

A488 Hanwood

**Speed Reduction /
Pedestrian Safety measures**

Feasibility Report

Report Reference: 1071414




Prepared by:

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1 Introduction

- 1.1 This report was commissioned by Shropshire Council following concerns expressed by Hanwood Parish Council and the local member regarding the speed of traffic on the A488 through the village.
- 1.2 The concerns refer to inappropriate vehicle speeds combined with safety concerns for pedestrians, as there is sub-standard footway provision along some sections of the route.
- 1.3 This report includes analysis of the most current collision data, traffic and speed data and pedestrian observations.
- 1.4 The report aims to identify options with outline costs to address the identified concerns and encourage speed limit compliance within the village.

2 Site Description

- 2.1 Hanwood is a large village located on the A488 approximately 1 mile south west of the A5 Shrewsbury by-pass. The village is effectively split into four parts: The eastern end including the Caradoc View estate, 'Hanwood Bank', 'Great Hanwood' and the western end including the School site.
- 2.2 The eastern end has some property frontage on the south side of the A488. There are a number of private accesses and the junction with Caradoc View plus bus stops on each side of the carriageway on this length of the route.
- 2.3 Hanwood Bank links the eastern end with Great Hanwood. This is a half mile section of carriageway which is not-built-up with only a scattering of roadside properties on the south side. This length of the A488 is covered by a system of double-white line markings (see photo 1 below).



Photo 1 – view south along non-built up link between eastern end and Great Hanwood.

- 2.4 Great Hanwood is the main part of the village situated to the south-west of Hanwood Bank. It includes all the village facilities which include: a small combined post office and shop, a car sales garage, a pub (*The Cock Inn*) and residential properties.



Photo 2 – A488 Hanwood looking west in vicinity of The Cock Inn P.H.

- 2.5 St. Thomas' & St. Anne's C.E primary school is located at the south-western end of Hanwood. Lay-by's are provided for school related parking on both sides of the carriageway adjacent to the school entrance. School warning signs with flashing wig-wags are located on each approach of the A488 to this area. The whole village including the non-built-up section is street lit and covered by a 30mph speed limit.
- 2.6 Carriageway widths fluctuate within the village between 5.9 metres and 7.5 metres. An inventory of road and footway widths taken at several sample locations is provided on the existing layout drawing 1071414-P-100.
- 2.7 Pedestrian facilities include footways on both sides of the carriageway through the majority of the village length. However, there are three sections where a footway is provided on one side only these being the northern most section between Hanwood Bank and Post Office Lane, a length near the Rea Brook bridge and the southernmost section near the School.
- 2.8 There is one signal controlled pedestrian crossing within the village (installed in 2013). This is a Puffin Crossing which lies adjacent to the Rea Brook bridge and serves a walking route between the south side of the A488 and the School on the north side. A footpath links the A488 with the rear of the school from this point.



Photo 3 – A488 Hanwood narrow footway alongside carriageway and alternative footpath access to rear of School / Village Hall (right of photo).

- 2.9 Road markings consist of double-white line systems through Hanwood Bank (mentioned earlier) and at the southern extremity of the village. Centre warning lines are present throughout the remainder of the village. It is unusual to provide double-white lines within an urban area, indeed Chapter 5 of the Traffic Signs Regulations and General Directions (TSRGD) 2016 states “double lines should not normally be used in built-up areas, as preventing vehicles from stopping could be unduly restrictive”. However it is understood that the markings have been provided following local pressure despite the non-standard nature of them to prevent overtaking movements and therefore higher speeds through the undeveloped section of Hanwood.

- 2.10 There is a pair of 30mph carriageway roundels within the village which are understood to have been inadvertently put in following the last surface dressing. Although they may be seen as a useful reminder of the speed limit to motorists, under the TSRGD 2016 these roundels are not permitted within a street lit 30mph area such as this. In view of the non-standard nature of the road markings, enforcement of speeding and overtaking violations may be problematic if challenged by motorists.
- 2.11 There are quite a large number of permanent traffic signs within the village (17no in total). These include warning signs for bends and junctions. (See existing layout drawing no 1071414-P-100). Chapter 4 of the TSRGD suggests discretion with the use of warning signs particularly in urban areas, therefore the number of signs provided could be considered as excessive
- 2.12 Vehicle Activated Signs (VAS) are also present in the village which include a permanent 600mm roundel (30mph / SLOW DOWN) reminder VAS unit at the southern end of the village and smaller 300mm roundel VAS units one near the Cock Inn P.H and one near Vine Close. A further permanent VAS unit is planned to be erected on a lighting column opposite the Caradoc View junction as part of Shropshire Council's VAS replacement programme.
- 2.13 Due to the high concentration of warning signs and road markings provided through Hanwood, we consider that drivers may be less aware of the key prevailing hazards and therefore they may be driving with less consideration for the village environment. The current layout could be considered as 'over-engineered' and this may be having a negative influence on driver behaviour, as this type of layout is normally associated with higher-speed sections of A-road. Coupled with the lack of developed frontage through some sections of the village, this may be influencing drivers to travel at speeds above the 30mph speed limit.
- 2.14 St. Thomas' & St. Anne's C.E primary school generates significant parking activity at the start and end of the school day. Parents use the lay-by's provided adjacent to and opposite the school, therefore this generates pedestrian crossing movements to/from the school entrance over the A488. School warning signs with flashing wig-wags are located on each approach of the A488 to this area.
- 2.15 Improvements to the highway environment recommended within this report may reduce school travel safety concerns. Combined with school travel plan promotion with the school, a reduction in school journeys by car could possibly be achieved thereby reducing the volume of pedestrian crossing movements across the A488 at this location.
- 2.16 Shropshire Council have delivered road safety talks to the School most recently in October 2016. This talk included how to safely use the Puffin crossing by the shop, the rear footpath to the back of the school, walking under the railway bridge and taking particular care if having to cross the road from the layby etc. At this time there were no issues raised by the children or class teachers regarding road safety. The next planned talk is 'Stepping Out' pedestrian training which is due to be delivered in March 2017.

3 Collision Data

- 3.1 Up to date Personal Injury Collision Data (PIC) data was sourced from Shropshire Council. This revealed that six personal injury collisions (1 serious and 5 slight injury) have occurred along the A488 within Hanwood village in the latest 5 year period. (09/10/2011 to 09/10/2016). The collisions are spread evenly throughout the village with no cluster sites or common factors involved. The collisions are summarised below:-

- **Ref 12f200277 14th January 2012 15:45**

A two-car collision at the Plealey junction just inside the 30mph speed limit boundary. A car turned right out of the junction in front of another oncoming car resulting in a side impact collision.

- **Ref 12f201108 3rd March 2012 14:46**

A skip lorry travelling eastbound collided with the railway bridge (signed as restricted headroom) causing slight injury to the driver.

- **Ref 13f301304 13th April 2013 01:45**

A car travelling north-eastbound lost control on the left hand bend near the Rea Brook bridge, the causation factor lists 'impaired by alcohol' as the primary factor. No other vehicles were involved.

- **Ref 15f50197618th May 2015 16:45**

A car travelling north-eastbound near Orchard Lane has crossed the centre line and collided head-on with a HGV travelling in the opposing direction.

- **Ref 15f503399 1st September 2015 19:00**

A pedestrian (female 31) stepped off the footway into the path of a HGV travelling south-west at the junction of Woodlands Avenue.

- **Ref 1682420 23rd June 2016 17:30**

At Hanwood Bank o/s The Paddock the driver of a vehicle heading towards Shrewsbury 'dozed off at the wheel' and drifted across into the opposing lane colliding with a vehicle heading into Hanwood. This resulted in 4 casualties (2 Serious, 2 slight).

- 3.3 Of the six collisions, two are directly related to driver error (railway bridge strike) and (dozing off at the wheel) and one is due to alcohol impairment. Therefore, it is reasonable to report that only three of the collisions remain which may be in part due to the highway layout and regarded as potentially 'treatable'.

- 3.4 In order to compare the number and frequency of collisions in Hanwood with the national average the collision rate per billion vehicle kilometres has been calculated by dividing the number of casualties, years in study, traffic flow and road length. The collision rate for the six collisions on the A488 in Hanwood (within 30mph speed limit) is **173** per billion vehicle kilometres. This compares favourably with the national average for urban A roads which is **501** per billion kilometres. (Source: Road Casualties Great Britain 2015).

4 Traffic and Pedestrian Count Information

Traffic Count

4.1 An Automated Traffic Count (ATC) was laid in 3 locations within the village between Wednesday 22nd June 2016 and Tuesday 28th June 2016.

4.2 Table 1 below summarises the results of these traffic counts.

	Eastbound			Westbound		
	Daily flow (week day ave)	Mean Speed (mph)	85 th ile Speed (mph)	Daily flow (week day ave)	Mean speed (mph)	85 th ile Speed (mph)
ATC 1 near Hanwood bridge.	4,332	31.3	34.9	4,286	29.4	32.4
ATC 2 near Church	4,444	30.7	33.8	4,393	29.6	32.7
ATC 3 near Hanwood Bank	4,732	34.2	38.7	4,696	31.8	37.1

4.3 It is interesting to note that the traffic flow drops by almost 10% from the northern end of the village (Hanwood Bank) to the south.

4.4 Traffic speeds are generally compliant with the posted speed limit apart from the north-eastern most section, where recorded speeds are generally above the speed limit. This is probably due to the semi-rural nature of this location as detailed in paragraph 2.4. A vehicle class summary for each of the three ATC locations is provided in Appendix B.

Pedestrian Survey

4.5 Due to concerns related to the narrow footway at the south-west extremity of the village, a peak hour pedestrian survey was undertaken at Hanwood Bridge to observe the most popular route for pedestrians to take when walking to/from the Primary School. There are two possible routes for pedestrians walking to/from the school from this point: the narrow roadside footway adjacent to the A488, or an off-road footpath which leads to the rear of the School.

4.6 The survey was undertaken on Thursday 21st July in the AM peak (08:15 to 09:15) and PM peak (14:30 to 15:45). The combined AM and PM peak hour results show 81 pedestrians were observed, of which 70 (87%) chose the rear footpath (off-road) route to the school and 11 (13%) walked on the footway alongside the carriageway under the railway bridge. Road safety education with the school where the use of the safer off-road footpath route to school is further promoted could be considered.

5 Site Observations

General observation of village characteristics

- 5.1 Driving along the A488 through the village it is soon apparent that conventional traffic engineering measures have been implemented over years in an attempt to reduce vehicle speeds. The previously described traffic surveys indicate generally well constrained vehicle speeds in line with the existing 30mph speed limit which may be partly attributed to the measures. However, as referred to earlier in this report this can make it harder to establish a sense of place to passing drivers who may see it as a typical 'A' road.

Pedestrian Crossing points

- 5.2 Currently there is only one formal pedestrian crossing point in the village (Puffin Crossing) near Hanwood bridge described earlier in report, paragraph 2.8. However there are other locations observed in the village where people cross the A488, i.e. where the bus stop alights opposite the Caradoc View housing estate. This can lead to pedestrians crossing at the same time when gaps in the traffic are available, as observed below.



Photo 4 – Hanwood bank crossing movements near Caradoc View.

Lack of on-street parking

- 5.3 During the site visits no on-street parking was noted anywhere throughout the village. On-street parking can be a useful aid in providing a mobile calming effect and the absence of this is enabling traffic to travel through the village without obstruction or the need to reduce their speed. A reappraisal of the existing sections of double-white line systems would be required in order to facilitate on-street parking.
- 5.4 One area where parking does appear to occur (although not observed) is alongside the village church. There is significant verge deterioration for a short length along the south side of the A488 presumed to be caused by occasional church related parking.



Photo 5 – A488 Hanwood o/s Church showing verge deterioration.

Low Kerb

- 5.5 There are several locations throughout the village where the kerb upstand between the footway and carriageway is low (approx. 20 – 50mm) probably due to the regular overlaying of the carriageway surface (without planing). The low kerb upstand combined with narrow footway and in some instances narrow carriageway alongside provides pedestrians with little protection from passing traffic. The low kerb presents an increased risk of vehicle overrunning which may be one of the reasons why there are reports of people feeling vulnerable when walking within parts of the village.



Photo's 6 and 7 – A488 Hanwood showing examples of low kerb upstand.

Overgrown vegetation

- 5.6 There is notable overgrown vegetation alongside the footway in some key places which appears to encroach into the highway. This is reducing the available width for pedestrians along sections of footway which are already considered to be narrow, increasing the feeling of vulnerability to passing traffic. In some instances this may force pedestrians or those walking with pushchairs or mobility aids into the carriageway.



Photo's 8 and 9 – A488 Hanwood showing examples of narrow footway/overgrown vegetation.

6 Options

- 6.1 Physical traffic calming measures in the form of road humps, speed cushions, priority build outs etc. are not felt to be appropriate given that this is an A road with strategic importance in the county and that vehicle speeds generally show good compliance with the posted speed limit. Physical traffic calming may also create unwanted noise, vibration and potential congestion which would have a negative impact on the local environment.

Minor traffic schemes in the form of traffic signs and road markings have been attempted throughout Hanwood in the past with some success as is backed up by the comparatively good safety record. However, as explored earlier in the report the village now appears cluttered with signs and road markings which may actually be having a negative impact on driver behaviour. The options below consider alternative means of speed reduction with the budget estimated costs shown.

6.2 *Removal of double-white line system / centre line*

Research has shown that centre line road markings can encourage faster vehicle speeds by drawing the driver's eye to the horizon, limiting awareness of the peripheral vision and surroundings, and adding to driver confidence.

Removing these road markings can make the road and its surroundings appear narrower to the driver, which can create a slower speed environment. In recent schemes in Shropshire the removal of centre lines has been shown to have an immediate effect with reductions of between 3-4 mph or more, sufficient to reduce the severity and number of accidents and to improve confidence and mobility for pedestrians.

The most effective method of removing road markings is to resurface or surface dress the carriageway. In addition it would be desirable to address the issue regarding the low kerb heights through the village. Therefore, the ideal scenario would be to plane out the carriageway to a suitable depth to restore the kerb height to the correct level before resurfacing the carriageway. A cheaper option would be to renew the existing surface-dressing, which appears to be in the region of five-years old (without planing).

Estimated Cost: £100,000 Plane out and resurface
£25,000 Surface dressing

6.3 *30mph Village Gateway points*

Enhanced 30mph gateway points would be beneficial to alert drivers to the fact they are entering the village from each direction. It is feasible to install traffic islands in the centre of the carriageway, which will physically narrow the carriageway running lanes to approximately 3.0 metres wide at each entry point. The traffic islands would support rural village style gateway signs mounted either side of the carriageway which will provide a strong visual message to drivers.

Estimated Cost: £7,000 for Central traffic islands (Bolt down recycled rubber islands)
£2,000 for Village gateway signs

6.4 Narrowing using small build-outs

Reducing the carriageway width from 7.3 metres to 6.0 metres via small build-outs over a short length would create a narrowing effect and help to serve as a reminder to drivers that they are travelling in an urban area. This would be particularly effective when coupled with the removal of the centre line marking.

Estimated Cost: £5,000 (2 pairs)

6.5 *Reduction of traffic sign clutter*

Traffic sign clutter can create a situation where drivers become blind to signs, ignoring their existence and not heeding the message or warning which is purveyed by the sign. Reducing this clutter so only necessary signs remain may be beneficial.

Estimated Cost: £1,500

6.6 *Vegetation Maintenance*

The identified areas of overgrown vegetation should be cut back to ensure footways are kept as clear as possible. Whilst this is responsibility of the adjacent land owner, the Council has the ability to carry out this work and re-charge the respective land owners.

Estimated Cost: £500 (administration costs)

6.7 Pedestrian Refuge near Caradoc View

As discussed in paragraph 5.2 there is a pedestrian desire line near Caradoc View generated by the bus stop. It is understood that there is an outline planning application for a housing development on land to the west of Caradoc View. This includes the provision of a pedestrian refuge in order to address this desire line and that created by the proposed development to the footway on the opposite side of the road. Some localised carriageway widening into the development site will be required here to facilitate the refuge.

Also, the development proposes a footway to be constructed across the site frontage linking to the existing footway to the front of Caradoc View. The proposed refuge coupled with the access and visible frontage from the development plus if combined with the traffic island gateway feature (6.3) with extended hatching will create a more urban feel to the environment which should also influence driver behaviour on this part of the A488 and encourage lower vehicle speeds.

A pedestrian refuge would assist pedestrians by allowing pedestrians to cross the road in two stages. The refuge would appear to be more appropriate than other forms of crossings i.e. a Zebra or Puffin Crossing which cater for locations with high pedestrian demand and if implemented in locations with relatively infrequent movements begin to be ignored by drivers.

The pedestrian refuge with the localised carriageway widening is likely to cost in the region of £10,000 - £20,000 (funded and constructed by the developer as part of their s278 works).

7 Conclusions and Recommendations

Conclusions

- 7.1 This report has considered the concerns expressed regarding vehicle speeds combined with sub-standard footway provision on the A488 through the village of Hanwood.
- 7.2 The site surveys have identified further issues e.g. narrowed footways due to vegetation, low kerbs adjacent to footways, proliferation of traffic signs, overuse of road markings within the village.
- 7.3 Collision data reveals that the casualty rate is well below the national average at this location (3 times lower). Traffic count data from 3 locations within the village reveal that mean vehicle speeds show generally good compliance with the 30mph speed limit, although 85th percentile speeds are a little higher than desirable.
- 7.5 A road marking removal scheme as described in option 6.1 is likely to achieve a reduction in vehicle speeds, giving even better compliance with the speed limit. However due to the high construction costs this is unlikely to be financially viable until carriageway maintenance is required. (See Appendix for photographic impressions of this proposal).

Recommendations

- 7.6 In the short term some targeted measures in key locations i.e. at the speed limit gateways (option 6.3) and minor traffic calming at two points (option 6.4) should be considered, together with vegetation maintenance to clear footways. Also the pedestrian refuge (option 6.7) is recommended which may be developer funded should the planned housing development to the west of Caradoc View go ahead.
- 7.7 Promotion of the School travel plan and road safety education at the Primary School would help to promote the use of safer routes to school i.e. the rear footpath link (as discussed in section 4).

Appendix A Further Site Photographs / Photo Impressions of selected proposed options.



Photo 10 – A488 Hanwood Bank existing double white line system



Photo 11 – A488 Hanwood Bank showing photo impression of lining removal (option 6.2).



Photo 12 – A488 Hanwood Bank double white line system



Photo 13 – A488 Hanwood Bank showing photo impression of lining removal (Option 6.2).



Photo 14 – A488 Hanwood near Post Office Lane showing existing layout.



Photo 15 – A488 Hanwood near Post Office Lane showing photo impression of road narrowing and lining removal (Option 6.4).



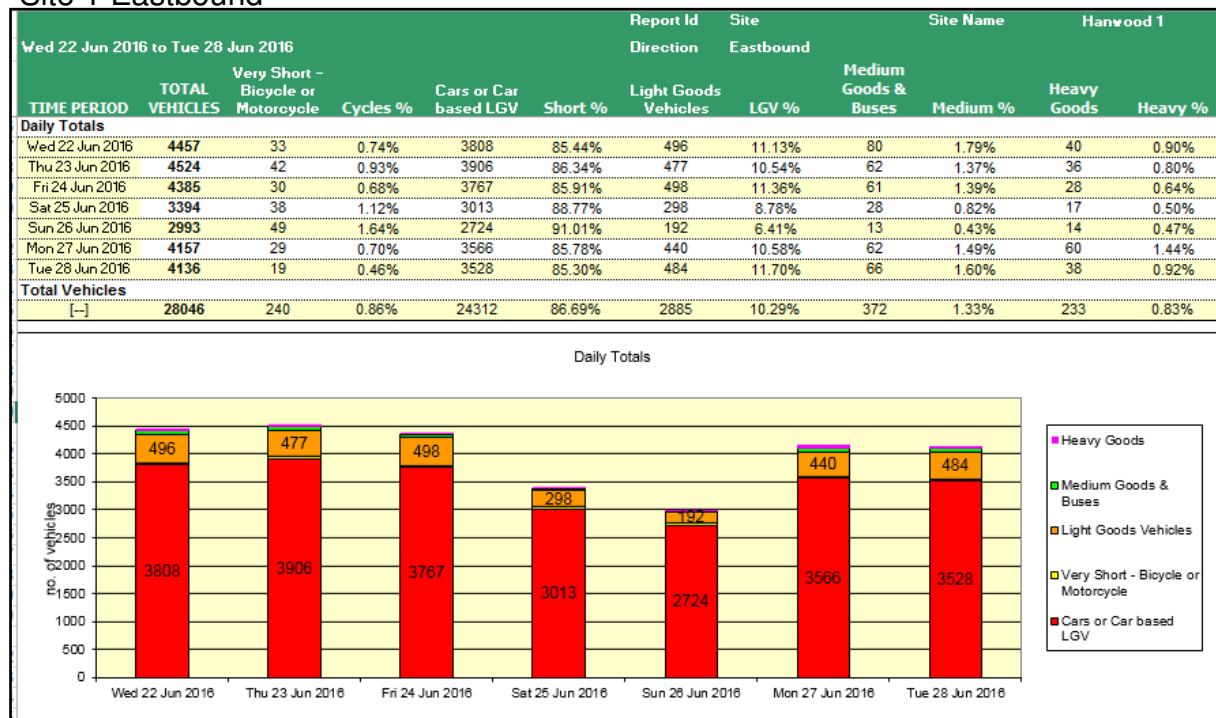
Photo 16 – A488 Hanwood east of Caradoc View showing existing layout view looking eastbound.



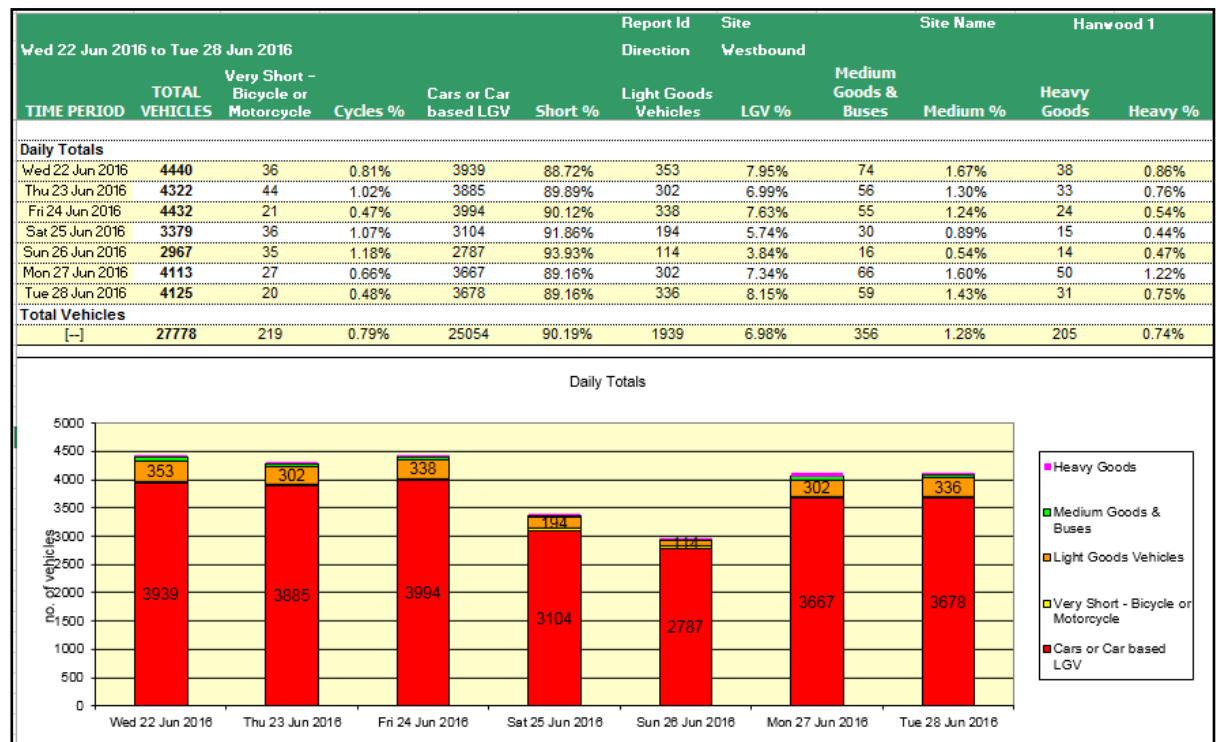
Photo 17 – A488 Hanwood east of Caradoc View showing photo impression of traffic island as a gateway feature (Option 6.3). Photo shows eastbound view - gateway signs placed in the verge would accompany the island, facing westbound traffic.

Appendix B - ATC Vehicle Class Summary breakdown

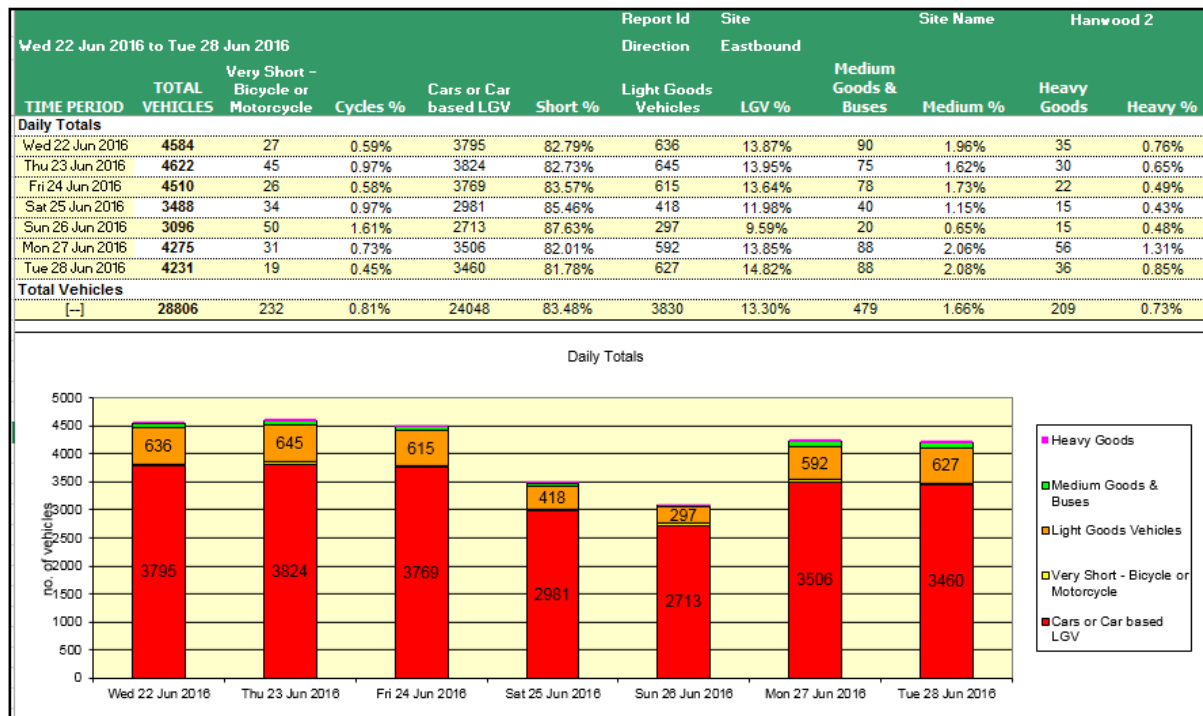
Site 1 Eastbound



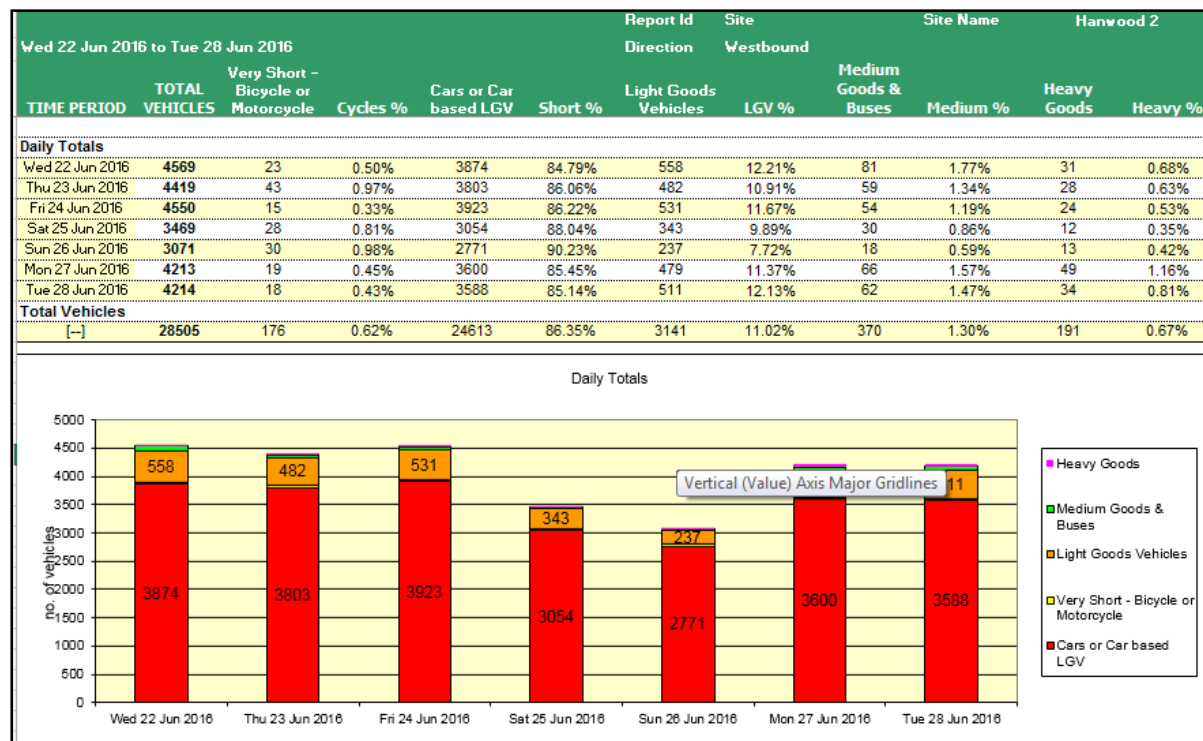
Site 1 Westbound



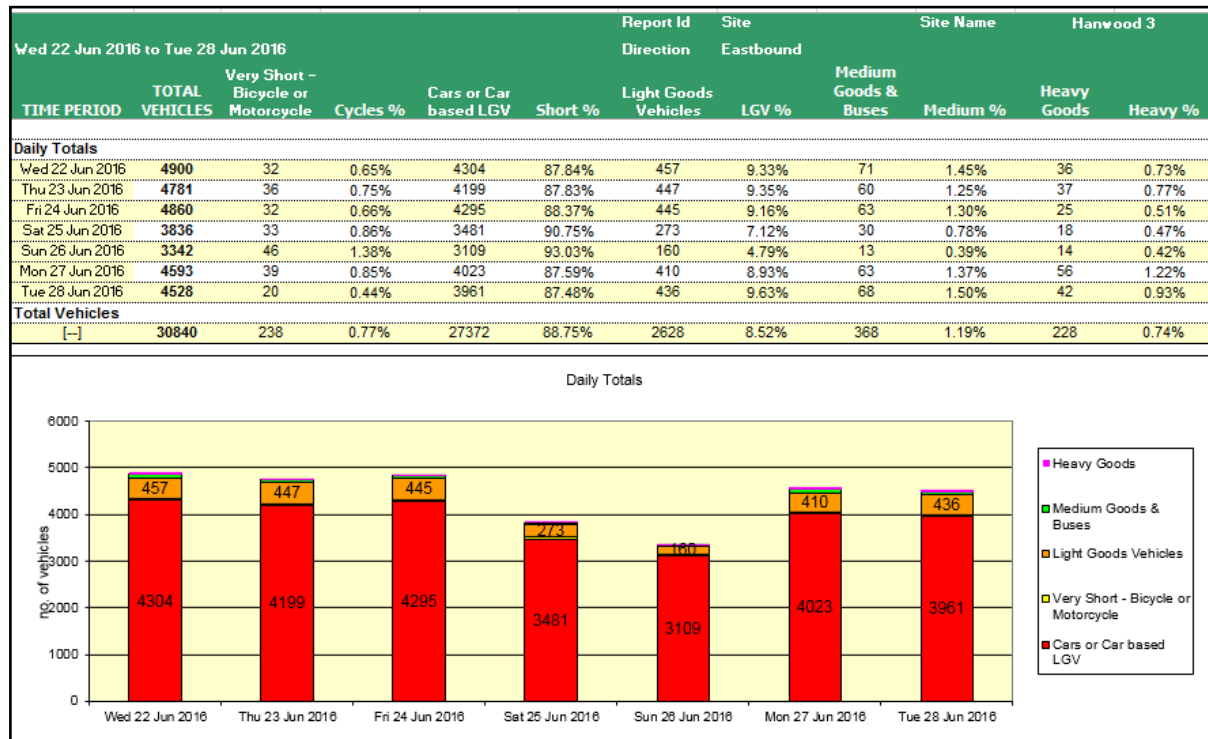
Site 2 – Eastbound



Site 2 – Westbound



Site 3 – Eastbound



Site 3 – Westbound

