

**B377 Ashford Road
Speed and Traffic Management Study
Feasibility Report**

March 2017

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1. INTRODUCTION:

The County Council has carried out this report having received concerns about vehicle speed and safety along Ashford Road.

This road has therefore been assessed under Surrey County Council's policy (2014) for determining speed limits. The policy can be found at the following address:

https://www.surreycc.gov.uk/_data/assets/pdf_file/0011/28748/Setting_Local_Speed_Limits_Policy_July2014.pdf

- Step 1 – Request to change speed limit is received.
- Step 2 – Measure existing speeds and analyse road casualty data.
- Step 3 – Compare the existing speeds with the suggested new speed limit.
- Step 4 – Conduct feasibility of supporting engineering measures.
- Step 5 – Consult with Surrey Police Road Safety and Traffic Management Team.
- Step 6 – Local Committee decision and allocation of funding
- Step 7 – Advertisement of legal speed limit order and implementation.
- Step 8 – Monitoring of success of scheme

There should be no expectation that the police would be able to provide regular enforcement if a speed limit is set too low as this could result in an unreasonable additional demand on police resources. It is also important to set reasonable speed limits to ensure consistency across the country.

2. SITE ANALYSIS:

Ashford Road is a 'B' class road, and has been given a Surrey Priority Network (SPN) code of 3 which is classified as a Secondary Distributor. These classifications in part help to establish the priority levels for maintenance purposes. More information on Highway Network Hierarchy can be found online at the following address:

https://www.surreycc.gov.uk/_data/assets/pdf_file/0005/34547/Highway-Safety-Inspection-Policy-Nov13.pdf

Ashford Road forms part of the link between Ashford and the A308 to the north and Laleham, Shepperton and Chertsey to the south.

Ashford Road is predominantly fronted by properties that are set back from the carriageway behind a verge to the west and to the east there is a verge fronting a tree line. It has a system of street lighting along its entire length and is subject to a speed limit of 40mph.



Figure 01: Ashford Road j/w Shaftesbury Crescent (Google)



Figure 02: Ashford Road terminal signs (Google)

3. DATA COLLECTION:

3.1 Speed Data

Speed data for this location has been assessed.

The results are shown in the following table:

Road	Average mean speed (mph)	Average 85thile speed (mph)
Ashford Road (site 1)	32.6	38.2
Ashford Road (site 2)	36.8	42.85
Ashford Road (site 3)	40.4	45.6
Ashford Road (site 4)	39.35	45.1
Ashford Road (site 5)	29.8	34.55

Figure 03: Speed data

The 85th percentile is a measurement that reflects the speed that 15% of drivers are exceeding, and is used by Highway engineers when evaluating driver speed behavior.

Under Step 3 of the policy, the table below compares the existing speed limit against the requested limit, and the existing mean speed of the road.

Road	Current limit (mph)	Requested limit (mph)	Existing mean speed (mph)
Ashford Road (site 1)	30	30	32.6
Ashford Road (site 2)	40	30	36.8
Ashford Road (site 3)	40	30	40.4
Ashford Road (site 4)	40	30	39.35
Ashford Road (site 5)	30	20	29.8

Figure 04: Speed data evaluation

The county council's speed limit policy states that an urban road (has a system of streetlight) cannot be reduced from 40mph to 30mph by signing alone unless the mean speeds are at 35mph or below. It can be seen from the table above that the mean speeds in the 40mph section are in excess of 35mph, and therefore the speed limit cannot be reduced by signing alone. The 30mph section to the south of the road is already signed at the most suitable speed.

It should be noted that recently Charlton Lane had the speed limit increased from 30mph to 40mph due to the mean speed of motorists being greater than 35mph, thereby making a limit of 40mph more appropriate.

Consultation has been carried out with Surrey Police Road Safety and Traffic Management Team, who support maintaining the existing speed limits, and have indicated that they would object to a reduction of speed limit unless adequate traffic calming measures were put in place.

3.2 Personal Injury Collisions

An assessment has been made of the personal injury collisions along Ashford Road for the last 3 full years and part of 2016 where data is available, giving the period between 1st January 2013 and 31st October 2016. The Police and Surrey County Council do not collect or hold 'damage only' collision data, and therefore we are unable to report or comment on these. During this period there are nineteen recorded personal injury collisions, fourteen had a severity of 'slight' and five 'serious'.

Latest 3 year and year to date collisions (01/01/13 to 31/10/16)			
Year	Slight	Serious	Fatal
2013	3	3	0
2014	7	1	0
2015	2	1	0
2016 (Jan to Oct)	2	0	0
Total	14	5	0

Figure 05: Personal Injury Collision data

When the police attend personal injury collisions they assess and log the contributory factors that lead to the collision. The table below shows all the factors that led to a collision that have been recorded at this location during this assessment period. Some collisions have a number of factors attributed to them.

Collision contributory factors (01/01/13 to (31/10/16)	
Factor	Number
Failed to look properly	8
Failed to judge other persons path or speed	6
Careless/Reckless/In a hurry	6
Slippery road (due to weather)	5
Exceeding speed limit	3
Poor turn or manoeuvre	3
Vision affected by rain, sleet, snow or fog	2
No factors given	2
Sudden braking	2
Aggressive driving	2
Loss of control	2
Travelling too fast for conditions	1
Impaired by alcohol	1
Vision affected by dazzling sun	1

Following too close	1
Inexperience or learner driver	1

Figure 06: Personal Injury Collision contributory factors

Twelve collisions took place during daylight, whilst seven were during darkness, but with street lights. The majority, eleven, of the collisions happened when the road surface was wet/damp, as opposed to eight when dry.

The location plan below (Figure 07) shows the location of the recorded collisions. The majority of these collisions have taken place near or at junctions with side roads.

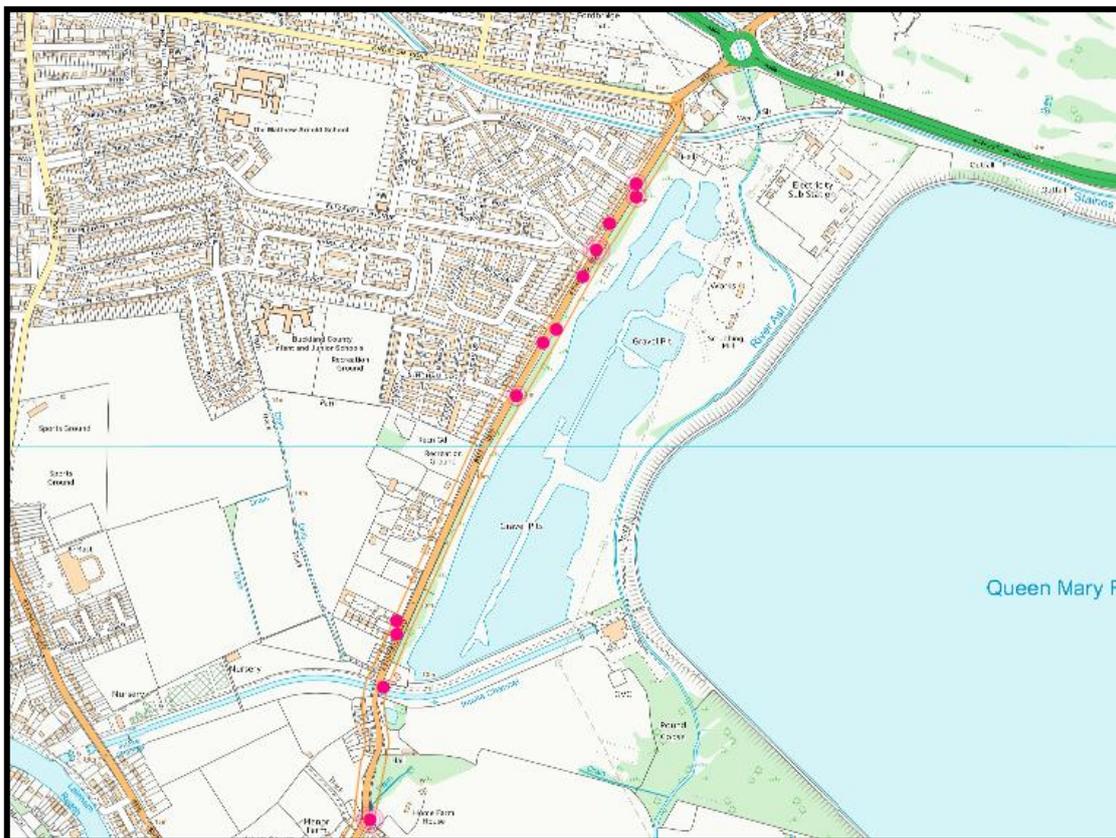


Figure 07: Personal Injury Collision Plots

4. DISCUSSION AND OPTIONS:

According to the Department for Transport's documentation, traffic calming is a useful way of controlling drivers' speeds where speeds are either excessive and/or inappropriate for the type and use made of a road. Justification for installing traffic calming is often based on improving safety by reducing accidents. Existing road usage and characteristics that need to be considered are:

1. Bus routes:

Ashford Road forms part of at least one bus route that helps to form an important part of the integrated transport system. Introducing physical traffic calming measures has the potential for creating issues likely to impact on passenger comfort and patronage, drivers' health, bus journey times and vehicle maintenance costs. This may affect the viability of a service, which should be considered.

2. Emergency service vehicles:

Consideration should be given to the cumulative effect physical traffic calming schemes can have on the ability of fire and ambulance services in meeting response times. Certain types of traffic calming features, e.g. chicanes, can unwittingly lead to increased patient discomfort, or cause damage to equipment carried in ambulances or fire appliances. Objections may be raised by the emergency services to proposed traffic calming schemes.

3. Vulnerable road users:

3.1. Pedestrians:

Pedestrians frequently cross the road at locations most convenient to the desired line of travel. Depending on the type and location, traffic calming measures can influence pedestrian flows and movements for the better. Certain additional measures may improve helping them cross the road. In Ashford Road there is only a footway on one side of the road.

3.2. Disabled people:

Disabled people can benefit from traffic calming. Reductions in traffic speeds and full width flat-top humps assist wheelchair users in the task of crossing roads.

Considering the needs of disabled people when identifying the most appropriate form of traffic calming would ensure access opportunities are equal to those of able-bodied people.

3.3. Cyclists:

Traffic calming can be of benefit to cyclists; where reductions in motor vehicle speed, dominance and volume are achieved. Space is at a premium and there is insufficient road width to incorporate a cycle lane, even an advisory one, along Ashford Road.

3.4. Equestrian:

Equestrians are vulnerable to inconsiderate drivers. Reducing vehicle speed, dominance and where possible the volume provides a potential benefit to the ridden, led or driven horse.

Gateways blocking verges can lead to equestrians having to move onto the carriageway, where they may be less safe. The British Horse Society reports that horses have been known to trip on round-top humps. There is suggestion that horse riders feel threatened where road narrowings are used: however, this is anecdotal.

3.5. Motor cyclists:

The behaviour and road usage of motorcycles is different to that of vehicles with four-wheels or more. Riders face hazards not apparent to other drivers, such as changes in road surface or alignment.

4. Street lighting:

Although a system of street lighting is present it may prove to be insufficient for certain types of proposed traffic calming measure. For example, the regulations governing the requirements of the road hump are such that, other than in 20 mph zones schemes, street lighting should extend over the whole length of the road where they contain humps. Chicanes and narrowings need to be conspicuous for drivers, during both day and night-time conditions: adequate levels of street lighting need to be in place in the areas around chicanes.

It is likely a check will be needed to ensure the required standard of lighting is met if additional traffic calming features are introduced.

5. Public attitudes:

Vertical and horizontal deflections are useful devices to control speeds and consequently reduce accidents. The success of these types of schemes is determined by not just the effect on speed, flows and collisions, the objective measures, but also their subjective evaluation.

Without support, any traffic calming measure can become discredited. Although it may not occur in this situation, there are documented examples of pressure from local communities, citing for example noise and vibration problems generated by vehicles passing over or through features, leading to objections and eventual removal of the measures.

6. Impact on street activities:
According to the Department for Transport there is some evidence that indicates traffic calming schemes can have a positive effect on the independent mobility of children. However, there is less evidence that they substantially affect the amount of adult mobility, walking and/or cycling.
7. Environment:
Before a scheme is implemented it is advisable to ascertain the full impact the proposed traffic calming measures will have. This would consider not only vehicle speeds, personal injury incidents and non-motorised user needs but also the environmental impact.

Environmental impact can cover a range of areas, but it is unlikely to be practical or necessary to carry out an in-depth assessment for air quality, visual and landscape quality, cultural heritage, flora and fauna, drainage, social cohesion, economic impacts and overall quality of life in this situation. It is only where a significant impact on any of these factors is anticipated that an in-depth analysis should be undertaken, assessing negative impacts against the benefits.

There are a number of different options available for use and some of them have been explored below:

4.1 Option 1 – Highlighting of Speed Limit Change

Highlighting the change to the speed limit is an important way to slow drivers down when entering the bendy section of Ashford Road. Laying 'slow' markings, '3, 2, 1' high friction surfacing strips and illuminating the terminal signs can emphasize this. Four of the incidents in the accident data report show that vehicles travel too fast around the bends, so making drivers more aware of the terminal signs will potentially lower the collisions. ***The price for the changes in PC0699_01 will cost approximately £5,000.***

4.2 Option 2 – SCRIM Test

A lot of the collisions that have taken place along Ashford Road in the last three years have been due to drivers losing control of their vehicles in wet conditions. A SCRIM test would be recommended in order to determine whether or not the road surface has satisfactory skid resistance in these conditions. If the results suggest the skid resistance is poor, then further investigations and recommendations would be necessary as to how best to manage this.

4.3 Option 3a – Traffic Calming (Road Humps)

Numerous types of road hump are available including round top, flat top, raised junction, sinusoidal, 'H' hump, 'S' hump, thumps, and cushions. According to research conducted by the Department for Transport, road

humps have the largest impact on speed reduction, flow and, with the exception of the 'thump', on injury collisions. However, they also tend to cause the greatest delay to emergency service vehicles. These measures are very effective, but restrictive, forms of traffic calming and need to be considered against the road classification. It has been estimated that this road would require approximately sixteen speed cushion measures in order to comply with guidance published by the Department for Transport. As the speed limit is considered to be the most appropriate for this road given the recorded speeds, speed cushions are not recommended on roads with a speed limit of greater than 30mph. With a general compliance to the existing speed limit and the collision rates decreasing since 2014, this option is not recommended at this time.

Option 3b – Traffic Calming (Rumble Device)

These measures can be in the form of rumble areas or rumble strips. According to research conducted by the Department for Transport, rumble devices appear to have little impact in reducing traffic speed or flow. They do have a moderate impact in reducing injury incidents, and cause little delay for emergency vehicles. Noise from these measures mean that Surrey County Council does not place them near residential properties, and as such, rumble devices are not recommended.

Option 3c – Traffic Calming (Narrowing)

Narrowings can be created from islands (pedestrian and traffic), pinch points and/or build outs. According to research published by the Department for Transport islands have a low impact on traffic speeds, flows and injury collisions. Pedestrian islands do, however, provide a useful facility for assist pedestrians in crossing the road. However, with no footway on the eastern side of the road, these are not recommended. The other types of narrowings, including pinch points, and build outs do have a greater impact on traffic speed, flow and injury collisions, although these vary depending upon the layout used and location. They also, according to the Department for Transport, have the affect of causing delays to emergency services. The speed limit of 40mph is currently appropriate, and as these measures should be placed on a 30mph road, it is not viewed that these alone would reduce speeds significantly enough to ensure a 30mph speed limit was suitable. Observations of similar features have shown that some drivers accelerate to make it through a priority give way rather than having to stop, therefore this could have a possible increase in both speeds and collisions. With a general compliance to the existing speed limit and the collision rates decreasing since 2014, this option is not recommended at this time.

Option 3d – Traffic Calming (Chicane)

Chicanes can include single lane, two-way, gateway and mini-roundabouts. From this group of measures, only single lane chicanes have a large impact on speed reduction and flow, whilst the others have a moderate impact. It should be noted that the effective impact of mini-roundabouts is related to the amount of deflection that can be achieved and visibility. With a general compliance to the existing speed limit and the collision rates decreasing since 2014, this option is not recommended at this time.

Option 3e – Traffic Calming (Vehicle Activated Devices)

These features could include vehicle activated signs or enforcement cameras. These types of measures have a moderate effect on traffic speed and reduction in injuries caused by collisions, but have little impact on traffic flow. With a general compliance to the existing speed limit and the collision rates decreasing since 2014, this option is not recommended at this time.

4.4 Option 4 – Reduce speed limit to 30mph without Traffic Calming

A 30mph speed limit throughout Ashford Road was explored but when the recorded speeds were compared against the County's speed limit policy, it was found this was not possible. More information can be found in Appendix B.

4.5 Option 5 - Junction Warning signs

Installing junction warning signs on either side of the junctions along Ashford Road will make drivers more aware of potential vehicles pulling out on to the main road. When examining the accident data it is clear that a number of the collisions that took place involved cars turning into or coming out of side junctions. Highlighting this will potentially lower the number of collisions. ***The price for the changes in PC0699_02 will cost approximately £3,000.***

4.6 Option 6 – Chevron signing

Surrey County Council's Road Safety Team has requested the moving of a couple of chevron bend warning signs into new locations. This relocation is aimed to place the signs directly in front of a driver's vision. Currently they are too much to one side, and do not provide the maximum effect or benefit. ***The price for the changes in PC0699_02 will cost approximately £1,000.***

4.7 Option 7 – Do nothing

The final option for Ashford Road is to do nothing. The speed data indicate that there is a general compliance around the speed limit. The road shows an improving collision record.

5. RECOMMENDATION:

It is recommended that the local committee considers option 7, to do nothing. This is due to the speeds recorded in the surveys being acceptable to keep the speed at 40mph, and with the houses being set back from the road it is best to keep the existing layout as it is. The existing markings and signage at the 30mph terminal signs should already be sufficient enough to make drivers aware.

6. APPENDICIES:**A) Drawings showing proposed options:**

PC0686_01 – Option 1 – Highlighting of Speed Limit Change

PC0686_02 – Option 5 – Junction Warning signs

PC0686_03 – Option 6 – Chevron signage (Plan from Road Safety Team)

B) PC0686_04 Speed Survey Results