Lcc.
s.94 CMP.

PART E

RURAL ROADS

NOVEMBER 1994

This report prepared by Engineering Dept, except Table 1, which (according to Bruce B.) was done by Nick personally based on flood traffic counts in the area.

1.0 PURPOSE OF THE PLAN

The purpose of this Plan is to present Council's strategy for the provision of an adequate r road network to cater for additional traffic generated by new development in the rural village areas, and to apportion the cost of upgrading rural roads in accordance with Section of the Environmental Planning and Assessment Act, 1979.

2.0 LAND TO WHICH THE PLAN APPLIES

This plan applies to development on all land within the City of Lismore outside the Lism urban catchment areas.

3.0 ESTABLISHMENT OF A NEXUS

Population growth and new development in rural and village areas generates additional traf on rural roads which has two effects, namely:

* It contributes to a requirement for a higher standard of road width and alignment to ensu adequate safety and amenity to cope with increased volumes of traffic, and
* It contributes additional axle loadings which either requires additional pavement width a thickness to provide the same design pavement life, or effectively shortens pavement life f a set pavement thickness. (A given pavement thickness has the capacity for a given number equivalent standard axles (ESA) over its design life).

Any development which leads to an increase in heavy vehicles as a percentage of total traff flow will also cause a reduction of pavement life and a subsequent increase in costs.

The adopted calculation for traffic generation for rural developments involving housing a shown in Table 1. These figures are based on actual traffic counts on rural roads throughou Lismore City. Contributions for commercial, tourist, special uses and industrial development will be calculated individually based on likely traffic generation and the formula used in thi Plan.

AADT = Movement = 1 way

TABLE 1
ESTIMATED TRAFFIC GENERATION FOR RURAL LAND USES

Landuse	Location	Trips per Day Generated
Multiple occupancy	Very isolated - poor quality access to Lismore or larger villages.	2.5
Multiple occupancy	>8km to Lismore or larger villages.	3.0
Multiple occupancy	5-8km to Lismore or larger villages.	3.5
Multiple occupancy	<5km to Lismore or larger villages.	6.0
Farm lots (20 ha plus)	Very isolated-poor quality access to Lismore or larger villages.	3.5
Farm lots	>8km to Lismore or larger villages.	4.5
Farm lots	5-8km to Lismore or larger villages.	5.0
Farm lots	<5km to Lismore or larger villages.	5.5
Hobby farms (>8ha)	Very isolated-poor quality access to Lismore or larger villages.	4.0
Hobby farms (>8ha)	>8km to Lismore or larger villages.	5.0
Hobby farms (>8ha)	5-8km to Lismore or larger villages.	5.5
Hobby farms (>8ha)	<5km to Lismore or larger villages.	6.5
Rural Residential Lots (<8ha)	Very isolated-poor quality access to Lismore or larger villages.	5.0
Rural Residential Lots (<8ha)	>8km to Lismore or larger villages.	5.5
Rural Residential Lots (<8ha)	5-8km to Lismore or larger villages.	6.5
Rural Residential Lots (<8ha)	<5km to Lismore or larger villages.	8.0

Used to be 6.5 single trips

The percentage of trips to and from Lismore generated by each development decreases with increasing distance from Lismore. This percentage is illustrated in Map No. 5(b) and forms the basis for calculating the number of trips for each road segment. Section 94 contributions apply to the road connecting the proposed development to Lismore and if relevant the nearest village, by the shortest route. The entire length of the route is utilised in the calculation of the applicable Section 94 contribution.

Future augmentation works for rural roads will take into consideration any deficiency in the current road standard. The costs of upgrading existing deficiencies to cater for existing traffic flows is a cost which will be met by Council.

It can be expected that new development in urban areas will also have some effect on traffic flows on rural roads, just as new development in rural areas will be likely to contribute to increased traffic flows on urban roads. However, for the purposes of this Plan, Section 94 Contributions for Rural Roads are levied on rural and village development only, and Section 94 contributions for Urban Arterial Roads are levied on development within the identified urban catchment areas only. The rural road levy accordingly includes no contribution towards the Lismore Urban Arterial Road System.

4.0 FORMULA FOR CALCULATING CONTRIBUTIONS

The formula for calculating Section 94 Contributions for rural roads is as follows:

$$P = 7300 \times n \times \frac{H}{100} \times \left(\frac{L1 \times R1}{\text{Pavement Design}} + \frac{L2 \times R2}{\text{Pavement Design}} \right)$$

Pavement Design eg 10^6 or 5×10^5

Where:

7300 is derived from 365 days pa over a 20 year road design life; and

P = Total cost or levy for one lot, dwelling, cabin, etc, to be created by the development.

n = Number of trips per day generated (from Table 1 and Map 5(a)).

H = Percentage of heavy vehicles (varies - see below).

L1 = Effective length of Road 1 (corrected as per Map 5(a)).

R1 = Construction cost per kilometre for Road 1 (varies - see below).

L2 = Effective length of Road 2 (corrected as per Map 5(a)).

R2 = Construction cost per kilometre for Road 2 (varies - see below).

<u>H Factor</u>

The following percentage should be applied unless Council is satisfied with another figure after substantiation by the developer.

3% for normal rural village dwelling activity, including rural residential development.

4% for multiple occupancy and hobby farms.

6% for farms greater than 20 ha.

R Factor
The following construction costs are to be applied to the formula.

Flat terrain
- 7 m formation width (5m bit. seal) - $210,000/km.
- 8 m formation width (6m bit. seal) - $240,000/km.
- 9 m formation width (7m bit. seal) - $270,000/km.

Undulating terrain
- 7 m formation width (5m bit. seal) - $245,000/km.
- 8 m formation width (6m bit. seal) - $280,000/km.
- 9 m formation width (7m bit. seal) - $315,000/km.

Pavement Design
Minor Roads - Council class C & D - adopt 5×10^5 ESA life.

Major Roads - Council class A & B - adopt 10^6 ESA life.

It is considered that the road should be to adequate standard prior to the development being assessed, ie, to adequate width alignment and pavement design. This means that the bridge or large culvert works will be considered as Section 90 requirements.

5.0 CALCULATION OF SECTION 94 ROAD CONTRIBUTION FOR HEAVY HAULAGE DEVELOPMENT

(eg Gravel Quarries, Cane and Timber Haulage and the like).

ESA Loading on Road: Typical gravel truck of single front axle with tandem axle and dual wheels on rear, is taken for this calculation.

Agg. Weight = 20.40T + Concessions = 22.5T

Tare weight average: 9.7T

∴ Payload = 12.80T average.

Number of ESA's per this vehicle for Class 4 or 5 Rural Road is a 1.9 factor. (Refer NAASRA 1987 - "Pavement Design" - Pages 114 and 126.)

$$\therefore \quad \frac{12.8T}{1.9} = 6.74T/ESA$$

The construction costs to bring the road up to the standard required before the development, ie, to adequate width and pavement design is in the range of $210,000 to $280,000 per kilometre for rural road.

Minor Roads: (Classes C & D)

$$\text{Levy} = \frac{\$210,000 \text{ to } \$245,000}{5 \times 10^5 \times 6.74} = \$0.06 \text{ to } \$0.07/T/Km$$

Major Roads: (Classes A & B and Regional or State Roads)

$$\text{Levy} = \frac{\$240,000 \text{ to } \$280,000}{10^6 \times 6.74} = \$0.04/T/Km$$

Minor quarries, ie with assessed annual production of less than 5,000m^3 to not pay a levy due to small and local haulage distances involved and the threat to the economic viability of its operation.

Moderate Sized Quarries, ie 5,000m^3 to 20,000m^3 annual production to pay on an average haulage distance of 10km at the abovementioned rate. To be calculated for each quarry and set for the year.

Major Sized Quarries, ie 20,000m^3 and above annual production to pay on an average haulage distance of 15Km. Calculated as mentioned above.

The annual production figure shall be based on the figure from the average over the previous three years or other figure agreed to by Council.

5.1 Discounts Applying to Heavy Haulage Development

The following discount factors apply to the calculation of rural road levies for heavy haulage development throughout Lismore:

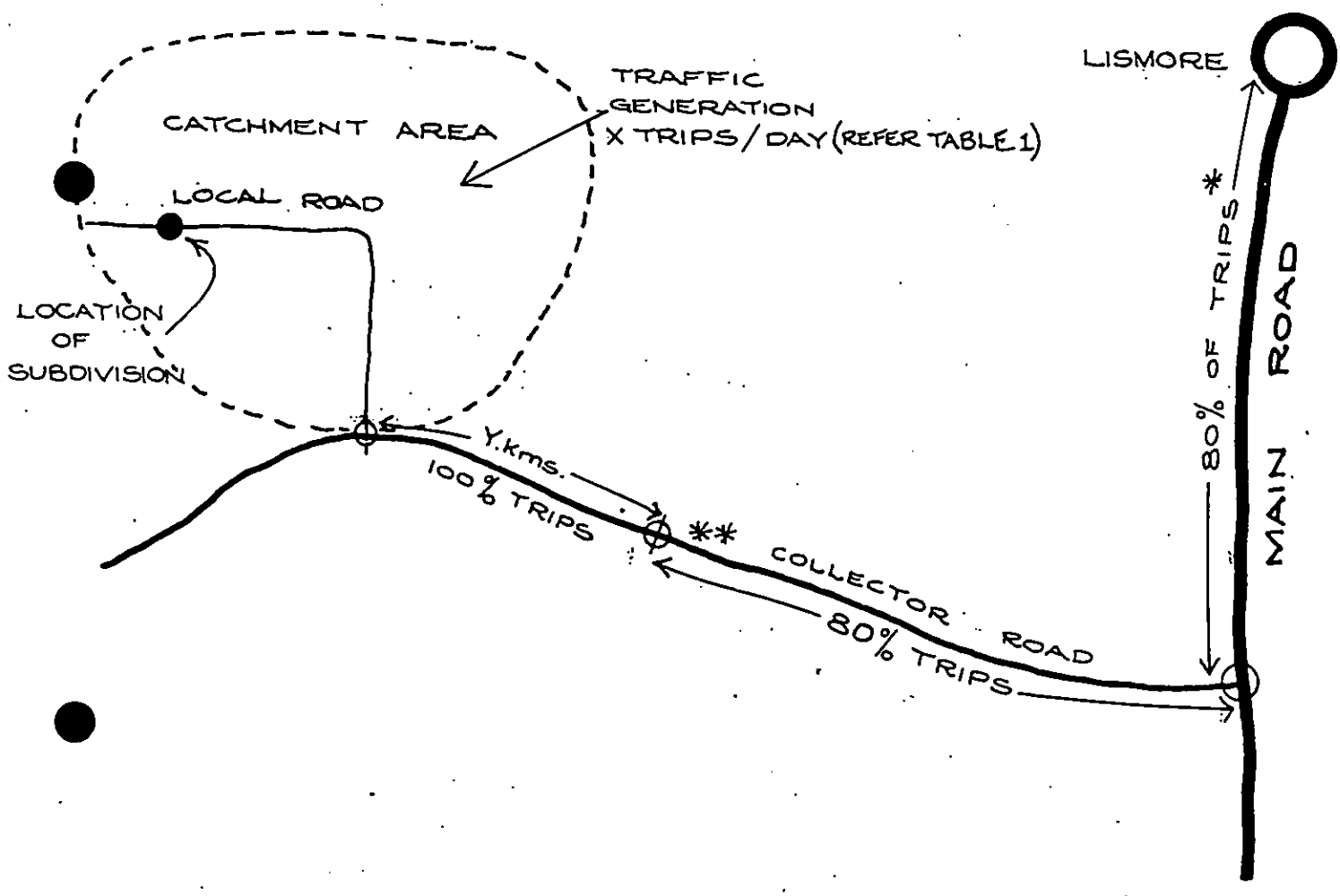
i) No levy will apply to the first 5,000m^3 per annum of material extracted from moderate and major sized quarries. Section 94 contributions do not apply to minor quarries with an annual production of less than 5,000m^3.

ii) A 50% discount will apply to the calculation of Section 94 contributions for existing production rates for any quarry registered as a continued operation under State Environmental Planning Policy No. 37 (Continued Mines and Extractive Industries).

6.0 CONTRIBUTION RATE

Rural Road Contributions for each development are calculated individually and will vary according to distance from Lismore and the width of existing road pavements for each segment of road.

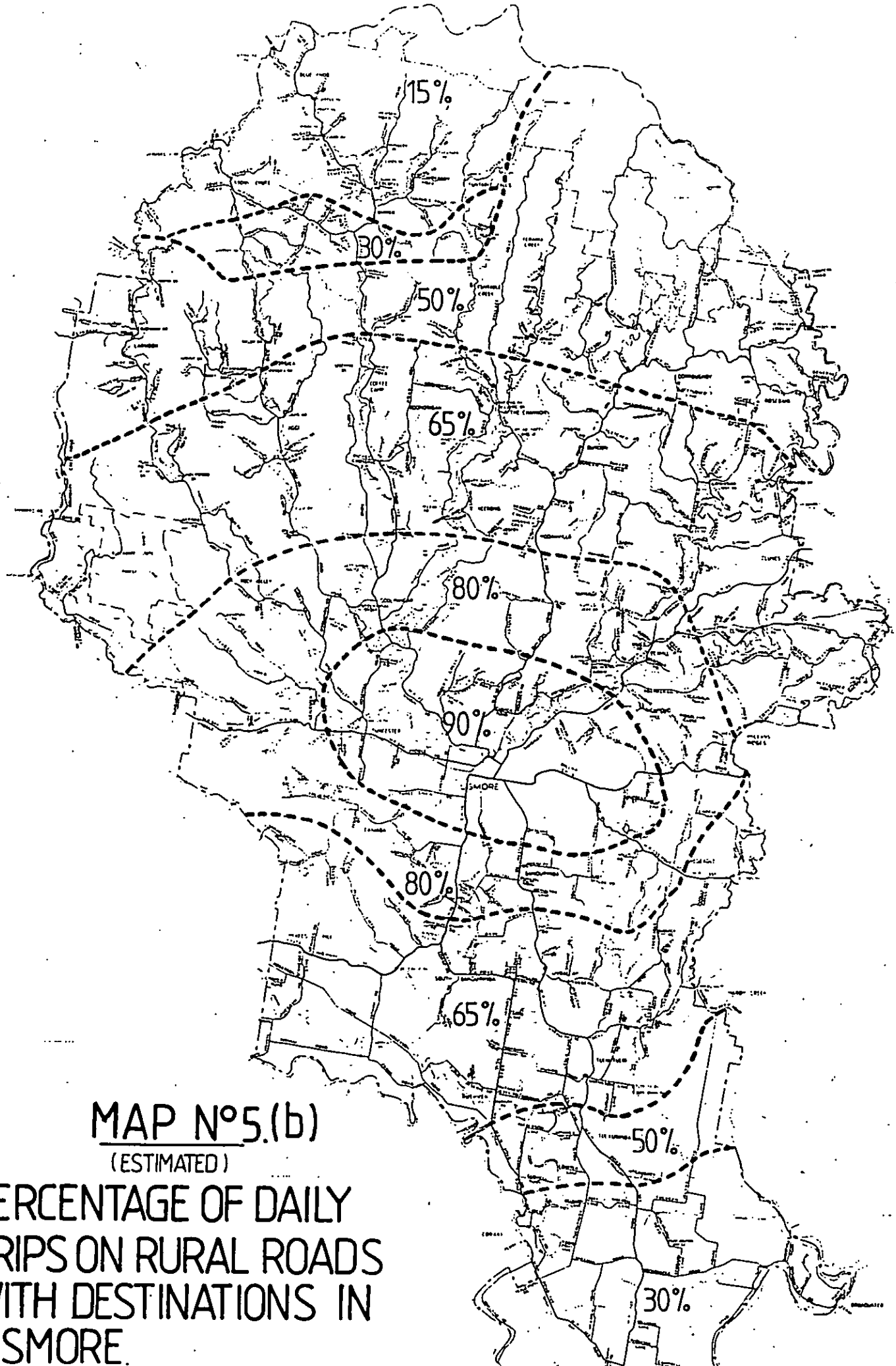
CALCULATING ROAD LENGTHS AND TRAFFIC COUNTS.



MAP N° 5(a)

* 80% OF TRIPS GENERATED TO/FROM LISMORE (DERIVED FROM LISMORE TRIP GENERATION "CONTOUR" MAP 5(b)

** 20% OF TRIPS TERMINATE SOMEWHERE IN THE LOCAL AREA, MOSTLY AT A FOCAL POINT OF THE LOCALITY.



MAP N°5.(b)

(ESTIMATED)

PERCENTAGE OF DAILY TRIPS ON RURAL ROADS WITH DESTINATIONS IN LISMORE.

Ex Ansan appeal dec 94

LISMORE CITY COUNCIL

S. 94 CONTRIBUTION MANAGEMENT PLAN

EXTRACT

PART E

RURAL ROADS

NOVEMBER 1994

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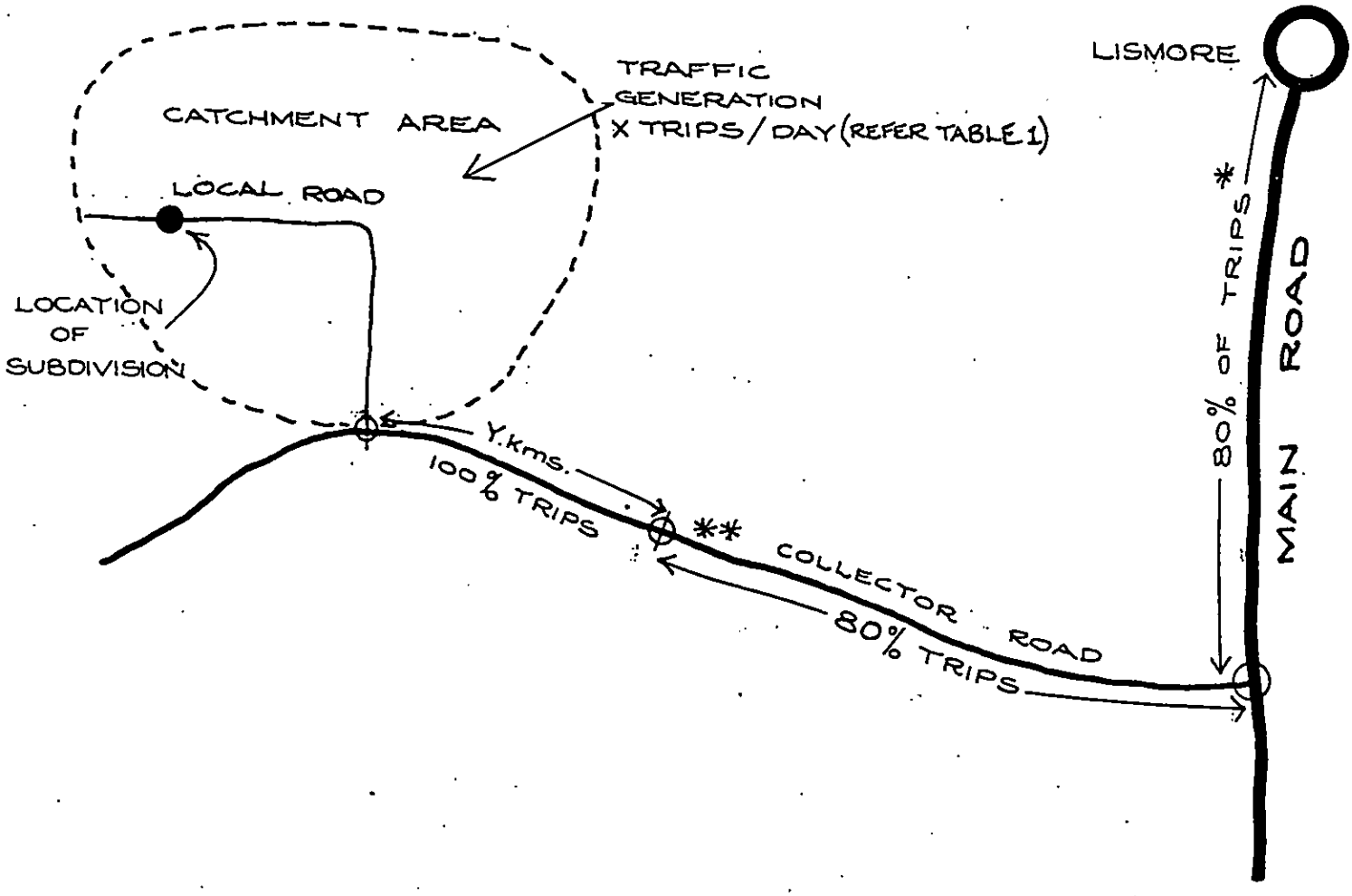

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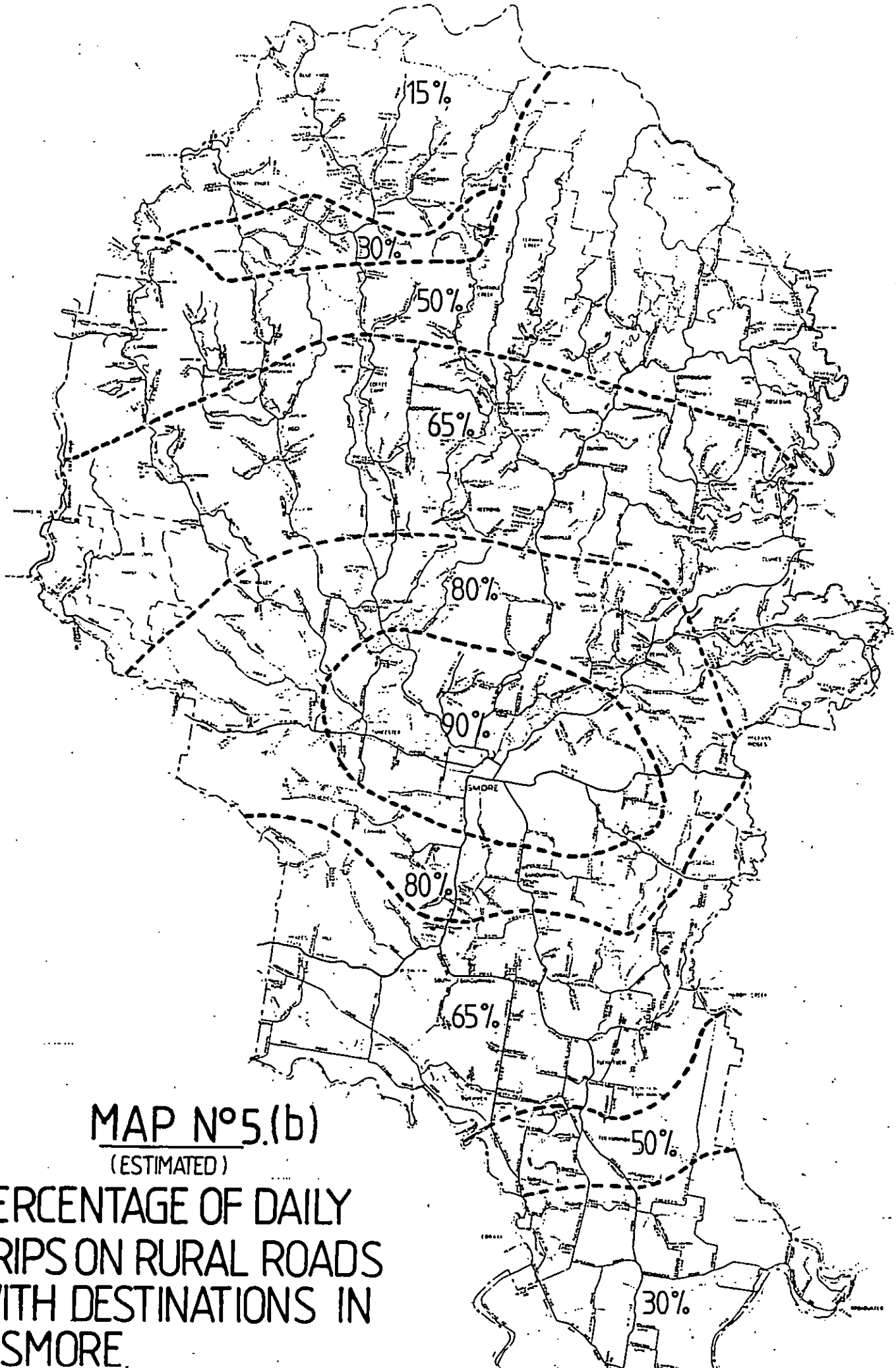

MAP N°5.(b)

(ESTIMATED)

PERCENTAGE OF DAILY TRIPS ON RURAL ROADS WITH DESTINATIONS IN LISMORE.

12-12-93

ACC Draft Rural Res Policy of Oct 1993 was prepared to DOP agreement in principle to amend LEP (by deleting cl 15A of LEP & subs. new RR clause + a DCP - Rural Res.

The DOP have agreed to the Oct doc as a basis for doing this. (NB changes poss. however in light of Community reports)

The separation of this into LEP and DCP components expected to be finished tomorrow & will go to Council in Jan for public exhibition

If major amendments to LEP or DCP would go back on pub. exhib, otherwise gets gazetted.

Copy sent Frecind C. The C. Jan 94