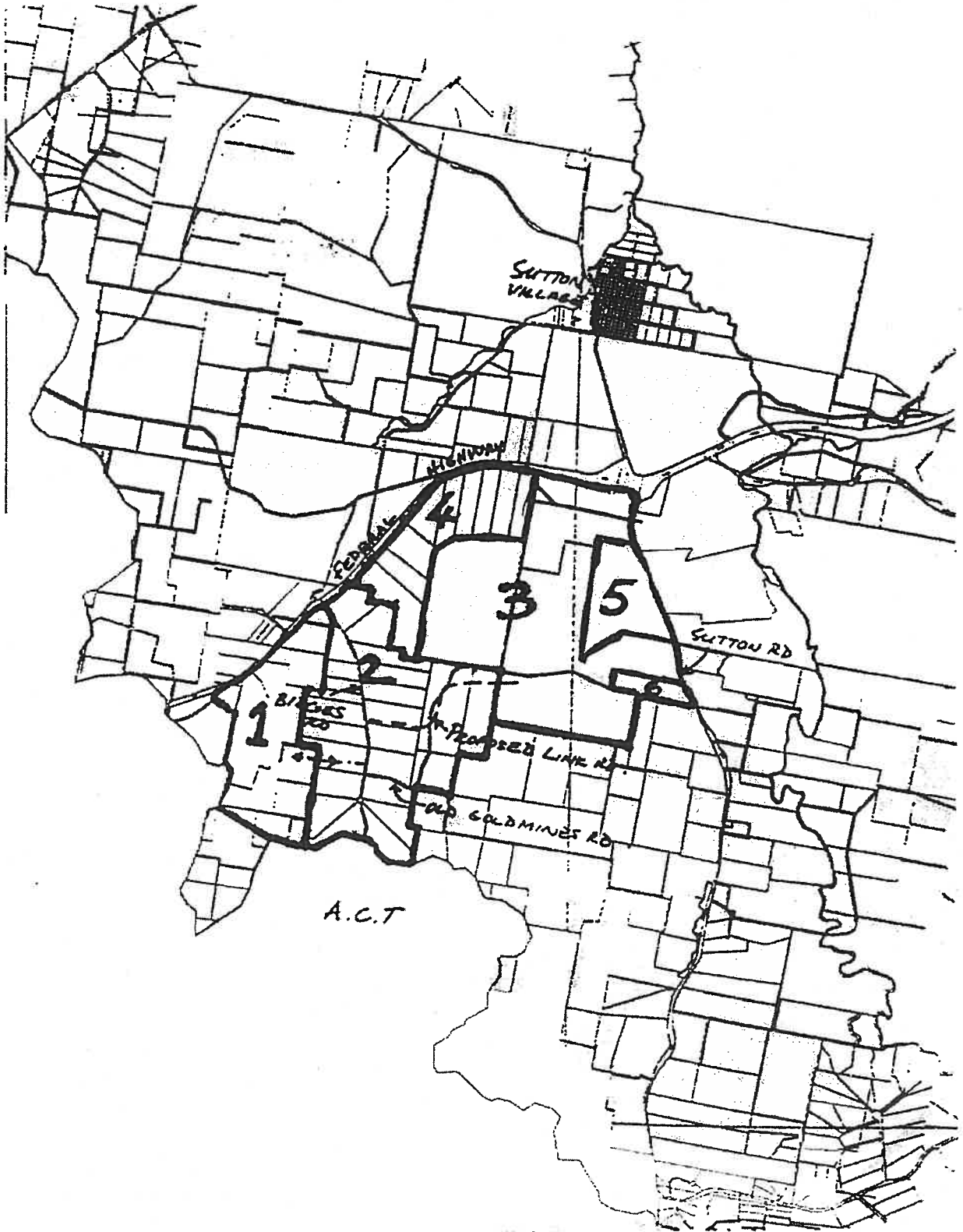
Sub Catchment	Costs	Lots	Section 94
1	\$41,920	55	\$760/lot
	\$75,000	109	\$690/lot
2	\$157,200	84	\$1,870 / lot
	\$41,920	55	\$760 / lot
	\$97,820	4	\$24,450 / lot
	\$75,000	109	\$690/lot
3	\$157,200	84	\$1,870/lot
	\$75,000	109	\$690/lot
4, 5, 6		25	minimum

Summary of Section 94 contributions payable.

For Subcatchment 1	\$1,450 / lot
For Subcatchment 2 - not on Old Goldmines Road	\$3,320 / lot
For Subcatchment 2 - on Old Goldmines Road	\$27,770 / lot
For Subcatchment 3	\$2,560 / lot
For Subcatchments 4, 5, & 6	\$920 / lot

(NOTE: These rates have been calculated at March 1994 prices and will be subject to annual adjustment in accordance with sub clause P 7.6.11.

PLAN 7.10



Date: 23rd April 1998 - Page: 1

Copyright © Base maps copyright Land Information Centre, 1997
Copyright © Yarrowlumla Shire Council, 1998

P 7.11 Woolshed (Added as part of Amendment No. 5)

P 7.11.1 Area Served

Future developments that may occur along the 1.45 km length of Woolshed Lane from the Macs Reef Road end.

P 7.11.2 Expected Lot Yield

14 extra lots.

P 7.11.3 Road Upgrading Required

The current standard of the gravel road along Woolshed Lane has been satisfactory for the level of developments to date; apart from the sub-standard intersection at Macs Reef Road end.

Upgrading over time to appropriately provide for the future developments will require the following works:

a.	upgrading to type 4 road over 1.45 km @ \$140,000 / km at eastern end	\$203,000
b.	upgrading to Type 3 Road over 0.75 km @ \$40,000 / km at western end	\$30,000
c.	Macs Reef Road intersection to be upgraded to a AUR / BAL intersection	\$25,000

7.11.4 Section 94 Contributions

a.	For Woolshed Lane upgrading including intersection treatment:	
	$\frac{258,000}{14 \text{ lots}} =$	\$18,430 / lot
b.	Towards access roads leading to Woolshed Lane (see Section 7.5 of S94 Plan)	\$5,290 / lot
	TOTAL SECTION 94 RATE REQUIRED	\$23,720 / lot

(NOTE: These rates have been calculated at March 1994 prices and will be subject to an annual adjustment in accordance with sub clause P 7.6.11)

P 8.0 Works Program

Attachment 6 contains the intended program of works to be undertaken in each catchment over the next ten years.

The program will be sensitive to the rate and location of subdivisions especially in the new rural residential zones.

Funds collected under CASE 3 contributions will be pooled and expended on access road provisions on any road, within the catchment in which it was collected, on a needs basis. Priorities are decided on the effectiveness of the works item to provide overall benefit in the catchment defined.

It is intended that the program be reviewed at least once each year in association with the preparation of Council's Annual Estimates.

P 9.0 Payment of Contributions

P 9.1 Payment of Contributions

Contributions may be required to be settled by one or a combination of the following methods:

- monetary contributions;
- dedication of land; and/or
- provision of a material public benefit, i.e, works 'in kind'.

P 9.2 Timing of Contribution

Contributions are required to be paid as follows:

- DA's involving subdivision – at release of plan of subdivision.
- DA's involving building work – prior to issue of the construction certificate.
- DA's where no building approval is required – prior to the commencement of the development.

P 9.3 Deferred and Periodic Payment

Council will consider deferral of the payment of contributions upon application in writing.

Deferred payment arrangements shall include the following conditions:

1. A bank guarantee will be required to be lodged for the full value of the contribution(s) plus an allowance for expected increases in the road cost index during the period for which the bank guarantee is expected to be held. The applicant will be responsible for any charges involved in servicing the guarantee.
2. The amount of contribution outstanding will be indexed in line with movements in the Road Cost Index (see P 7.6.11) so that the value of the contribution does not diminish over time. Indexing will be calculated from the date on which the contribution was due to the date of payment.
3. For subdivisions, a period of up to 3 years will be allowed from the release of linen plan for applicants to exchange the bank guarantee held by Council for cash. Applicants will be required to pay the S94 contribution attributable to each lot as each lot is sold, or otherwise Council will call up the amount due. At the completion of the 3 year period Council will call up any outstanding amount still payable regardless of whether all lots are sold or not.

An alternative to deferred payments is for an applicant to request that contributions be satisfied through periodic payments. An application for periodic payments needs to be made in writing and should include details of instalments, including interest calculations. Periodic payments will be indexed in the same manner as deferred payments and similar bank guarantee requirements will also apply.

P 9.4 Dedication of Land and Material Public Benefits

A decision as to whether to accept the dedication of land or the provision of a material public benefit/works 'in kind' in lieu of a monetary contribution, will be at the discretion of Council. Factors Council will take into consideration include:

- the extent to which the land / MPB / works satisfies a community need;
- the extent to which the land / MPB / works satisfies the purpose for which the contribution was sought;
- a consideration of locational and other factors which may affect useability;
- an assessment of recurrent maintenance costs to Council.

P 9.5 Payment of GST

Applicants for developments will be required to pay any Goods and Services Taxes which may apply to S94 contributions.

P 10.0 Accountability

P 10.1 S 94 Accounting for Contributions

Council has established an identifiable account for the management of S94 contributions, showing separate divisions of contributions for each of the identified Roads Catchments and Village Areas.

Contributions must be spent for the purpose for which they were levied within the time frames specified in the Works Program Attachment 6. This purpose, under this Plan, is for the provision of road asset within the catchment or village in which the contribution has been taken. Interest will be calculated on funds held for each category and credited as appropriate.

P 10.2 Priority Spending

Council may permit the short-term transfer of funds between catchments and other S94 categories in order to enable works to be undertaken on a priority basis, for example where drainage works are required to be in place prior to other aspects of a subdivision proceeding. This will only be done on the basis that:

- full details of the transfer and subsequent reimbursement of funds are recorded;
- the transferred funds are returned to the relevant catchments/categories by future contributions;
- there is a reasonable expectation that future contributions will be obtained to enable reimbursement of the catchment/category from which monies have been transferred;
- the purpose for which the contributions are transferred is a purpose identified in the Works Program;

Council is not permitted to transfer funds between the S 94 account and other funds of Council, for example the General Fund.

P 10.3 Contributions Register

Council will maintain a register of all contributions received. The register will record:

- the origin of each contribution by reference to the development consent to which it relates;
- the type of contribution received, e.g. money, land, works 'in kind';
- the amount of the contribution and the purpose(s) for which it was levied;
- The name of the contributions plan the contribution is being levied under;
- The date of receipt of the contribution;

The register will be available for public inspection, free of charge, at any time during normal office hours.

P 10.4 Annual Statement

Council will produce an annual statement of contributions received which summarises, by purpose and area, details relating to contributions, in accordance with C1 41N of the Regulation. This information will be available for public inspection, free of charge, at any time during normal office hours.

P 10.5 Review of Plan

Any material change in the plan, with the exception of the annual adjustment of contribution amounts and the annual review of the works program, will require that the plan be amended in accordance with S94 AB of the Environmental Planning and Assessment Act, 1979. This will require full public exhibition of the amended plan and consideration of submissions received.

RURAL RESIDENTIAL SUBDIVISION ROAD STANDARDS SCHEDULE

ROAD CATEGORY STANDARD	PRIVATE ROAD TYPE 1	PRIVATE ROADS (i.e R.O.W Or Crown Roads) OR PUBLIC ROADS (i.e, When Dedicated)		PUBLIC ROADS				
		TYPE 2	TYPE 3	CUL-DE-SAC (I)		LOCAL ACCESS	COLLECTOR	ARTERIAL
				TYPE 4a (D)	TYPE 4b	TYPE 5	TYPE 6	TYPE 7
NO OF LOTS	1	2/3	4/5	0-15	15-40	0-100	100-300	>300
VPD/lot	7	7	7	7	7	6	6	6
TRAFFIC VOLUME VPD	7	14	21-35	0-105	105-280	0-600	600-2000	>2000
FORMATION	4.0	4.7	5.8	7.0	7.5	8.0	9.5	10.5
SEAL WIDTHm				(E,F)	(F)			
a. Lanes	-	-	-	1@4.0 or 2@2.8m	2 @ 3.0 m	2 @ 3.0 m	2 @ 3.25 m	2 @ 3.5 m
b. Shoulders	-	-	-	-	-	2 @ 0.5 m	2 @ 0.5 m	2 @ 0.5 m
RESERVE WIDTHm (G)	15	15	20	20	25 (C)	30 (C)	30 (C)	30 (C)
*MIN. BASE MATERIAL THICKNESS mm (A)	100	100	100	100	100	150	150	200
DESIGN TRAFFIC LOADINGS ESA's								
a. attributable to each lot	1 x 10 ³	1 x 10 ³	1 x 10 ³	1.5 x 10 ³	1.5 x 10 ³	2 x 10 ³	2.0 x 10 ³	2.0 x 10 ³
b. for max number of lots allowed	1 x 10 ³	2 x 10 ³	5 x 10 ³	2.25 x 10 ⁴	6.00 x 10 ⁴	2 x 10 ⁵	6 x 10 ⁵	1 x 10 ⁶
c. with minimum allowance for through traffic	1 x 10 ³	2 x 10 ³	5 x 10 ³	2.25 x 10 ⁴	6.00 x 10 ⁴	2 x 10 ⁵	6.25 x 10 ⁵	≥ 1.1 x 10 ⁶
GENERAL MINIMUM DESIGN SPEED Kph (J)	40	40	40	50/60 (E)	60	70	80	80
**MAXIMUM GRADE % (B)	16	16	16	14	12	12	11	10
DRAINAGE DESIGN FREQUENCY 1 IN YEAR (H)	2	2	2	20 10 5 2	100 50 20 2	100 50 20 2	100 50 20 2	100 50 20 2
MINIMUM HORIZONTAL CURVES RADIUS (m)	-	-	-	50/90 (E)	90	150	220	240

- A. Pavement design to be in accordance with:
- for Type 5, 6, & 7 sealed roads - AUSTRROADS 'Pavement Design' (1992) and as amended
 - for Type 4 sealed roads - ARRB Report No. 41 and as amended
 - for gravel roads - ARRB 'Unsealed Roads Manual' (1993) and as amended
- B. Scour protection and silt control of roadside areas and drainage is required along all roads in accordance with the requirements of DLWC (Soil Conservation Service) or other accredited soil conservation practitioner. For gravel roads, a small increase in maximum grade may be accepted if road over steeper section is bitumen sealed.
- C. A reduction in the road reserve width may be permitted in flatter terrain if it can be demonstrated that the road formation cut and fill batters, drainage, lateral clearances at top and bottom of batters of at least 2.5 m and necessary horse trails and services can be adequately incorporated within the road boundaries. Minimum road reserve width shall be 20 m for 4b roads and 25m for Types 5, 6 & 7 roads.
- D. A Type 4a standard road shall be provided:
- where a new public road serving up to 15 lots is being created; and/or
 - when an existing road, Category 4, is to be utilised to serve between 6 - 15 lots; and/or
 - where there is clustering of 3 or more lots along a crown road reserve or R.O.W that is likely to give rise to significant dust problems for affected dwellings. In the case of R.O.Ws longer term maintenance responsibility shall fall to the owners of properties being served.
- E. For 0-8 lots minimum requirements are 4.0 m wide bitumen seal, 50 kph design speed and 50 m horizontal curve radius; for 8-15 lots minimum requirements are 5.6 m wide seal, 60 kph design speed and 90 m horizontal curve radius.
- F. Widening of seal may be required on curves and along any alignment with poor sight distances.
- G. Actual widths of road reserves shall be determined to cater for verges required for the development of the 'Greenways' network.
- H. Adequate provision shall be made for overtopping in accordance with AUSTRROADS 'Bridge Design Code'.
- I. Cul-de-Sac Roads shall be provided with end turning circles in accordance with Plan KP/B Issue 5/4/00. A 2.5 m clearance from top/bottom of cut/fill batter shall be provided to the road boundaries.
- J. Lower or higher design speed may be specified in special circumstances of topographical and/or environmental conservation constraints.

VPD vehicles per day
 ESA's Equivalent Standard Axles
 ROW Right of Way
 Waterways When design requires:

- (i) Bridge Structure with effective waterway area > 30 m²)
 (ii) Major Culvert Structure with effective waterway area > 3 < 30 m²)
 (iii) Minor Culvert Structure with effective waterway area < 3 m²)
 (iv) Catch Drains)
- NOTE: Additional erosion control works and/or overtopping structures catering for 1 in 100 yr flood may be considered under special circumstances

NON-URBAN '1A' ROAD STANDARDS SCHEDULE

	PRIVATE ROAD	PRIVATE ROADS (i.e R.O.W Or Crown Roads) OR PUBLIC ROADS (i.e, When Dedicated)			PUBLIC ROADS		
					GRAVEL Local Access	GRAVEL Local Access/Collector	SEALED Collector
ROAD CATEGORY STANDARD	TYPE 1	TYPE 2	TYPE 3	TYPE 8	TYPE 9	TYPE 10	
NO OF LOTS	1	2/3	4/5	0-15	15-35	100 (C)	
VPD/lot	7	7	7	6	6	6	
TRAFFIC VOLUME VPD	7	14	21-35	35-90	90-210	600	
FORMATION	4.0	4.7	5.8	7.0	7.5	8.0	
SEAL WIDTHm	-	-	4.0 (E)	4.0 or 5.6 (E,F)	5.6 (F)	7.0	
RESERVE WIDTH m (G)	15	15	20	20	20	30 (D)	
*MIN. BASE MATERIAL THICKNESS mm (A)	100	100	100	100	100	150	
DESIGN TRAFFIC LOADINGS ESA's							
a. attributable to each lot	1×10^3	1×10^3	1×10^3	1.5×10^3	1.5×10^3	2.0×10^3	
or max number of lots allowed	1×10^3	3×10^3	5×10^3	2.25×10^4	5.25×10^4	2×10^5	
GENERAL MINIMUM DESIGN Kph SPEED (I)	40	40	50	60	60	70	
**MAXIMUM GRADE % (B)	16	16	16	14	12	12	
DRAINAGE DESIGN (i)	2	2	2	20	100	100	
FREQUENCY 1 IN ... (ii)				10	50	50	
YEAR (H) (iii)				5	20	20	
(iv)			2	2	2	2	
MINIMUM HORIZONTAL CURVES RADIUS (m)	-	-	50	90	90	150	

- A. Pavement design to be in accordance with:
a. for sealed roads - ARRB Special Report 41 (1989) and as amended.
b. for gravel roads - ARRB 'Unsealed Roads Manual' (1993) and as amended.
- B. Scour protection and silt control of roadside areas and drainage is required along all roads in accordance with the requirements of DLWC (Soil Conservation Service) or other accredited soil conservation practitioner. A small increase in maximum grade may be accepted if road over the steeper section is bitumen sealed.
- C. Where number of lots served is marginally > 100, a Type 6 or 7 Road will be required.
- D. A reduction in the road reserve width may be permitted in flatter terrain if it can be demonstrated that the road formation, cut and fill batters, drainage, lateral clearances at top and bottom of batters of at least 2.5 m and necessary horse trails and services can be adequately incorporated within the road boundaries.
- E. Type 3 and Type 8 Roads shall be bitumen sealed where there is to be a clustering of 3 or more lots that is likely to give rise to significant dust problems for affected dwellings.
- F. Where any single or staged subdivision or development results in a significant increase in traffic the applicant will be required to construct to a bitumen sealed standard the road for 100 m on each approach to any existing residences lying within 120 m of the centreline of the road(s) over which access is being gained to serve the new subdivision/development. A 'significant increase in traffic' shall mean:
- for Type 8 Roads ≥ 4 extra lots
 - for Type 9 Roads ≥ 8 extra lots
 - for type 10 Roads (not already sealed) ≥ 20 extra lots
- G. Actual widths of road reserves shall be determined to cater for verges required for the development of the 'Greenways' network and to provide turning circles on dead end roads (see Plan KPB Issue 1/7/99).
- H. Adequate provision shall be made for overtopping in accordance with AUSTRROADS 'Bridge Design Code'.
- I. Lower or higher design speed may be specified in special circumstances of topographical and/or environmental conservation constraints

VPD vehicles per day

ESA's Equivalent Standard Axles

ROW Right of Way

Waterways When design requires:

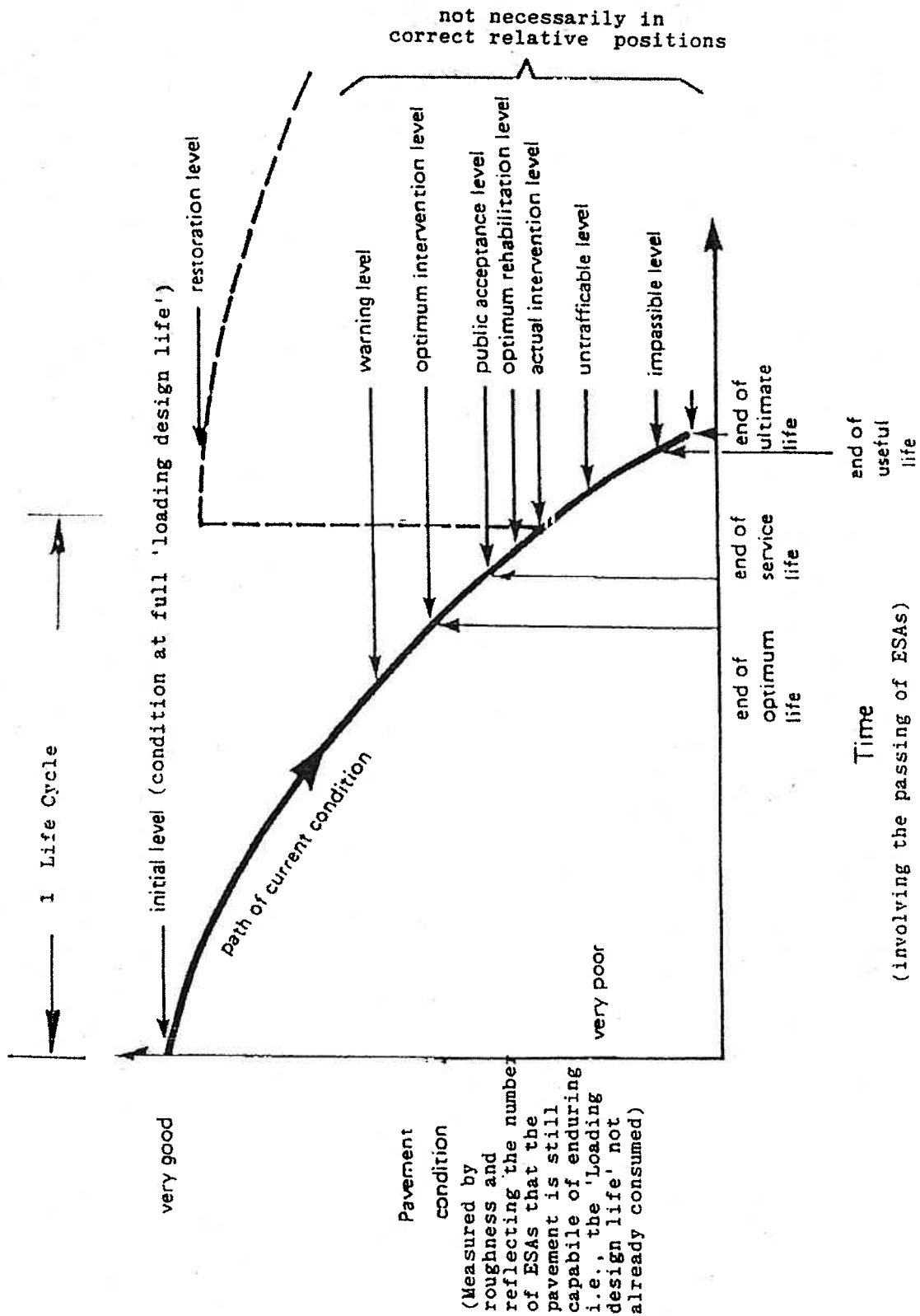
(i) Bridge Structure with effective waterway area > 30 m²)

(ii) Major Culvert Structure with effective waterway area > 3 < 30 m²)

(iii) Minor Culvert Structure with effective waterway area < 3 m²)

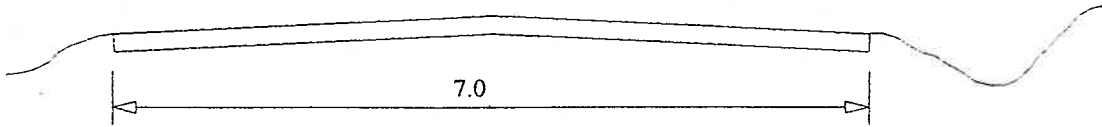
(iv) Catch Drains

NOTE: Additional erosion control works and/or overtopping structures catering for 1 in 100 yr flood may be considered under special circumstances



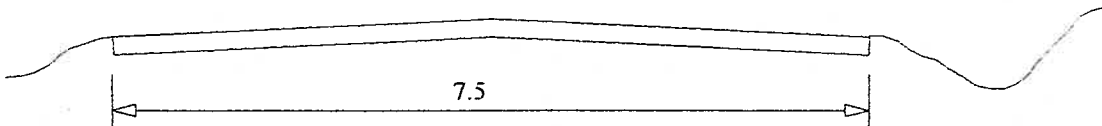
ATTACHMENT 4
TYPICAL FORMATION CROSS-SECTIONS REQUIRED FOR
VARIOUS RURAL ROAD STANDARDS

TYPE 8 (GRAVEL)



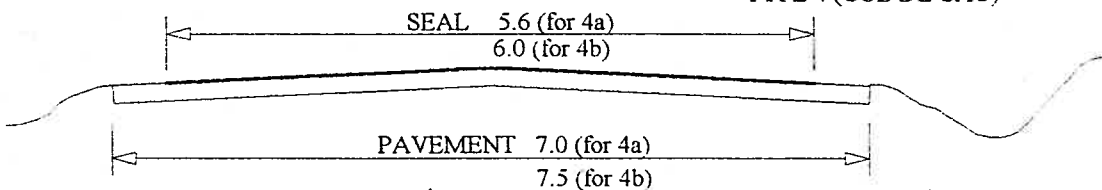
Typically 150 mm thick (based on 2.25×10^4 ESA and subgrade with CBR of 7 and Fig 3.1 of ARRB Unsealed Roads Guide)

TYPE 9 (GRAVEL)



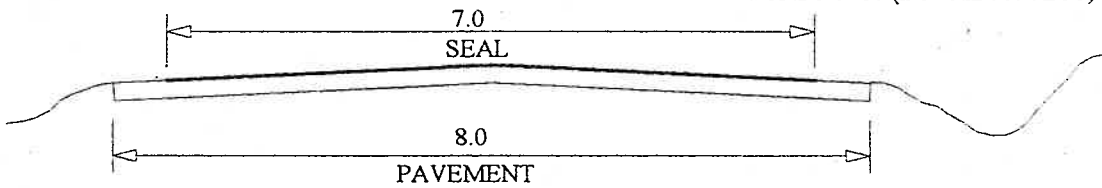
Typically 165 mm thick (based on 4.5×10^4 ESA and subgrade with CBR of 7 and Fig 3.1 of ARRB Unsealed Roads Guide)

TYPE 4 (CUL-DE-SAC)



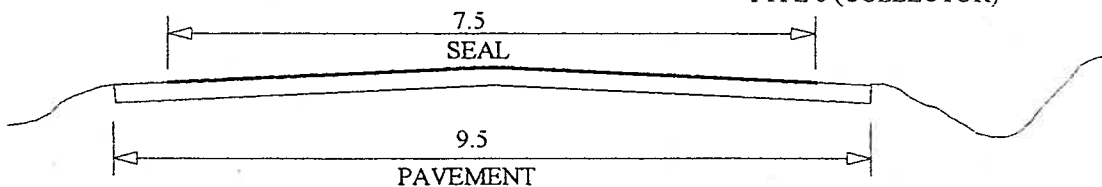
Typically 200mm thick for 4a (based on 2.25×10^4 ESA) and 220mm thick for 4b (based on 6×10^4 ESA) with subgrade CBR of 7 - from Fig 13.8.2(B) of ARRB Report No 21

TYPE 5 & 10 (LOCAL ACCESS)



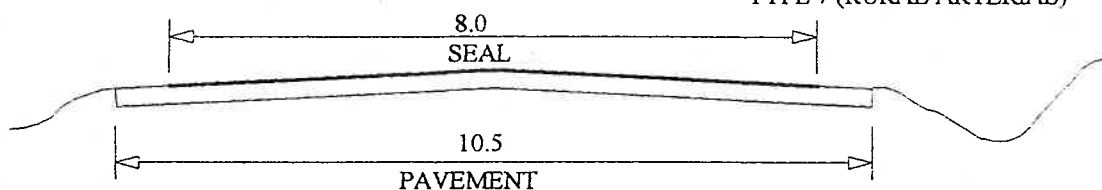
Typically 250 thick (based on 2×10^5 ESA, subgrade with CBR of 7 and Fig 13.8.2(b) of ARRB Report No. 21)

TYPE 6 (COLLECTOR)



Typically 300 thick (based on 6.25×10^5 ESA, subgrade with CBR of 7 and Fig 8.4 of Austroads Pavement Design Guide)

TYPE 7 (RURAL ARTERIAL)



Typically 330 thick (based on 1.1×10^6 ESA, subgrade with CBR of 7 and Fig 8.4 of Austroads Pavement Design Guide)

(NOTE for RR 7607, based on 1.3×10^6 ESA, allow pavement 340 mm thick)

ATTACHMENT 5

**PAVEMENT CONSTRUCTION/RECONSTRUCTION COSTS
FOR VARIOUS RURAL ROAD STANDARDS (PER KM)**

Type 8 Gravel

<u>Basecourse</u>	7.0 x 0.15 x 1000 x 2.2 x \$15/t	=	\$34,650
	SAY		\$35,000

Type 9 Gravel

<u>Basecourse</u>	7.5 x 0.165 x 1000 x 2.2 x \$15/t	=	\$40,840
	SAY		\$41,000

Types 4 For Cul-De-Sac Roads

4a.

a. <u>Basecourse</u>	7.0 x 0.2 x 1000 x 2.2 x \$24/t	=	\$79,200
b. <u>Sealing (2 Coat)</u>	5.6. x 1000 x \$4/m2	=	<u>\$22,400</u>
	SAY		\$96,300
			\$96,000

4b.

a. <u>Basecourse</u>	7.5 x 0.22 x 1000 x 2.2 x \$24/t	=	\$87,120
b. <u>Sealing (2 Coat)</u>	6.0 x 1000 x \$4/m2	=	<u>\$24,000</u>
	SAY		\$111,120
			\$111,000

Type 5 & 10 For Local Access Roads

a. <u>Basecourse</u>	8.0 x 0.25 x 1000 x 2.2 x \$24/t	=	\$105,600
b. <u>Sealing (2 Coat)</u>	7.0 x 1000 x \$4/m2	=	<u>\$28,000</u>
	SAY		\$133,600
			\$134,000

Type 6 For Collector Roads

a. <u>Basecourse</u>	9.5 x 0.3 x 1000 x 2.2 x \$24/t	=	\$150,500
b. <u>Sealing (2 Coat)</u>	7.5 x 1000 x \$4/m2	=	<u>\$ 30,000</u>
	SAY		\$180,500
			\$180,000

Type 7 For Rural Arterial

a. <u>Basecourse</u>	10.5 x 0.33 x 1000 x 2.2 x \$24/t	=	\$183,000
c. <u>Sealing (2 Coat)</u>	8.0 x 1000 x \$4/m2	=	<u>\$ 32,000</u>
			\$215,000
	(For RR 7607 – add extra base	=	<u>\$5,500</u>
	10.5 x 0.01 x 1000 x 2.2 x \$24/t		\$220,500)

Catchment	Road	Description of Works	Estimated Cost	Source Funds		Target Date	Comments
				S 94 Cont	Other		
1	Smiths Road	Gravel Pavement Upgrading	To value of S 94 received	Amount received		Within 2 years of receipt	
2	Old Cooma Road Williamsdate Road Other Roads	Road Upgrading Road Upgrading 0-0.3 from Burra Rd (including low level crossing) Pavement Upgrading Pavement Upgrading	\$130,000 To value of S94	\$40,000 Case 2 funds	\$90,000 Cl. Rev	" " "	The works involved are indicated in sub-section P7.7 \$1,300 / lot applies to meet costs
3	The Ridgeway Area	Pavement Upgrading	To value of S94	Amount Rec'd		Within 5 years	No development expected
4	Captains Flat Road Wanna Wanna Road Forbes Creek Road Gidleigh Lane	Pavement Upgrading between Stony Creek Place & Keams Parade Road Upgrading Forbes Creek Road/Hoskinstown Road Intersection Pavement widening	240,000 To value of S 94 received \$64,000 \$25,000	120,000 Case 3 funds Amount received \$20,000 Case 3 funds \$25,000 Case 3 funds	120,000 repair program \$44,000 State Forest	1999/2000 Within 2 years of receipt 2000/2001 2000/2001	Works will involve sealing of Wanna Wanna Road in stages in keeping with Subsection P7.6.6.3 Subject to State Forests contribution. Site of works between Gidleigh Station and Ingledow Lane
5	Millpost Lane	Pavement Upgrading	To value of S94	Amount Rec'd		Within 2 years	
6	Bungendore Road Summerhill Road The Forest Road	Pavement Upgrading a. Pavement Upgrading between ch 6.54 - 7.28 km b. Pavement Upgrading between ch 2.9 - 3.9 km Road Upgrading (seal 1.2 km at end) Road Upgrading (seal last 1.35km)	220,000 250,000 100,000 120,000	110,000 Case 3 funds 50,000 Case 3 funds 50,000 Case 2 funds 60,000 Case 2 funds	110,000 repair program 200,000 (RTA) 50,000 Cl. Rev. 60,000 Cl. Rev	2000/2001 2001/2002 Within 2 years of receipt " " " "	Subject to funds being received. " " Refer to subsection P7.6.6.1. Subject to S 94 Contributions being received. Stage 1 completed 98/99. Refer to sub section P7.6.6.2. Subject to S 94 contributions being received.
	Joe Rocks Road	Road Upgrading - seal between Bungendore Road and The Mountain Road	230,000	230,000 Case 2 funds	-	"	Refer to Subsection P7.9
	Clare Lane	Road Upgrading to sealed construction	360,010	280,010 Case 2 funds	80,000 (repair program)	Within 2 years of receipt of S 94 "	Refer to Subsection P7.8
	Woolshed Lane	Road Upgrading to sealed construction	258,000	258,000 Case 2 funds		"	Refer to Subsection P7.11
7	Roads west of Federal Highway north of Sutton	Pavement Upgrading	To value of S 94 received	Amount received		Within 2 years of receipt	Little Development is expected
8	Roads of the Sutton Rural Residential Precinct	Road & Pavement Upgrading	667,000	Case 1, Case 2 and Case 3		Within 2 years of receipt	Refer to Subsection P7.10
9	MR 52 north (Sutton Road)	Pavement Upgrading	To value of S94 received	Amount received		"	
10	Gundaroo Road	"	"	"		"	
11	Springrange Road	"	"	"		"	
12	Nanima Road	"	"	"		"	
13	Church Lane	"	"	"		"	
14	Wallaroo Area Roads	"	"	"		"	
15	Parkwood Road	"	"	"		"	
16	Fairlight/Mountain Creek Road	"	"	"		"	
17	Turnut Road	"	"	"		"	

Catchment	Road	Description of Works	Estimated Cost	Source Funds		Target Date	Comments
				S94 Cont	Other		
Bungendore Village	Roundabout 1	At intersection of Molonglo/Gibraltar Streets	200,000		200,000 (RTA)	Completed Sept '97	
	Roundabout 2	At intersection of Malbon/Ellendon	200,000	35,000	165,000 (RTA)	by December 2004	Subject to S94 and RTA funds required being received
	Roundabout 3	At intersection of Molonglo/Malbon	200,000	35,000	165,000	by Dec 2008	"
	Turallo Creek Bridge	Reconstruction of Structure & Road Approaches	800,000	400,000	400,000	by Dec 2005	Subject to RTA grant S 94 funding includes contributions by extraction industries Tarago Road
	Powell Street	Upgrade to sealed standard between Gibraltar & northern end	14,000	4,000	10,000	by June 2001	Subject to S 94 funds required being received in advance of target date
	Trucking Yard Lane	Upgrade and seal between Kings Highway & Ellendon Street	50,000	10,000	40,000	by June 2003	"
	Osborne Street	Upgrade & seal between Malbon & Rutledge Sts	25,000	8	17,000	by June 2005	"
	Rutledge Street	Upgrade & seal between Modbury & Osborne Streets	25,000	8	17,000	by June 2007	"
Sutton Village	Camp St/North St	Upgrade & seal between MRS2 & Bywong Street	35,000	5	30,000	by June 2001	"
Captains Flat village	George St area	Upgrade & seal	35,000	5	30,000	by June 2003	"

ATTACHMENT 7

EXAMPLE OF S 94 CONTRIBUTIONS FROM SAMPLE LOCATIONS

a. A worked Example

Applying $S\ 94 = L_n \times R_n \times T_n$, the S 94 contribution applicable to the creation of a new lot 1 km along Creekborough Road would be as follows:

From Traffic Probability map for Catchment 6 Location 2.

Catchment 6 Location 2

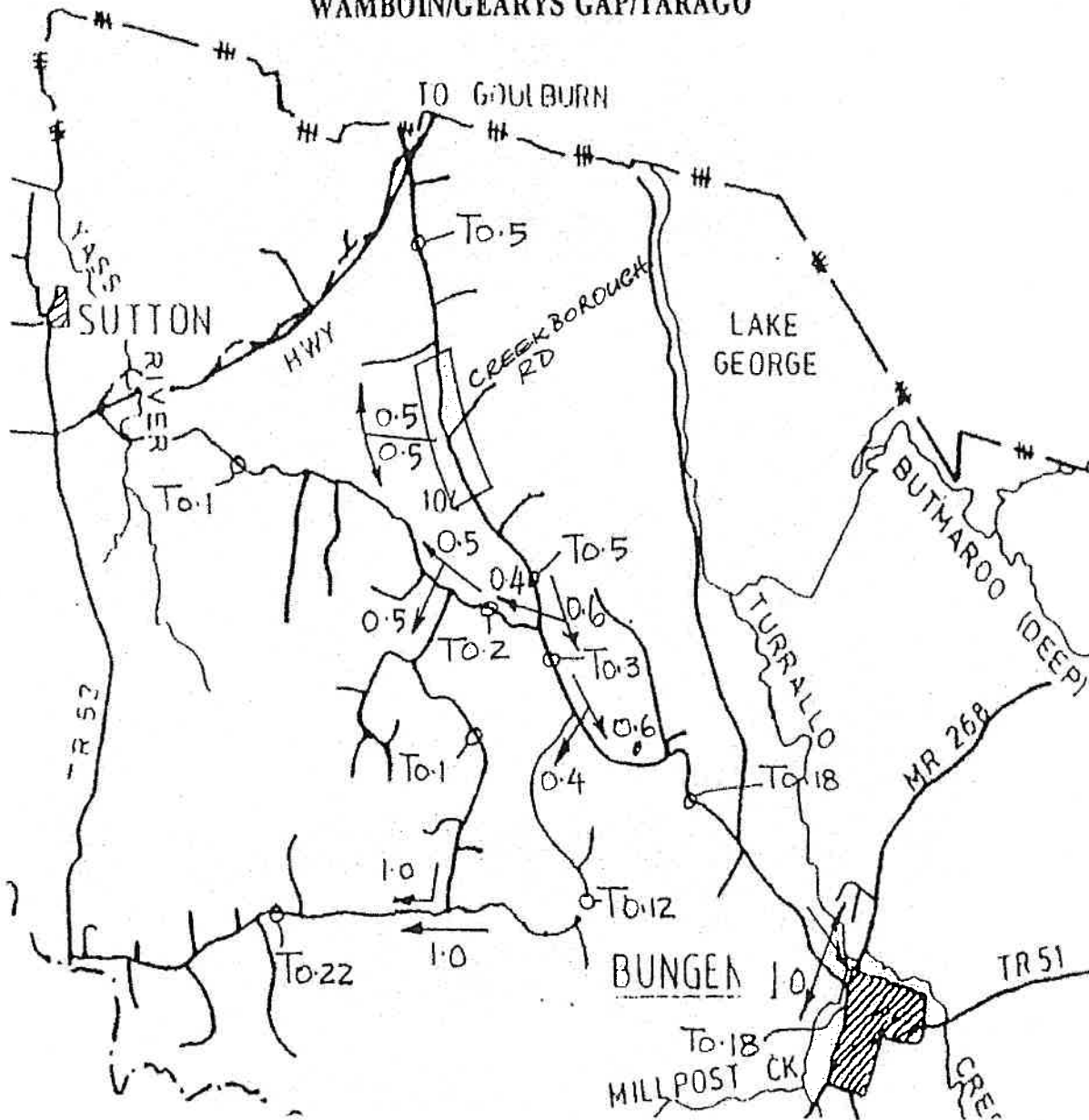
ROAD NAME	CATEGORY	KM'S	SECTION 94 RATE	TRAFFIC FACTOR	AMOUNT
Creekborough	Cul-de-sac	1	1000	1	\$1,000.00
Bungendore	Collector	4.3	580	0.5	\$1,245.00
	Collector	3.5	580	0.5	\$1,015.00
	Arterial	1.2	340	0.3	\$120.00
	Arterial	8.4	340	0.18	\$510.00
Bungendore	Roundabouts		240	0.18	\$45.00
Macs Reef	Arterial	1.8	340	0.2	\$120.00
	Arterial	8.4	340	0.1	\$290.00
Denley/Weeroon	Collector	6.4	580	0.1	\$370.00
a					
Norton	Collector	7.5	580	0.12	\$520.00
	Collector	7.4	580	0.22	\$945.00
			TOTAL		\$6,180.00

SECTION 94 CONTRIBUTION TOWARDS ACCESS ROADS
TRAFFIC PROBABILITY MAP

CATCHMENT 6

LOCATION 2

WAMBOIN/GEARYS GAP/TARAGO



ATTACHMENT 7 (CONT'D)

c. Section 94 Contributions to be Levied

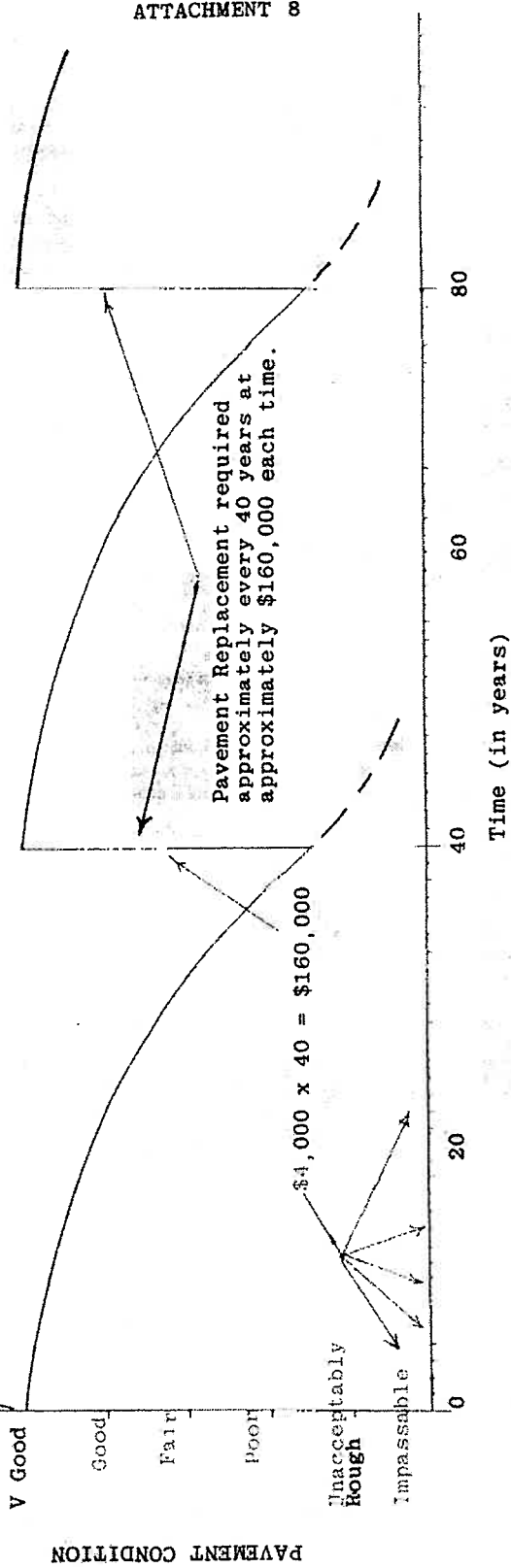
Sample Locations

CATCHMENT	LOCATION	TRAFFIC MAP	AMOUNT
2	At intersection Burra/London Bridge	C2L5	\$6,240 / lot
	At end of London Bridge	C2L5	\$7,640
	At intersection Urila/Burra	C2L9	\$9,300
	At end of Hardy Road	C2L9	\$16,100 (\$12,000 max)
	At intersection Hutchinson/Badgery	C2L6	\$12,000 (\$12,000 max)
	At end of Badgery	C2L6	\$14,150 (\$12,000 max)
4	At intersection Capts Flat/Wanna Wanna	C4L1	\$1,900
	At intersection Widgewa/Capt Flat Rd	C4L2	\$6,270
	At end of Widgewa	C4L2	\$9,970
	At intersection Plains/Hoskinstown Rd	C4L8	\$14,050 (\$12,000 max)
	At intersection MR 270/Wild C Road	C4L5	\$21,000 (\$12,000 max)
6	At intersection Fernloff/Norton	C6L11	\$3,020
	At intersection of Norton/Weeroona	C6L10	\$5,240
	At intersection of Summerhill/Bungendore	C6L3	\$6,270
	At intersection Bungendore/Millyn	C6L1	\$3,620
	At end of Millyn	C6L1	\$5,220
	At intersection The ForestRd/Bungendore	C6L13	\$5,270
	At end of seal on The Forest Rd	C6L13	\$6,510
	At intersection Mathews L/Bungendore	C6L14	\$3,480
9	At 2 km west from Sutton Rd along Tallagandra L	C9L1	\$4,040
14	At end of sealed section of Gooromon Ponds	C14L1	\$4,270
	At intersection of Brookland/Woodgrove	C14L1	\$8,760
	At intersection of Wallaroo/Oakey Ck	C14L1	\$5,670
	At end of Oakey Ck Rd	C14L1	\$7,700
17	At intersection of Crace Lane/Tumut Rd	C17L1	\$10,300

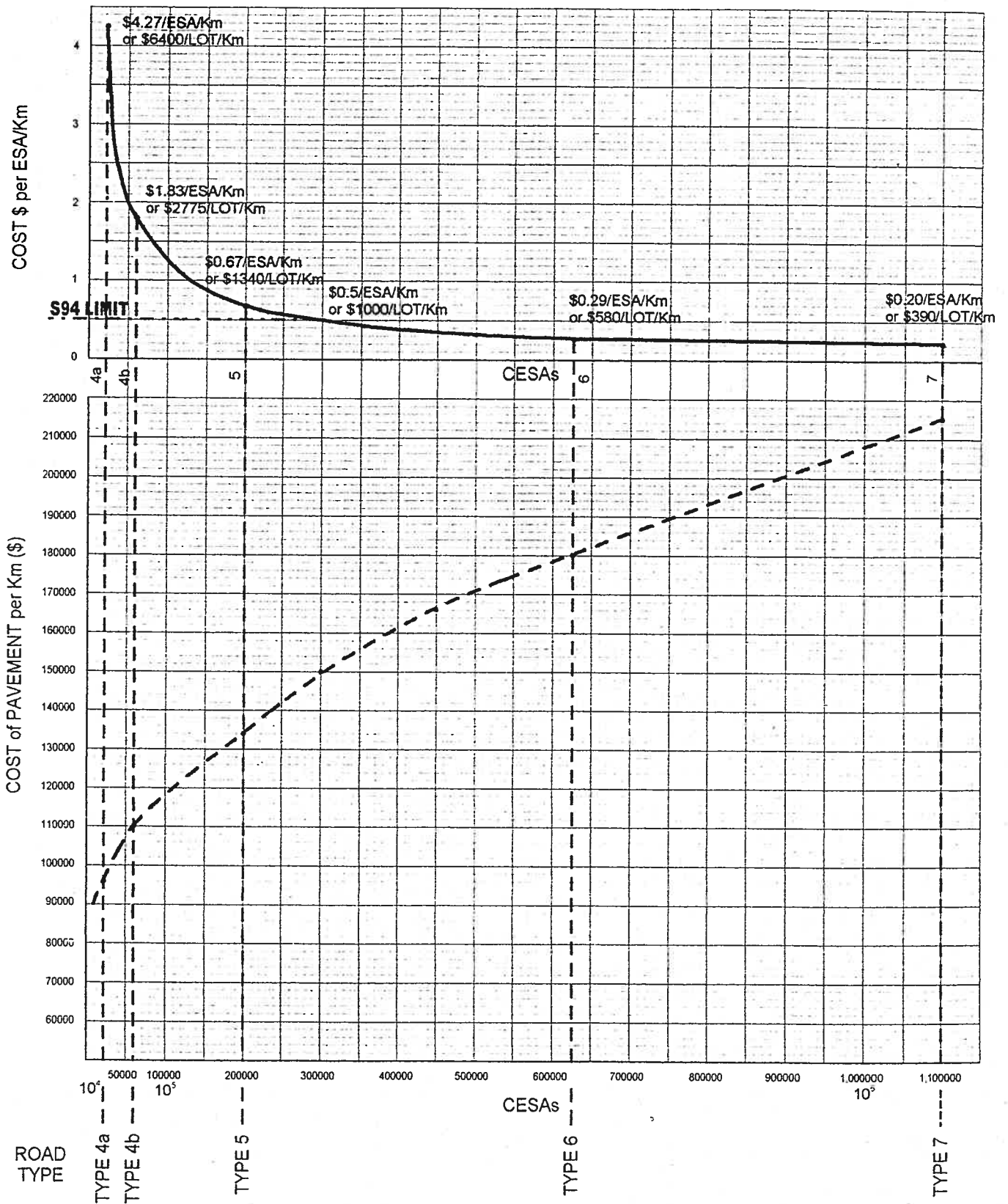
WHY IS THE REQUIREMENT FOR DEVELOPERS TO PAY A CASE 3 S94 CONTRIBUTION (i.e. for pavement provision) NOT ALREADY COVERED BY RATES?

NOTE 1
Under the S94 Plan Case 3 Council will be requiring each new lot to provide its own pavement for a life time of use in the first year.

NOTE 2 Prior to the new lot being released no rates had been paid to contribute towards the provision of pavement now necessary to cater for the traffic impact caused by the use of the new lot. Thus a 'one off' up front payment must be paid as a S94 contribution (CASE 3) to be expended by Council to provide the extra pavement required along the route travelled. Otherwise existing ratepayers are detrimentally affected.



Note 3 Once each new lot is released Council also needs to require that the owner of each new lot together with all other land owners collectively pay in their rates an amount of say \$160,000/40 = \$4,000 per year for each km of road within the Shire to create a fund to be available to replace the asset at the end of its useful life; in perpetuity.



COST OF PAVEMENT Vs CESAs
FOR SEALED ROADS

ATTACHMENT 10

PAVEMENT THICKNESS REQUIRED IS DETERMINED BY :

$$t = (219 - 211 (\log \text{ CBR}) + 58 (\log \text{ CBR})^2) \log \frac{N}{120}$$

where t = pavement thickness in mm
 CBR = Californian Bearing Ratio
 N = Design traffic in ESAs

From RTA's Form 76 'Pavement Thickness design'

For A Typical Rural Access Road

With 2×10^3 ESA (i.e. for 1 lot) on a subgrade with CBR of 7

$$t = (219 - 211 (\log 7) + 58 (\log 7)^2) \log \frac{2 \times 10^3}{120}$$

$$t = (219 - 211 (0.8451) + 58 (0.7142)^2) \times 1.2218$$

$$t = (219 - 178.3 + 41.4) \times 1.2218$$

$$t = 100.3 \text{ mm (say 100mm)}$$

With 2×10^5 ESA (i.e. for 100 lots) on a subgrade with CBR of 7

$$t = (219 - 178.3 + 41.4) \times 3.2218$$

$$t = 82.1 \times 3.2218$$

$$t = 264.5 \text{ mm (say 265mm)}$$

In the Section 94 Plan the developer is not required to provide 100mm of pavement but by apportionment is required to provide:

$$\frac{2 \times 10^3}{2 \times 10^5} \times 265$$

$$= 2.65 \text{ mm thickness of pavement over the length of the road travelled}$$

$$\text{or } \frac{2.65}{1000} \times 8 \times 1000 \times 2.1$$

$$= 45 \text{ tonne of road base per km per extra lot.}$$

On a Collector Road

(CBR of 7 and Design traffic of 6.25×10^5 ESA)

the calculation is

$$\frac{2 \times 10^3}{6.25 \times 10^5} \times 310$$

$$= 1 \text{ mm of pavement or 20 t of road base per km extra lot.}$$