Department for Transport

Traffic Advisory Leaflet 3/01
April 2001

Urban Street Activity in 20 mph Zones - Seedley, Salford

Introduction

In 1996 the Charging and Local Transport Division of the Department of the Environment, Transport and the Regions (DETR) commissioned an examination of six 20 mph zones. The Babtie Group (Allott & Lomax, Consulting Engineers) was asked to research the benefits and disbenefits of changes that might have occurred. This leaflet covers one of the zones. The investigation covered vehicle emissions, travel modes and street activities, within the zone itself and in the immediate area surrounding it. The project also examined the perceptions and attitudes of residents to any changes that had arisen.

Background

Seedley is part of the City of Salford, approximately 2 miles to the west of the centre of Manchester. The area covered by the 20 mph zone is generally level. It includes Kennedy Road, Tootal Road, Tootal Drive, Tootal Grove, Don Avenue and Meadowgate Road. The zone is bisected by Tootal Drive, which is a busy bus route. Access to Salford Reds Rugby League ground is through the zone.

The scheme

A number of injury accidents had occurred in the area, particularly along Tootal Drive. 50% of the casualties were child pedestrians. The purpose of the scheme was to provide a safer environment, particularly for children.

The measures used consisted of a mixture of gateway features, speed cushions (some with narrowings) round-top humps, 20 mph roundel markings (which needed authorisation) and realignment of junctions.

Table 1: Vehicle speeds - Tootal drive, average two-way speeds

	Mean speed (mph)		85 th percentile speed (mph)	
	At cushion	Between cushions	At cushion	Between cushions
Before	28.4	28.4	34.8	34.8
After 3 months	21.9	23.3	27.5	28.9
After 12 months	23.2	22.8	28.8	28.5

Results

Traffic flows

Manual counts were taken for the whole zone. The 12-month after survey showed that total traffic flows had reduced by 10% to 4,818 vehicles and 12% to 4,815 vehicles, for inbound and outbound traffic, respectively. However, interim figures, based on a 3 month after survey, showed a slight increase in total flows. Along Tootal Drive, the main through route, traffic flows reduced both in the 3-month and 12-month after periods.

Speeds

Vehicle speeds along Tootal Drive are given in Table 1 and show significant reductions. Neither the mean nor the 85th percentile speeds were at or below 20 mph.

Accidents

Insufficient time has elapsed since implementation for accidents to be fully analysed. This topic will be the subject of a separate report in the future.

Noise

For a number of reasons, only vehicle noise surveys were undertaken in the 'before' period. Values of road traffic noise were, therefore, estimated. The aim was to ascertain the general level of noise generated by traffic in the vicinity, and the maximum level of noise generated by individual vehicles, respectively. A summary of the results, for both traffic and vehicle noise, is shown in Table 2.

Estimated and observed road traffic noise figures are not directly comparable. The estimated 'after' road traffic noise and the observed vehicle noise figures would appear to support other research, that traffic calming does result in a reduction in overall traffic and vehicle noise. Although there were some differences between the 3 month 'after' and the 12 month 'after' recorded levels, the majority of residents felt that noise levels had "stayed the same".

Table 2: traffic and vehicle noise summary

	Traffic noise dB(a)						Vehicle noise lamax dB(a)					
	Before (estimated)		3 mths after (estimated)		12 mths after (estimated)		Before		3 mths after		12 mths after	
	L10-6hr	L10-18hr	L10-6hr	L10-18hr	L10-6hr	L10-18hr	Noise	Speed (km/h)	Noise	Speed (km/h)	Noise	Speed (km/h)
Tootal Drive	(53.8)	(69.3)					74.6	41.7				
Between speed cushions		(52.7)	54.1 (68.3)	69.18 (51.7)	52.4 (66.4)	69.4			68.9	30.0	70.7	28.0
At speed cushions		(52.6)	52.2 (68.2)	68.8 (51.5)	51.2 (66.2)	70.3			66.8	26.5	66.7	26.1
Kennedy Road	(42.7)	(58.1)					74.3	50.3				
Between speed cushions		(41.4)	51.8 (57.0)	59.1 (38.5)	46.9 (54.0)	57.4			70.9	38.8	70.0	32.6
At speed cushions		(41.3)	45.1 (56.9)	57.7 (38.3)	49.4 (53.8)	59.7			69.3	31.7	68.6	31.2

Air Quality

Nitrogen dioxide and benzene were monitored using passive diffusion tubes. These were installed at four sites (one outside the zone) for a month each for the 'before' measurements, '3 months after' and '12 months after'. For nitrogen dioxide, four different tubes were used at each site. Tables 3 and 4 show the results. Although significant differences in concentrations were observed, changes were possibly affected more by changes in meteorology than changes in traffic flow and speed. Unfortunately, at the sites in Kennedy Road and Peverill Road, the Benzene diffusion tubes for the 'before' period were stolen, so measurements are not available.

The questionnaire responses revealed that the majority of residents in the after period thought that traffic pollution 'after' installation had "stayed the same".

Table 3: Average nitrogen dioxide measurements (ppb)

	Tootal drive	Tootal road	Kennedy road	Peverill road (control)
Before (July 1997)	27	27	20	18
After (Oct 1998)	33	34	33	31
After (Oct 1999)	23	16	34	17

Table 4: Benzene measurements (ppb)

	Tootal drive	Tootal road	Kennedy road	Peverill road (control outside zone)
Before (July 1997)	0.6	0.4	-	-
After (Feb 1998)	0.9	0.9	0.8	0.7
After (July 1999)	0.9	0.8	0.6	0.4

Pedestrians

Twelve hour directional counts were carried out at five locations for both the 'before' and 'after' periods on the major pedestrian routes in the area. There was a small increase in the number of accompanied children. However, overall pedestrian flows were not large, and at their busiest were only around 100 pedestrians per hour on average. Near the school at opening and closing time this increased to 200 pedestrians per hour. Elsewhere, flows were much less, at some locations on the main pedestrian route being as low as 30 pedestrians per hour.

The household interviews revealed rather negative results, with the 'after 3 month' survey indicating an increase in the proportion of respondents who never walk to work, and a decrease in the proportion of respondents who walk to work daily. However, this may have been influenced by the fact that the particular survey was undertaken in January. The 'after 12 month' survey showed no real difference compared to the 'before' situation. A small percentage of respondents indicated that they were likely to walk more .

Cyclists

The zone appears to have had little effect on cycling, with very low cycling use being recorded both in the 'before' and 'after' periods. From the questionnaires, it was found that only 15% of residents owned or had access to a cycle.

Household questionnaire

Surveys were carried out before implementation, 3 months after and 12 months after.

Prior to implementation of the scheme, 68% of respondents considered that vehicles travelled too fast. Following installation, some 59% of respondents felt that speed had stayed the same, 29% that it had decreased, and 11% that it had increased. The majority of respondents on Tootal Drive, where speed cushions were installed, felt that speeds had not decreased.

Car ownership in the zone was relatively low, and only around 50% of people had access to a car, compared to an average of 72% in the North West generally. There was a slight increase in the after surveys of respondents who used a car once a week for work, and an increase in the proportion of respondents who used a car once a week to travel to school/college.

Some 75% of respondents liked the measures. Respondents with children were asked whether the 20mph zone had made them more likely to allow their children to play in the street; almost 25% said they would. However, whether they do or not is difficult to quantify.

Summary

Implementation appears to have had only a limited effect on the local environment. The 20 mph zone had a positive effect in reducing speeds, but the fact that speeds remained above 20 mph probably explains why a number of residents did not feel that speeds had been reduced. Many residents perceived no improvement in pedestrian or cyclist safety, hence patterns for walking and cycling trips appeared to be unaffected. Some parents indicated they were more likely to allow children to play in the street, but the lack of any notable increase in street activity would not appear to suggest this had been translated into any positive action. The experience tends to support the view that if changes in activity are to be achieved, then it is important that in 20 mph zones at least mean speeds and preferably 85th percentile speeds need to be reduced to 20 mph or below. Despite the limited impact, 75% of residents stated that they liked the measures introduced.

Acknowledgement

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References

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TA Leaflet 12/00, Urban Street Activity in 20 mph zones, Ayres Road Area, Old Trafford

TA Leaflet 1/98, Speed Cushion Schemes