

15th FEBRUARY 2007

SALISBURY CITY CENTRE 20 MPH ZONE AFTERSTUDY

Purpose of Report

1. To report on ongoing monitoring of the Salisbury City Centre 20 mph zone and develop an understanding of its current performance in terms of effects on vehicle speed and casualties.

Background

2. On the recommendation of the Salisbury Joint Committee, a Traffic Order was made on 19th November 1999 to introduce a 20 mph speed limit zone for the area approximately within the ring road.
3. Various features to control vehicle speeds within the zone were introduced, but the overall philosophy was to keep the number of features to the minimum required to ensure compliance with the 20 mph limit within the zone.

Key Performance Indicators

4. Two key performance indicators have been used to assess the performance of the zone and are outlined below:

Casualties

5. This report uses accident data collected by the Police for monitoring purposes. However, the casualty data is limited to those incidents where the Police were called to the site of the accident and where a personal injury was sustained to one or more of the persons involved. The accidents are sub-divided into three categories on the basis of injury sustained ie fatal, serious and slight. It is noted that unreported accidents may have occurred in the City Centre. However, this data is unavailable and is therefore outside the scope of this report.

Speed Surveys

6. This report uses three speed surveys undertaken by consultants Mouchel Parkman. First, in 1999 prior to the introduction of the 20 mph zone, secondly in 2000 approximately eight months post introduction and thirdly in August 2006. The data was collected on a road-by-road basis, with 100 vehicle speeds recorded in each direction using a hand-held speed gun. From the data attained it is possible to establish mean speed, 85th percentile dry weather speed and 85th percentile wet weather speed for a number of roads within the zone, together with the zone as a whole (an 85th percentile is the speed at which 85 per cent of vehicles are travelling under). In order to achieve effective comparison of the data the locations for each speed survey are identical.

Overall Picture - Casualties

Casualty Data

7. The zone was implemented in November 1999. The before period has been selected as the 36 months up to 30th September 1999 to eliminate any zone implementation effects. The after period has been selected as the 36 months starting 1st September 2003 and finishing 31st August 2006.

ALL CASUALTIES			
Before Period - 36 Months		After Period - 36 Months	
Fatal	0	Fatal	0
Serious	13	Serious	7
Slight	129	Slight	59
Total for 36 months	142	Total for 36 months	66
Casualties per month	3.9	Casualties per month	1.8

- The after period casualty rate is **46%** of the before period casualty rate
- The current overall casualty saving is running at a rate of **25 per year**
- The killed and seriously injured (KSI) casualty rate was **9%** during the before period and **11%** during the after period, although due to the small numbers involved are sensibly the same

PEDESTRIANS			
Before Period - 36 Months		After Period (2) - 36 Months	
Fatal	0	Fatal	0
Serious	10	Serious	3
Slight	50	Slight	26
Total for 36 months	60	Total for 36 months	29
Casualties per month	1.7	Casualties per month	0.8

- The after period casualty rate is **47%** of the before period casualty rate
- The current pedestrian casualty saving is running at a rate of **10 per year**
- The KSI casualty rate was **17%** during the before period and **10%** during the after period

CYCLISTS			
Before Period - 36 Months		After Period (2) - 36 Months	
Fatal	0	Fatal	0
Serious	0	Serious	1
Slight	18	Slight	13
Total for 36 months	18	Total for 36 months	14
Casualties per month	0.5	Casualties per month	0.4

- The after period casualty rate is **80%** of the before period casualty rate
- The current cyclist casualty saving is running at **1 per year**

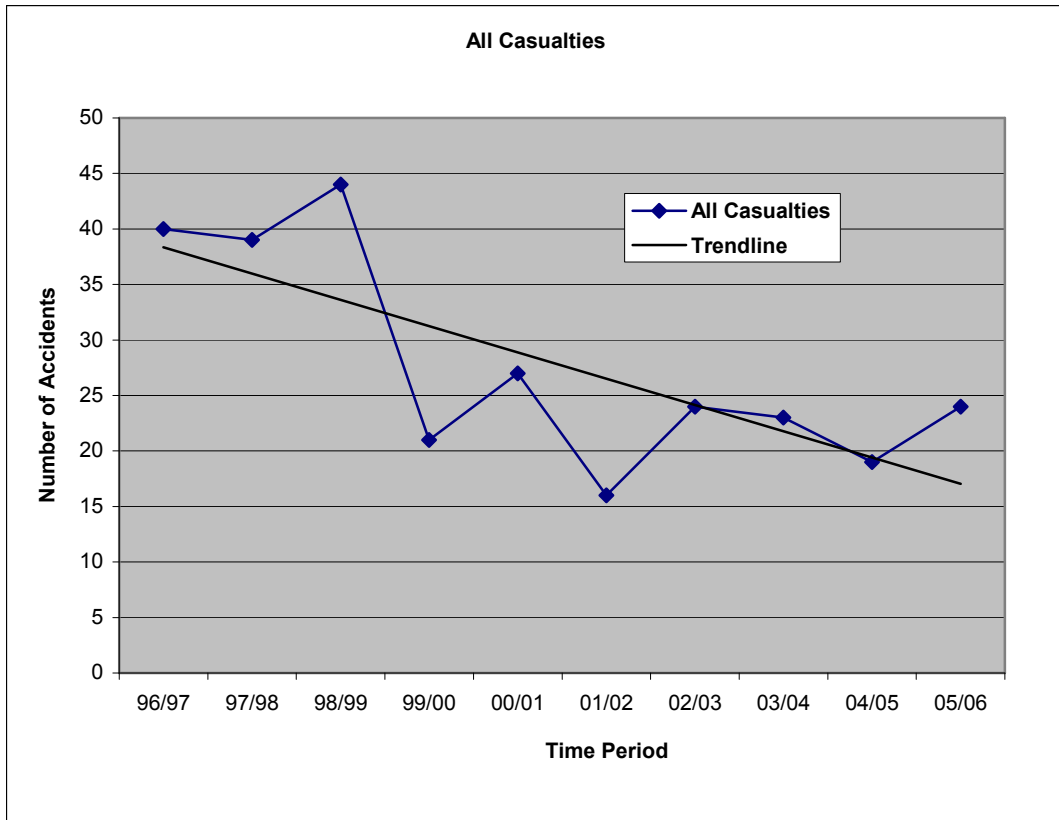
VEHICLES			
Before Period - 36 Months		After Period (2) - 36 Months	
Fatal	0	Fatal	0
Serious	3	Serious	3
Slight	61	Slight	20
Total for 36 months	64	Total for 36 months	23
Casualties per month	1.8	Casualties per month	0.6

- The after period casualty rate is **33%** of the before period casualty rate
- The current vehicle occupant casualty saving is running at **14 per year**
- The KSI casualty rate was **5%** during the before period and **13%** during the after period

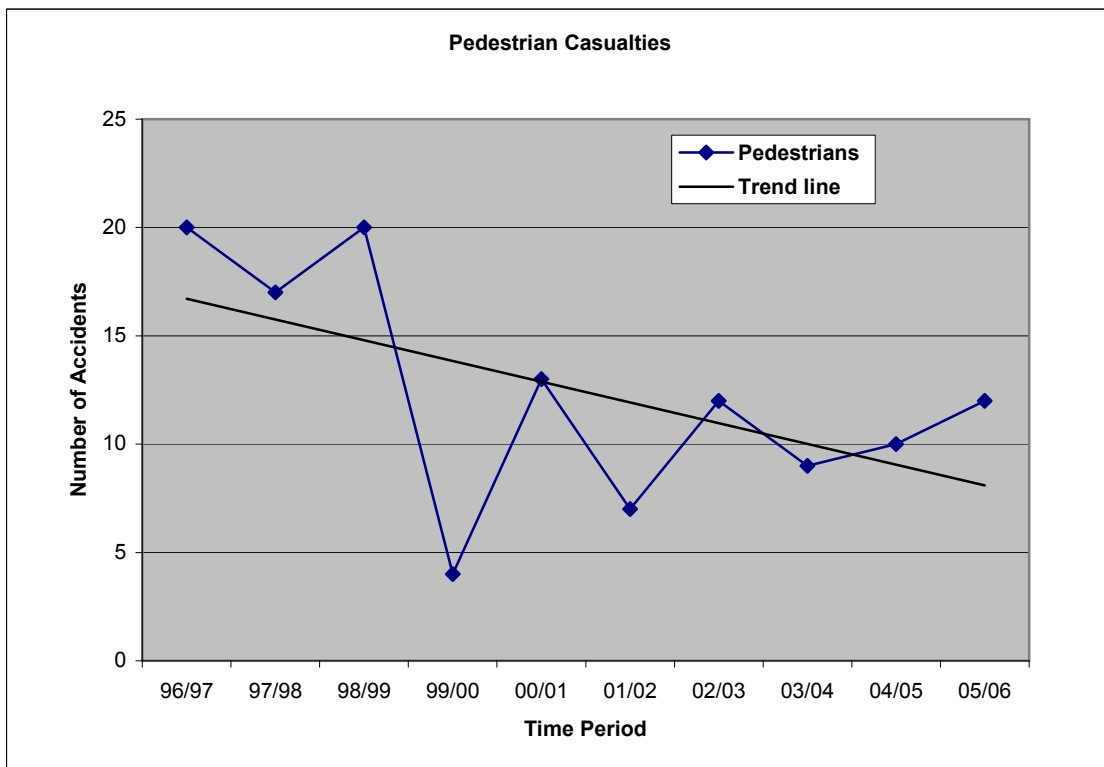
Variation with Time

All Casualties

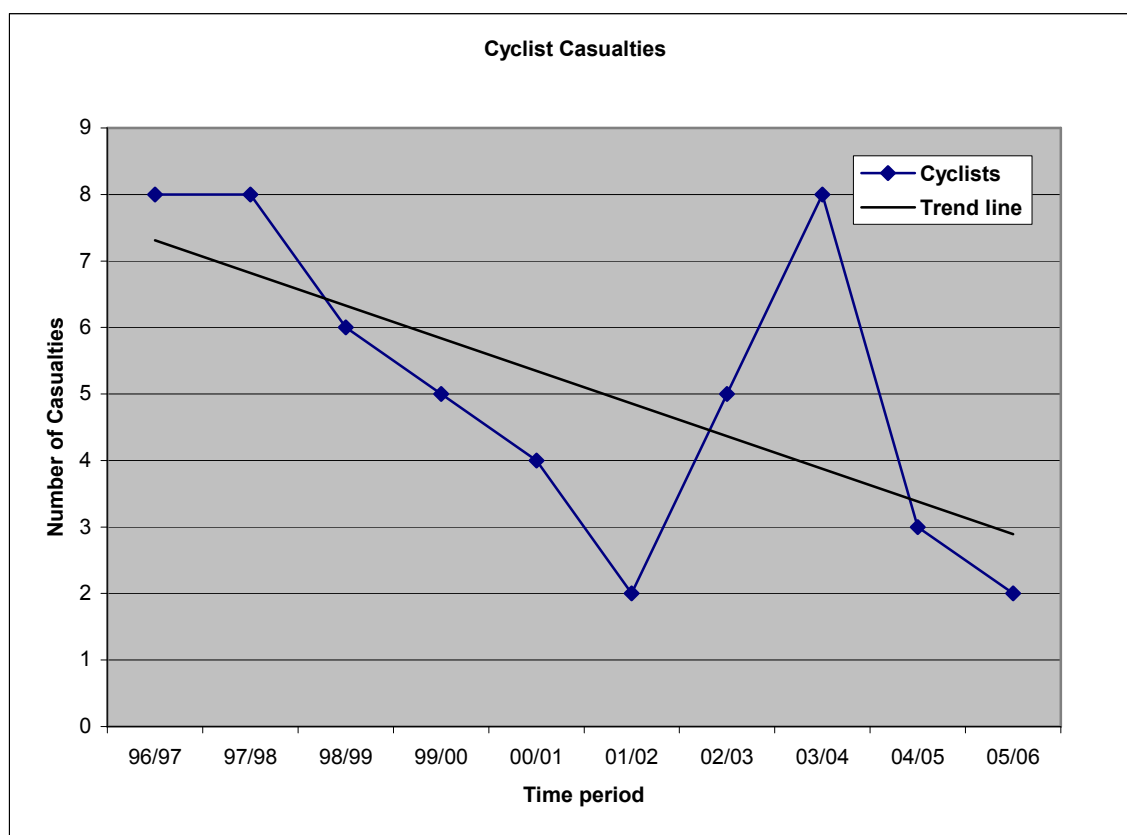
- The following graph shows all casualties within the 20mph zone on a year-by-year basis. The casualty year for the purpose of this report runs from 1st October to 30th September.



9. In the 3 years prior to zone implementation in November 1999, casualties averaged **41 per annum**. In the years following zone implementation, casualties averaged **22 per annum**.



10. In the 3 years prior to zone implementation in November 1999, pedestrian casualties averaged **19 per annum**. In the years following zone implementation, casualties averaged **10 per annum**.



11. In the three years prior to zone implementation in November 1999, cyclist casualties averaged **7 per annum**. In the years following zone implementation, casualties averaged **4 per annum**.

Analysis of Data

12. The zone and associated traffic management features has resulted in an almost 50% reduction in accidents since the zone became operational in 1999, with the zone preventing on average 22 'slight' accidents per year. Referring to Highways Economic Note No. 1 (DfT, 2005) that details the average value of prevention per casualty in terms of accident severity, it suggests that the resultant monetary saving to society over the seven-year period is £1.65 million or £235,000 per annum.
13. Looking at year-on-year casualty data, the trend since zone implementation has suggested that accident rates have levelled off to an average of 19 per annum. This suggests that the zone is performing at its peak in terms of casualty savings given the current traffic management features in place. In order to achieve further reductions, it is necessary to identify those areas within the zone that are problematic and where remedial measures can be applied to accident cluster sites.

14. **Appendix A** outlines the location of accidents in the three years prior to zone implementation. **Appendix B** shows the location of accidents in the three years up to 31st August 2006. The greatest casualty reductions can be seen at locations where pedestrian enhancement and traffic calming work has been carried out in the zone, although savings can be seen generally across the zone. It is interesting to note that in the last three years, the more problematic areas are where recorded vehicle speed is generally in excess of the 20 mph limit, and the least problematic areas are where compliance with the speed limit through traffic management measures has been achieved. The signalisation of New Street/Catherine Street is an excellent example of how traffic demand and vehicle speed can be managed to alleviate accidents.
15. Looking at the casualty data over the last 36 months, it is disappointing to note that Winchester Street and The Chequers in general have seen no reduction, and in some cases a rise in accident rates. Fisherton Street, Castle Street and Brown Street are further areas that require investigation, particularly given recorded and perceived vehicle speeds. It is argued that the car has caused a certain amount of severance at these locations with less provision for pedestrians and other users. The type, cause, time and severity of the accidents at these locations are investigated in **Appendix C** of this report, together with possible remedial measures.

Overall Picture - Vehicle Speed

16. **Appendix D** outlines the results of three speed surveys undertaken on a number of roads within the zone. From the data attained in those surveys it is possible to determine mean and 85th percentile speeds for the zone as a whole, as illustrated in the following **Table** (the before period has been left blank due to the limited quantities of data).

	Before Period	After (1) Period	After (2) Period
Mean Speed	N/A	23.22	21.71
85th percentile Speed	N/A	27.19	24.24

17. A mean speed reduction of 1.5 mph and an 85th percentile reduction of 3 mph have been achieved since the previous survey in 2000.
18. Government guidance suggests that a 20 mph zone should be largely self-enforcing, with the traffic calming features within the zone regulating vehicle speed without requirement for Police enforcement. Mean speed should ideally be less than 20 mph, with 85th percentile speeds less than 24 mph. Throughout the central shopping area where the majority of enhancement work has been implemented the County Council is close to achieving these figures. However on the main distribution roads into the centre, and where less enhancement work has been carried out, vehicle speed still tends to be above the allowable thresholds. Careful targeting of resources is necessary towards those distribution roads where a reduction in vehicle speed can be achieved in unison with pedestrian safety measures to achieve an overall drop in casualties.

Further Investigation

19. The analysis in **Appendix D** highlights some of the areas where additional investigation is required in order to achieve casualty reductions in future years. Accident statistics and details of enhancement and remedial measures will be designed and costed in full in the 2006-07 financial year. These proposals will be presented to Members in due course.

Recommendation

20. That the contents of this report be noted.

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The following unpublished documents have been relied on in the preparation of this Report:

Highways Economic Note Number 1, Department for Transport (2005)