



# **A22 Caterham By-pass Speed Management**

**23 March 2007**

## **KEY ISSUE**

To give an update on speed management options along A22 Caterham By-pass (southbound).

## **SUMMARY**

This report to the Local Committee outlines issues and options regarding the speed management along the A22 Caterham By-pass. Vehicle Activated Signs (VAS) and several types of speed enforcement camera systems are considered.

VAS is recommended as a measure that will be installed in the near future. An Average Speed Camera System is recommended as a future objective.

## **RECOMMENDATIONS**

The Committee is asked to:

- (i) agree to the installation of Vehicle Activated Signs on A22 Caterham By-pass.
- (ii) support the Average Speed Camera System proposal in principle.

## 1 **INTRODUCTION AND BACKGROUND**

- 1.1 The Section of the A22 Caterham By-pass (southbound) between Wapses Lodge Roundabout and Tillingdown Hill Bridge has had 28 road traffic incidents resulting in personal injury in the period between Jan 2003 – Aug 2006. This section is a critical area where accident remedial measures are necessary. The section of the A22 Caterham By-pass southbound carriageway between Tillingdown Bridge and Godstone Road has had 5 road traffic incidents resulting in personal injury in the same period.
- 1.2 Safety measures for the northbound carriageway of this section of A22 have already been implemented. The Carriageway was reduced down to one lane along the entire length of A22 Caterham By-Pass in October 2002. Resurfacing of the northbound carriageway was also completed in March 2003. The speed limit was reduced to 50mph and a safety barrier has been installed in the central reserve. The following table shows that the number of injury accidents in the three and a half year period after improvements is considerably less than the number for the same length of time before the improvements.

Table 1 **Road traffic incidents resulting in personal injury**  
(Between Godstone Road and Wapses Lodge Roundabout in northbound direction)

	<b>1999 – Jul 2002</b>	<b>2003 – Aug 2006</b>
<b>TOTAL</b>	47	14

- 1.3 At the Local Committee on 29 September 2006 a report was requested on speed management options along A22 Caterham By-pass. Since northbound measures have been implemented, this report concentrates on southbound improvements. The southbound carriageway of the A22 Caterham By-pass is a two-lane road, which caters for a high capacity of traffic off Wapses Lodge Roundabout. The options considered for improvement in this report are:

- Lane Reduction
- Vehicle Activated Signs
- Mobile Speed Camera Enforcement
- Fixed Speed Camera
- Average Speed Camera

## 2 **ANALYSIS AND COMMENTARY**

### 2.1 **Lane Reduction**

- 2.1.1 Lane reduction from two lanes to one is not recommended due to the high volume of traffic travelling southbound from Wapses Lodge Roundabout and the up-hill nature of the road. The capacity of the exit point from Wapses Lodge roundabout would be adversely affected

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with only one lane. This could result in conflict between vehicles exiting the roundabout and resultant safety issues. It is likely that a reduction to one lane would increase traffic congestion. Slow vehicles climbing up the hill could cause queuing and without any opportunities to overtake, driver frustration may result. Therefore, lane reduction is not recommended.

### 2.2 VAS - Vehicle Activated Signs

2.2.1 It is proposed to install two Vehicle Activated Signs to advise drivers of the 50mph speed limit. The signs will detect when a vehicle is travelling over the speed limit and flash a 50mph speed limit sign with SLOW DOWN with flashing yellow lights. The signs are to be located in the central reserve 350 metres and 800 metres south of Wapses Lodge Roundabout, respectively.

2.2.2 Both VAS will be solar powered, as there is no electrical source in the area. VAS can be placed only in the central reserve because of thick tree cover and lack of the sunlight required for solar power signs along the left verge.

2.2.3 The central reserve area is quite restrictive in width, at approximately 1.4m wide. This enables only the smallest VAS (450mm diameter roundel) to be installed, as it needs 450mm clearance from the edge of the kerb. A 1200mm diameter roundel sign is the standard normally expected on a 50mph road. This size cannot be accommodated along A22 Caterham By-pass. The risk of installing a 450mm diameter roundel sign is that it might be too small for drivers to notice as quickly. However it would still be a useful tool in speed reduction, since it should increase drivers' observation of the speed limit and should not compromise existing safety.

### 2.3 Mobile Camera Speed Enforcement

2.3.1 Three possible locations have been identified in consultation with Surrey Safety Camera Partnership. The Police van used for mobile enforcement requires a safe location with uninterrupted sight of a straight section of a road to function properly. The location needs to be protected by barriers in the direction of oncoming traffic.

#### *Tillingdown Hill Bridge (Bridleway)*

2.3.2 Tillingdown Hill Bridge was identified as a good location for mobile speed enforcement. However structural restrictions such as the large edge restraint concrete blocks preclude access to the mobile speed camera van to access the bridge. The path between the bridge and A22 is private property, preventing access for the Police van. This option is therefore not possible.

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### *Unused bus lay-by just south of Tillingdown Lane junction with A22 (southbound)*

- 2.3.3 The unused bus lay-by is a possible location for mobile speed enforcement. It would need to be widened and safety fence installed to protect the Speed Camera van. This option is possible but not desirable because it will not be able to target the critical area identified (section of A22 between Wapses Lodge Roundabout and Tillingdown Bridge).

### *Currently being used lorry lay-by just north of Tillingdown Lane junction with A22 (southbound)*

- 2.3.4 Lay-by just north of Tillingdown Lane is a much longer lay-by, however lorries are currently using it. Since parked vehicles would obstruct view to oncoming vehicles, this location is not recommended. Constant movement of large vehicles around the Police van could also be a safety issue.

## 2.4 Fixed Speed Camera Enforcement

- 2.4.1 A Fixed Speed camera could be placed on a gantry across the width of the southbound carriageway of the A22. A lay-by is needed for safe maintenance access to the gantry. Such a lay-by cannot be installed within the critical area as there is limited space and no electricity supply. Vandalism could also be a risk.
- 2.4.2 The unused bus lay-by just south of Tillingdown Lane junction with A22 (southbound) is also a possible site for a fixed camera. Widening of the lay-by (for maintenance and safety purposes) and safety fence would also be required for the installation. However this location is not on the 'critical section' north of the site.

## 2.5 Average Speed Camera Enforcement

- 2.5.1 Average Speed Camera Systems utilise Automatic Number Plate Reading (ANPR) digital technology. It consists of a minimum of two cameras each fitted with infrared illuminators fitted on gantries above the road, so they can work day or night. Average Speed Cameras calculate the vehicles' average speed, given the time it takes to drive between the two camera positions.
- 2.5.2 SCS (Speed Check Services) are currently the sole provider of digital average speed technology to Police and highways authorities in the UK. SCS has prepared a budgetary proposal for two options for an Average Speed Camera System installation along the A22 Caterham Bypass. The length would be 2,500metres speed control zone south of Wapses Lodge Roundabout to Godstone Road.

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### 2.5.3 Two options are :

- *SPECS1* is the current, HOTA (Home Office Type Approval) approved system, requiring hard-wired fibre optic cable between cameras and the enforcement cabinet.

*SPECS1 Solution cost* - £185,000 hardware  
- £80,000 to £250,000 ducting costs  
- £30,000 to 55,000 Annual Maintenance

- *SPECS3* uses public communications networks (e.g. ISDN) to communicate to a remote in station at the SCP offices. *SPECS3* is currently not Home Office Type Approved, but this is expected by summer 2007.

*SPECS3 Solution cost* - £200,000 for hardware and installation  
(no ducting required)  
- 15,00 Annual Maintenance

2.5.4 The quoted costs do not take account of income from fines.

2.5.5 The first proposed trial of an average speed camera system in Surrey is currently being developed by the Surrey Safety Camera Partnership. Surrey Safety Camera Partnership supports the idea of a similar system for the A22 Caterham By-pass.

2.5.6 The Average Speed Camera system is fairly new technology, however it has been proved to be effective in reducing speeds. Department for Transport has been involved in an independent four-year evaluation report of the National Safety Camera Programme. This covered the effectiveness of average speed cameras that were operating between April 2000 and March 2004. The independent academics concluded that average speed cameras were equally as effective in reducing collisions and casualties as other fixed and red light cameras. They also concluded that average speed cameras have been particularly effective at reducing excessive speeds.

## 2.6 Real Time Traffic Monitoring

2.6.1 This is not a speed management measure, however it will help with monitoring of the A22 Caterham By-pass and network management. It has been arranged to replace the existing automatic traffic counter on A22 Caterham By-pass with a real-time counter. The counter will be placed between Wapses Lodge roundabout and Tillingdown Bridge. This counter will be able to provide vehicle count, classification and speed information in real-time, allowing us to keep a track on speed along the A22 Caterham By-pass. The information will be fed into the Surrey Intelligent Transport System Centre every 5 minutes where average speed information is displayed and recorded.

3 **FINANCIAL IMPLICATIONS**

- 3.1 Funding for the VAS has been agreed through the Local Public Service Agreement for Speed Management (reducing injuries) in Tandridge.
- 3.2 An Average Speed Camera System could be added to the list of schemes for possible funding from the Local Transport Plan budget for Tandridge.

4 **CONCLUSION**

- 4.1 Speed related issues along A22 Caterham By-pass are of serious concern. This is verified by the high number of vehicle accidents on the southbound carriageway. Effective speed management along this section of the A22 would contribute to casualty reduction targets and Local Transport Plan objectives. Vehicle Activated Signs would be funded through the Local Public Service Agreement for Speed Management (reducing injuries) in Tandridge. It is recommended that an Average Speed Camera System proposal is agreed in principle with a prospect of being funded in the future

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