REPORT TO: **PLANNING AND TRANSPORTATION COMMITTEE**
25 SEPTEMBER 2000

REPORT ON: **DOUGLAS TRAFFIC CALMING – TRAFFIC STUDY**

REPORT BY: **DIRECTOR OF PLANNING AND TRANSPORTATION**

REPORT NO: **547-2000**

1 PURPOSE OF REPORT

1.1 The Purpose of the report is to advise Committee of the results of the traffic study carried out in Douglas to determine the effectiveness of the traffic calming measures.

2 RECOMMENDATIONS

2.1 It is recommended that Committee notes the findings of the traffic study and remits the Director of Planning and Transportation to monitor traffic volumes and speeds on Balbeggie Street and Balerno Street for one week per annum over the period 2001 to 2003.

3 FINANCIAL IMPLICATIONS

3.1 There are no direct financial implications as a result of this report.

4 LOCAL AGENDA 21 IMPLICATIONS

4.1 The traffic calming scheme promotes a safer environment for all road users and encourages walking and cycling, which are environmentally benign modes of transport.

5 EQUAL OPPORTUNITIES IMPLICATIONS

5.1 The traffic calming scheme promotes safety, especially for vulnerable groups such as the elderly and children, thus ensuring that the local road network meets the transport needs of all road users.

6 BACKGROUND

6.1 Douglas was identified as the first priority for area action traffic calming measures in report number 394/1996. It attained this priority based predominantly on the potential to save road injury accidents.

6.2 Following consultation a traffic calming scheme was designed that concentrated traffic calming measures at roads within Douglas with the poorest accident records. The scheme was then implemented during 1998 with construction beginning on 1 April 1998 and substantially completed by 31 August 1998.

6.3 A traffic study comparing road injury accident data, traffic volumes and speeds before and after implementation of the traffic calming scheme has been undertaken to assess its effectiveness.

6.4 <u>Road Accidents</u>

6.4.1 Dundee City Council's computerised accident database contains accurate road injury accident information for the whole of Dundee dating from 1 January 1989 to 31 August 1999. Therefore for the purposes of the Douglas Study a comparison of before and after scheme implementation can be made using the annual average road casualty figures between

1 January 1989 to 1 April 1998 for the before period and 1 September 1998 to 31 August 1999 for the after period.

6.4.2 The definitions used to describe road injury casualties within this report are consistent with Scottish Executive definitions and are as follows:

- Killed or Seriously Injured (KSI) – an injury that causes death less than 30 days after the accident or an injury requiring a person to be detained in hospital as an in-patient.
- Slight injury – any injury that neither causes death nor is serious.
- All injury – killed, seriously injured and slight injury, as defined above, in one category.

6.4.3 Table 1 below gives the annual casualty figures for Douglas – before and after the installation of traffic calming measures.

Table 1 – Annual Casualty Figures

	Entire Douglas Area		Balunie Avenue		Balunie Drive	
	Before	After	Before	After	Before	After
KSI	5.6	1	2.2	0	1.3	0
Slight Injury	10.9	8	3.9	1	1.2	0
All Injury	16.5	9	6.1	1	2.5	0

6.4.4 It can be seen from Table 1 that there has been a reduction in all injury casualties from an annual average of 16.5 to 9, representing 45% reduction. Furthermore, there has been a more significant reduction in the annual KSI casualties reducing from 5.6 to 1, representing an 82% reduction. It is encouraging to note that it is the more serious accidents that are being reduced most, since these carry the severest consequences, both in economic terms and in human grief. In the first year after installation the injury accident savings represent a monetary saving to society of £250,000.

6.4.5 It is also worthwhile noting that the one serious casualty that has occurred did not take place on a road, but rather a remote footpath between the boundary of Douglas Primary School and the Community Centre and involved a cyclist and pedestrian. Traffic calming measures will not prevent this type of accident.

6.4.6 It can also be seen that the traffic calming measures have been particularly successful on Balunie Avenue and Balunie Drive, with no KSI accidents occurring on either road in the after period and only one slight casualty on Balunie Avenue during the same period.

6.5 Traffic Volumes and Speed

6.5.1 Traffic volumes and speeds were recorded at various locations throughout Douglas before and after the introduction of traffic calming measures using automatic monitoring equipment.

6.5.2 After the introduction of traffic calming measures the total volume of traffic entering and leaving Douglas on an average weekday reduced by 9% from 24,550 to 22,360 vehicles per day. This indicates that the number of non-essential trips passing through Douglas have reduced.

6.5.3 There are two main local distributor roads travelling east/west in Douglas; Balunie Drive skirting along the northern boundary of the residential area and Balunie Avenue which provides a route through the heart of Douglas. After the introduction of traffic calming measures traffic volumes on Balunie Avenue have reduced by 47% from 5,680 to 3,000 vehicles per day on an average weekday, with the average speed of vehicles in the traffic calmed area reducing 5mph from 27mph to 22mph. Average weekday traffic volumes on Balunie Drive have increased slightly from 5,180 to 5,850, however, there has been a slight decrease in the average speed from 29mph to 28mph.

6.5.4 It can be seen that there has been a significant reduction in both traffic volume and speed on Balunie Avenue where the majority of the traffic calming measures are installed. This is encouraging as it means that both the chances of an accident occurring and the severity of the consequences are reduced. However, there was a danger that due to there being more traffic calming measures on Balunie Avenue than on Balunie Drive that through traffic would divert to Balunie Drive. This does appear to have happened, but only in a small scale and it is considered that the extra 670 vehicles per average weekday is negligible given that vehicles are on average travelling slightly slower.

6.5.5 In addition to the two main local distributor roads, traffic volumes and speeds have been recorded on a number or side roads running parallel to the main roads to assess relocation of traffic 'rat running' to avoid traffic calming measures. Unfortunately due to damaged equipment some parallel routes do not have full before and after information.

6.5.6 There are three minor road routes that run parallel to Balunie Avenue and Balunie Drive:

- Ballantrae Road/Balmerino Road/Balmoral Terrace
- Balerno Street
- Balbeggie Street

6.5.7 Ballantrae Road/Balmerino Road/Balmoral Terrace

Road humps were installed on this route to discourage its use by through traffic. No after study information is available for Balmoral Terrace but information available for Ballantrae Road and Balmerino Road indicates that there has been no significant increase in traffic volume on the route. In Ballantrae Road traffic has increased from 900 to 940 vehicles per average weekday and in Balmerino Road traffic has increased from 1,130 to 1,200 vehicles per average weekday. Unfortunately there is no before speed information, but average speeds in the after period are extremely low ie 14mph in Ballantrae Road and 17mph in Balmerino Road. These results indicate that appropriate traffic movements are occurring on Ballantrae Road, Balmerino Road and Balmoral Terrace.

6.5.8 Balerno Street

Road humps were installed on Balerno Street between Ballindean Road and Balbeggie Street to minimise through traffic on this route. On this length of Balerno Street traffic volumes have increased markedly from 1,475 to 2,790 vehicles per average weekday. However, the average speed of these vehicles has reduced from 24mph to 15mph and it is considered that these traffic movements are appropriate for this type of road. To the east of its junction with Balbeggie Street traffic on Balerno Street has increased by 80% from 670 to 1,200 vehicles per average weekday. No before speed information is available but the average speed in the after period is reasonably low at 25mph. Although there has been a significant percentage increase in traffic flow on Balerno Street the resultant level of flow remains fairly light and is similar to other comparable residential roads within Douglas and throughout Dundee. Indeed the average speed of vehicles is somewhat less than on many of these roads. It is considered that these traffic movements are not inappropriate for Balerno Street, however, this should be monitored to ensure traffic volumes and speeds do not continue to increase.

6.5.9 Balbeggie Street

Traffic volumes in Balbeggie Street after the introduction of the Douglas traffic calming measures have been recorded at 990 vehicles per average weekday, travelling at an average speed of 25mph. No direct before information is available, but using other recorded information it is estimated that before the Douglas traffic calming measures were introduced approximately 500 vehicles per average weekday travelled on Balbeggie Street. This represents an almost 100% increase in the after period. Given the high concentration of housing to the south of Balunie Avenue, it is expected that many of the residents of Balunie

Terrace, Balbeggie Terrace etc will now be using Balbeggie Street and Balerno Street as an alternative to Balunie Avenue and this will account for much of the increase. Notwithstanding this there will be some users simply avoiding Balunie Avenue. As with Balerno Street there has been a significant percentage increase in traffic flow on Balbeggie Street. However, the resultant level of flow remains fairly light and is similar to other comparable residential roads within Douglas and throughout Dundee. Again, the average speed of vehicles is somewhat less than on many of these roads. It is considered that these traffic movements are not inappropriate for Balbeggie Street, but this should be monitored to ensure traffic volumes and speeds do not continue to increase.

6.6 Summary of Findings

- 45% reduction in all injury casualties.
- 82% reduction in Killed or Seriously Injured (KSI) casualties.
- 9% reduction in total traffic volumes entering and leaving Douglas.
- 47% reduction in traffic volume and 5mph reduction in speed of vehicles on Balunie Avenue.
- 670 vehicles per day increase and a 1mph reduction in speed of vehicles on Balunie Drive.
- No change in traffic volumes and low average speeds of between 14mph and 17mph on Ballantrae Road/Balmerino Road/Balmoral Terrace.
- 80% increase in traffic volume (530 vehicles per day) and average speed of 25mph on Balerno Street.
- Approximately 100% increase in traffic volume (500 vehicles per day) and average speed of 25mph on Balbeggie Street.

6.7 Conclusions

6.7.1 The Douglas traffic calming scheme has been successful in achieving significant accident savings, both in terms of human grief and economically saving £250,000 in its first year after installation.

6.7.2 Overall the amount of traffic in Douglas has reduced, as has its speed. This is most noticeable on Balunie Avenue where most of the traffic calming measures are concentrated. On Balunie Drive there has been a slight increase in traffic volume, but this is offset by a slight speed reduction.

6.7.3 On the minor road routes that run parallel to Balunie Avenue and Balunie Drive, traffic has increased noticeably on both Balerno Street and Balbeggie Street. However, the traffic flows are similar and speeds are less than other comparable residential roads within Dundee. Both Balerno Street and Balbeggie Street should be monitored to ensure traffic volumes and speeds do not continue to increase.

7 CONSULTATIONS

7.1 The Chief Executive, Director of Finance, Director of Support Services, Director of Corporate Planning, Director of Personnel and Management Services, Director of Education, Director of Economic Development, Director of Environmental and Consumer Protection, Director Neighbourhood Resources and Development, Director of Public Relations, Legal Manager and the Chief Constable, have been consulted and are in agreement with the contents of this report.

8 BACKGROUND PAPERS

8.1 Report No 394/1996 – Traffic Calming Schemes.

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