

Job Name: Keinton Mandeville

Job N^o: MNY23-01-02Date: 29th February 2024

Client: Keinton Mandeville Parish Council

Keinton Mandeville Traffic Study – Report and Recommendations

Introduction

This report has been prepared at the request of Keinton Mandeville Parish Council to assess traffic issues within the village of Keinton Mandeville. The report has been informed by a series of traffic surveys which have provided data for analysis, and an on-site meeting with Parish Councillors to view and assess the issues that appear at various times, and a series of site visits

This report briefly describes the highway network within Keinton Mandeville including speed limits, the availability of footways, carriageway widths and known constraints. It then identifies the “trouble spots” as discussed with the Parish Council before going on to look at available traffic data including volume and speed. Finally, the report looks at the issues, initial findings, and next steps.

This report is the final draft report of this initial commission. It merges text and data and findings from two previous reports and includes recommendations and costs that have not previously been covered. This report is intended to be freestanding and does not need to be read in conjunction with its predecessors – any text or data that is needed to comprehend this report is included within it.

Local Highway Network

The main road through Keinton Mandeville is the B3153 which runs from Ansford in the east to Langport in the west, a distance of just over 22km. the B3153 is divided by the A37 at Lydford-on-Fosse and Keinton Mandeville lies approximately 2km west of the A37 between Lydford and Somerton. The B3153 at Keinton is thus a through route between the A37, Somerton and Langport where it joins the A372. Within the village the B3153 is lit and subject to a 30mph limit. Either side of the village the national speed limit applies with no buffer zone to bring speeds down gradually. To the east the 30mph limit starts just east of the last property in the village, to the west the 30mph signs are some distance from the built-up area of the village.

Coming in from the east, the B3153 Castle Street is approximately 7-8m wide throughout, comfortably wide enough for 2-way traffic *if there are no parked vehicles*. Approaching the staggered cross-roads junction with Coombe Hill (north) and Queen Street (south) there are observed to be vehicles parked near the junction on the south side of Castle Street before the junction with Queen Street. Beyond Queen Street the B3153 changes name to High Street and passes the village shop “Keinton Stores” where parking outside is common (and necessary for survival of the business). between the shop and the queen street junction the south footway is very narrow. the carriageway is restricted in width west of Queen Street and thus any parked vehicles cause a significant obstruction.

Continuing west from Keinton Stores the B3153 remains around 7-8m wide with sporadic parking along the route. There are continuous footways on the north side of the carriageway, but not on the south side; none of these are generous especially on the north side where the path is only around 1m wide,

barely enough for a mobility scooter or double buggy. Around 500m west of the junction with Queen Street, Barton Road leaves on the north side of the road. Beyond this heading west development thins out and the B3153 heads out of the village.

Other roads within the village that are of interest to this study include:

- Queen Street, *leading to*
 - Chistles Lane
 - Church Street
 - Common Lane
- Coombe Hill
- Barton Road

These are described below.

Queen Street

Queen Street leads south from the B3153 for a total of around 1km to a junction with Common Lane and Church Street. There is residential frontage throughout save for one small agricultural frontage some 100m south of the junction with Castle Street B3153. Immediately south of the junction Queen Street is too narrow for two-way traffic and thus traffic turning in from the B3153 conflicts with traffic trying to turn out. Footways are also very restricted along this length, being limited to the east side. Whilst the carriageway and footways are generally wider further south, they are still only just adequate for two-way traffic and pedestrian safety, and any level of on street parking reduces the road to single way working.

The junction with Common Lane and Church Street is a priority junction where Queen Street is the stem of the T and yet is also the main road (with Common Lane) through the junction. This creates issues which are discussed later in this report.

Chistles Lane

Several side roads join Queen Street along the length between the B5135 and Common Lane, most are short cul-de-sacs and other than being affected by parking issues are not integral to the operation of the highway network or the issues surrounding this operation. However, Chistles Lane is rather longer and hosts the local primary school and thus is integral to the network. Chistles Lane also serves the village hall and a recent housing development.

Chistles Lane is generally around 6.5m wide with footways on both sides and is built to modern standards. The issues arising here are mainly due to on street parking and in particular traffic at the start and end of the school day. This is covered later in this report.

Note – Irving Road connects Chistles Lane to the B3153 but is only available to pedestrians and cyclists, a vehicle “plug” prevents through vehicle traffic from using this route. We are advised that this plug is not adopted and is in third party ownership.

Church Street

Church Street heads west from the junction with Queen Street and Common Lane and serves several dwellings that front onto it as well as the Church of St Mary Magdalene via Church Lane. The carriageway

varies between 4.5-5.5m wide, is lit and subject to a 30mph limit. Whilst there are grass verges there are no footways save for a short distance near Church Lane.

Common Lane

Common Lane heads east from the junction with Church Street and Queen Street, and despite being in line with the former it is the latter with which it forms the main road through the junction. Thus, through traffic must undertake sharp left or right turn whilst traffic to and from the minor road (Church Street) does not need to turn. Common Lane is narrow and has no footways, immediately east of the junction it is too narrow for two vehicles to pass safely. The issues around this junction are explored later in the report.

Coombe Hill

Coombe Hill leaves the B3153 almost opposite and slightly to the east of Queen Street and runs almost due north out of the village. Wide enough for two vehicles to pass (although there is no centreline indicating the carriageway is not wide enough for two *large* vehicles to pass) Coombe Hill quickly assumes a rural character passing between hedgerows and fields. The issues here relate to the junction with the B3153 and are explored later in the report.

Barton Road

Barton Road leads north from the B3153, the junction being towards the western end of the village. Initially the road is wide enough for two-way traffic and has a footway along one side for approximately 100m from the junction, beyond this there are no footways, only grass verges although residential frontages continue for a further 300m (approximately 400m from the junction) beyond which a rural character is assumed although the 30 mph speed limit still applies. The main issue here is the speed of traffic on the B3153 past the junction, this is covered later in this report.

Traffic Data

MNY commissioned automated traffic counts (ATC) on behalf of Keinton Mandeville Parish Council. These were undertaken by AutoSurveys between Monday 21st and Monday 27th February 2023 providing a full one week's data. These surveys gave details of traffic volume, vehicle class and speed by direction and by hour, allowing identification of peak hour flows, proportion of HGV traffic and mean/85thile speeds at each location. The ATC counters were placed at the following locations.

- Site 1 – B3153 west of Keinton Mandeville village
- Site 2 – B3153 east of Keinton Mandeville village
- Site 3 – Barton Road north of Keinton Mandeville village
- Site 4 – Common Lane east of junction with Queen Street
- Site 5 – Chistles Lane east of Keinton Mandeville Primary School
- Site 6 – Church Street west of Church Lane
- Site 7 – Queen Street between the B3153 and Chistles Lane

Further surveys were conducted to supplement this data – an ATC was placed in Queen Street from the 30th of September to 6th October 2023, and a video survey was undertaken on all four arms of the B3153/Queen Street junction on the 3rd of October 2023.

The traffic data collected is summarised in Table 1 below:

Table 1 – Summary ATC data

Location	AM 2-way	PM 2-way	12 hour 2-way	Mean speed	85%ile	Speed limit
Site 1	481	455	4227	38.5	45.1	30
Site 2	466	435	4113	41.4	48.3	60
Site 3	133	144	1069	31.8	37.2	30
Site 4	97	103	805	17.9	20.4	30
Site 5	154	121	983	18.4	21.7	30
Site 6	22	29	210	22.7	29.0	30
Site 7	273	233	1892	24.2	29.7	30

Several patterns emerge in the data and several observations can be made. The first relate to Sites 1 and 2, which are on the B3153 through route. The first observation is that traffic is consistently slightly higher at Site 1 (west) than Site 2 (east), the difference is small, approximately 3%, but consistent. No survey has been done to identify the amount of traffic on the B3153 that originates or terminates in Keinton Mandeville, but this initial figure suggests a slight trend towards travel to and from Somerton and Langport rather than towards the A37. Also, on the through route the speeds recorded are well above 30mph. In practice although the speed limits at each counter were different both counters were near the change in limit from National Speed Limit to 30mph. The findings suggest that drivers are slowing down on the approach to the 30 limits but not enough to be driving below the speed limit when they reach it. The speeds given in the table are in one direction only – the one with the highest mean and 85%ile, and in both cases the highest speeds are for traffic heading out of the village, however the speeds for traffic heading into the village are not much lower, as shown in Table 2 below:

Table 2 – ATC recorded speeds on the B3153

	Site 1 (West)	Site 2 (East)
85%ile inbound	41.6	45.0
85%ile outbound	45.1	48.3
Mean inbound	34.8	38.4
Mean outbound	38.5	41.4

Moving onto other patterns emerging from Table 1, Chistles Lane shows some noticeable trends which give an understanding of the nature of traffic to the school. The first point to note is that the AM peak has 33 more vehicle trips than the PM peak, a factor accounted for by the school/education peak coinciding with the AM peak but not the PM peak. Notable is that this difference is replicated on the B3153 in both counts but not on any other count in Keinton Mandeville, indeed in sites 3,4 and 6 the PM peak is the higher of the two. This suggests that the education peak is noticeable on the B3153, although this will not just relate to Keinton Mandeville Primary School but also to other education trips.

The second important point to note is that the issues observed around the school result from just 33 extra trips, and that as a vehicle arriving to drop off a child and then departing again counts as two trips, the issues result from possibly only 16 extra vehicles. This occurs for several reasons, one is that the system is already close to capacity, especially for parking and dropping off, another is that while the figures are per hour, most of this extra traffic occurs in a period of less than 20 minutes. It should also be noted that some of the school traffic does not appear on Chistles Lane at all with cars parking on Queen Street.

In our original report we commented that there was likely to be very little traffic between Sites 4,5 and 6 all of which are served by Queen Street, and thus the sum total of these surveys will approximate to the total of traffic on Queen Street at its junction with the B3153, in practice the survey of last October showed this to be true, and it can be demonstrated that the vast majority of traffic at sites 4,5 and 6 is headed to or from the B3153. This is shown below in Table 3.

Table 3 – flows on roads served by Queen Street.

Location	AM 2-way	PM 2-way	12 hour
			2-way
Site 4	97	103	805
Site 5	154	121	983
Site 6	22	29	210
Total 4-6	273	253	1998
Site 7	273	231	1892

These flows are between 45% and 60% of the total traffic on the B3153, and thus they indicate that a significant percentage of the traffic on the B3153 is local to Keinton Mandeville and has an origin or destination reached via Queen Street. In addition, there is the traffic counted on Barton Road and traffic that originated in Keinton Mandeville but did not pass any of the counters at sites 3-6. Whilst the traffic flow is very similar on either side of the village on the B3153, the evidence would suggest that over half of the traffic (as a minimum) on the B3153 has its origin or destination within the village.

With regards to the other three survey locations: speeds on Common Lane and Church Street are below the speed limit, although 85%ile is surprisingly high on Church Street given the quality of the road, but this is on a very low traffic flow and the result is likely to be skewed because of this. More surprising is the 85%ile speed on Queen Street, given that this road does have significant constraints and carries a very significant level of traffic given the width and constraints of the carriageway.

At Barton Road, the speeds are above the speed limit although there is a leap from the mean to the 85%ile partly reflecting the sample size and both speeds reflect the character of the road at the survey location.

Accident Data

We used CrashMap (for which we have a subscription), a commercial website that collates all accident data recorded from the Police STATS19 returns, which in turn record all reportable incidents that have been reported. This has replaced getting data from the Highway Authority as the main method of getting site specific and area specific data. CrashMap showed that in the most recent five-year data period there have been three injury accidents within the village, all on the B3153 and all resulting in slight injury* to one casualty. None of these are close to a junction nor are any of the accidents close to each other, thus there is no discernible pattern.

**Injury levels are defined in STATS20, the guidance on completing the STATS19 form, slight injury is that which might need treatment as an outpatient or from a paramedic, serious is that requiring in-patient treatment and fatal is obvious save for the fatality must occur within 30 days of the accident. Non-injury accidents are not recorded.*

Key Issues

From the above, and from speaking with the Parish Council, the following key issues have been identified:

- Traffic and parking on Chistles Lane and Queen Street at the start and end of the school day
- Safety at the junction of B3153, Queen Street and Coombe Hill
- Safety at the junction of Queen Street, Church Street and Common Lane
- Safety at the junction of B3153 and Barton Road
- Congestion around the village store

The first two issues are interlinked and are thus addressed together – taking all the above in turn:

Traffic and parking on Chistles Lane and Queen Street at the start and end of the school day, and safety at the junction of the B3153, Queen Street and Coombe Hill

One key thing to note is the pronounced peak in this area. From table 1 we can see that the peak on the B3153 is round 11% of the 12-hour total, whereas on Queen Street the AM peak is around 14% of the total. This reflects that there is less through traffic in the background and the impact of the school on peak flows (where the morning commuter peak is at the same time as the school peak) – the PM peak is typically between 3pm and 4pm which again is indicative of the impact of the school on traffic flows. Typical flows between the peaks are around 120 vehicles to 130 vehicles, or around 50% of the peak hour flow.

As noted in the previous report, and now reinforced by the survey at site 7 the total flow on Queen Street is between 45% and 60% of the total traffic on the B3153 during the Peak, and over a 12-hour day the flow on Queen Street is around 44% of the total flow on the B3153. Given the survey for site 7 is on Queen Street with very few properties between the survey and the B3153 it is apparent that traffic on Queen Street forms a significant proportion of total traffic on the B3153 – B3153 traffic is by no means all “through traffic”.

It is also notable that the flow on Chistles Lane is over 50% of that recorded on Queen Street. Unlike count sites 4 and 6, Chistles Lane is a dead end and has a school, and thus traffic on Chistles Lane is most certainly NOT through traffic from outside the village.

It is also notable that the 85th percentile speed at site 7 is 29.7mph, which is astonishing when one considers the poor standard of the length of Queen Street where the counter was placed. From a speed enforcement viewpoint this is below the speed limit, although it does raise the question as to whether the speed limit is appropriate at this location.

Video surveys and impact of traffic on Queen Street.

The second ATC was accompanied by a video survey at the junction of the B3153 with Queen Street. This entailed four cameras, one for each arm of the cross roads. This survey lasted for 12 hours and resulted in 48 hours of video.

This video survey was commissioned as bare figures alone cannot tell the full story of traffic on a road such as Queen Street. Where a road can comfortably handle two-way traffic assessing whether it is over capacity is largely a matter of numbers, comparing the known traffic flow with other variables such as the carriageway width, typical speed, presence of parked cars and side roads and the accident record, but when a road is not wide enough for two-way traffic it is much more difficult. For example such a road can carry more traffic if the flow is predominantly or entirely in one direction, and the capacity is much reduced if there is a significant counter flow. Further, any capacity issue may be the result of a short spike in traffic such as that caused by a venue that generates most traffic in a very short space of time – the start and end of the school day is an example of such generation.

The video evidence shows that there are brief periods when Queen Street cannot handle the level of traffic asked of it. There is an existing length near the junction with the B3513 that is not wide enough for two-way traffic, and this is exacerbated as some vehicles park or wait on highway north of Chistles Lane. The effect of this is that vehicles turning in off the B3153 cannot enter Queen Street, they may get one car-length in at which point another vehicle can come out with difficulty, and after this, vehicles are queuing in both directions.

It should be noted that, when this situation occurs, Queen Street can carry LESS traffic than usual as vehicles are caught in a log-jam. This is not uncommon in congested situations and has the effect that, at the very moment when demand for movement through Queen Street is at its highest, the capacity of Queen Street to handle this is at its lowest.

Vehicles queueing to turn into Queen Street must wait on the B3153, which at best introduces delays here and at worst creates a hazard for traffic on the main road. Vehicles waiting to turn in are blocked by vehicles in the narrow section of Queen Street and must wait for the entire queue to clear, and whilst they are waiting more vehicles join the back of that queue. Generally, a driver joining the back of the queue to leave Queen Street cannot see that there is a problem at the junction. This situation prevails until there are no more vehicles to join the back of the queue and the queue clears.

The issue particularly arises around the start of the school day but is never far from the surface, this occurs for several reasons, one is that the system is already close to capacity, especially for parking and dropping off, another is that while traffic figures are per hour, most of this extra traffic actually occurs in a period of less than 20 minutes. It should also be noted that some of the school traffic does not appear on Chistles Lane at all with cars parking on Queen Street.

Whilst the original report cited 33 vehicle trips as the possible cause of the congestion, we do not yet know how few trips would tip the balance. The figure of 33 is based on the difference between the flows on Chistles Lane in the AM and PM peak, and the observation that the AM peak is the worst, but the difference may be down to other factors such as a more concentrated peak in school traffic in the AM period, and it could be that a lower number of trips concentrated in a short period would have the same effect in causing this problem.

The issues resulting from this are complex and nuanced. This relates to the width of Queen Street as two vehicles cannot pass each other and as a result a vehicle turning into Queen Street is quickly blocked by ones waiting to come out. At school drop off time (and possibly at other times) this leads to a queue back to the B3153 and vehicles waiting on the main road to turn into Queen Street and in some instances being delayed in proceeding westwards along the main road. In addition vehicles were occasionally

observed to mount the kerb in an effort to make progress along Queen Street, presenting a potential hazard to pedestrians, given the narrow width of the footway at this point.

Solutions to the present situation are likely to involve nuanced adjustments to the road layout and demand management for school traffic as the extra trips generated at the start of the day make a major contribution to the problems here.

However, that only deals with existing traffic – what is clear from this analysis is that the capacity of Queen Street to take any further traffic is extremely limited. Additional traffic would have two impacts:

The existing situation would be made worse with longer queues and taking longer to clear. This is not just a matter of queue length but also the potential that vehicles would not be able to leave Chistles Lane if there were significant queues on Queen Street.

The congestion described at the start and end of the school day would start to occur at other times too.

As noted above it is a remarkably small addition in traffic flow that causes a significant issue at the school and surrounding it. There are several factors to this:

- *The vehicles are mostly dropping off or picking up, and need only to stop briefly, thus the period of traffic is short but intense*
- *Vehicles that have just dropped children off meet others on their way to do so on the narrow section of Queen Street causing congestion.*
- *Because of the very short stay drivers are often inconsiderate in their parking*
- *The only available car park is beyond the school, so parents attempt to drop children before reaching the car park.*
- *Chistles Lane is a cul-de-sac and as a result these vehicles need to travel both ways along it.*

It is unlikely that parents can be completely discouraged from bringing their children to school by car and thus this situation needs to be resolved through management.

Safety at the junction of Queen Street, Church Street and Common Lane

This junction is unusual in that the priority route through the junction is not the straight on route through it. To add to this, Common Lane is too narrow for two vehicles to pass immediately to the east of the junction and thus the priority route has a sharp bend leading to a narrow section. This would be problematic even without the presence of another road at this location. There is no accident record here, but the STATS19 only records injury accidents, and even during our brief site visit one driver was required to brake hard on encountering another vehicle, and a safety audit would identify the width and forward visibility as issues. Consideration is needed of how to improve this situation ideally within the present highway limits. Altering the priority of the junction may be an option.

Safety at the junction of B3153 and Barton Road

The principal issue here is speed on the main road (the B3153). It is identified that vehicles enter the 30mph limit travelling significantly faster than this and have not slowed down upon reaching this junction. There would be benefits in terms of compliance with speed limits if 40mph buffer limits were added to slow traffic down before the 30mph limit is reached.

Congestion around the village store

The village store is a popular asset for the village and understandably attracts a significant passing trade, indeed the store's location on the B3153 is in part reason for its success and survival. This attracts parked vehicles, often only for a short period of time whilst the driver or a passenger visits the store. There is no off-street parking and on-street parking is limited. As a result, there are instances of drivers parking inconsiderately and presenting an obstruction to traffic and/or an obstruction or danger to pedestrians. Occasionally vehicles are observed to park on the double yellow lines immediately to the west of the Queen Street junction, blocking visibility in that direction for drivers wishing to turn out of Queen Street and making this manoeuvre hazardous. The vitality of the store is dependent upon the ability to attract passing trade and thus any solutions proposed to this issue must be sensitive to the needs of the store, for whilst it is a private business it is also an asset to the community.

Whilst we initially identified the traffic related to the school, the junction of Queen Street with the B3153, and the congestion around the village store under separate headings, they are close enough to each other that the solutions to these issues are expected to be linked and a single "village core" package of measures may be appropriate.

Conclusion on data

The above is a summary analysis of the traffic conditions identified and the issues that arise. Four areas of concern have been identified that the Parish Council will be seeking to address. Of these, the issues surrounding "the school run" are the most complex to resolve and will take a variety of measures.

Whilst it may be appropriate to consider the impact of development proposals within Keinton Mandeville as any additional traffic may exacerbate the issues identified above or create new issues, this is beyond the scope of the current fee agreement but, if the Parish Council are interested, could be commissioned as a follow-up piece of work to be undertaken once this report is finalised.

Options for improvements

The following section looks at any measures that might be taken within Keinton Mandeville to reduce the speed of the traffic and deliver a safer environment, including:

Traffic signals;
Vehicle activated signs / Speed Indicator Devices;
Traffic calming - chicanes;
Traffic calming – speed cushions;
White lining, coloured surfacing, and signing (traffic management measures);
Improvement of pedestrian access; and
Street Lighting.

Traffic Signals

Elsewhere on the B3153 at Lovington there is a set of traffic signals that controls access and manages movement through a narrow section of road. However, such solutions are not favoured now, if the Lovington signals were not already present it is doubtful they would now be installed. Aside from the capital cost there is an ongoing annual monitoring and maintenance cost - the M&E costs for signals are of the order of £45,000 per stop line, plus annual maintenance.) In highway management traffic signals would be seen as a solution of last resort and only used if a safe layout could be achieved. Given the poor geometry of the B3153, lack of street lighting, and the number of accesses and side roads which

would all have to be signalled individually it is not at all likely that the County Council would agree to their installation.

Vehicle Activated Signs / Speed Indicator Devices

Vehicle activated signs (VAS) have been developed to address the problem of inappropriate speed where conventional signing has not been effective.

There is an established relationship between vehicle speeds and road accidents. On rural roads, driving too fast for the conditions is more likely to be a factor in accidents than exceeding the speed limit. Encouraging drivers to adjust their speed to suit the conditions is particularly important, since driver error is the major contributory factor in 95 per cent of accidents. A range of rural road safety engineering measures, including vehicle activated signing, has been developed to encourage drivers to approach hazards such as bends and junctions at a safe speed, and to encourage them to comply with the speed limit, e.g. through villages. Drivers exceeding a set threshold speed trigger a sign indicating the specific hazard or the speed limit. This may be accompanied by the message “SLOW DOWN”.



Image 1: Typical speed indicator device

A study of the effectiveness of over 60 installations on rural roads in Norfolk, Kent, West Sussex, and Wiltshire has been conducted by TRL for the Department for Transport. The trial assessed the effect of the signs on speed and on injury accidents, and drivers’ understanding of the signs (TRL Report 548 Vehicle activated signs – a large scale evaluation). The signs appeared to be very effective in reducing speeds, particularly those of the faster drivers who contribute disproportionately to the accident risk, without the need for enforcement such as safety cameras. In the study, a substantial accident reduction was demonstrated.

Keinton Mandeville already has a single, movable Speed Indicator Device but, given the evidence from other areas and locations consideration could be given to establishing more, permanent fixtures. Due to the expense of installing these devices County Councils will normally only consider areas where it has been clearly demonstrated that there is a history of accidents involving personal injury. However,

Somerset County Council recently employed a softer approach to their policy for the installation Speed Indicator Devices (SID) and they were used in rotation around the County to late 2017.

SC are however no longer able to provide a community mobile SID programme. They are, however, still prepared to support local communities that wish to purchase and manage the mobile SID signs themselves and welcome the opportunity to work with Town/Parish Councils to identify suitable locations and equipment as well as ensuring any sign's safe installation and operation on the County's road network. Indeed Keinton Mandeville has been making use of these signs.

Any persons installing these signs will need to be qualified to the relevant standard and accredited to work on the highway; including wearing appropriate personal protective equipment. The relevant training is known as Chapter 8, which refers to [Chapter 8 of the Traffic Signs Manual](#), signing, lighting and guarding. There are providers who deliver the course within the County and an internet search will identify these training providers. Public liability insurance would also be required and employer's liability insurer to cover the installer(s).

The Council has previously only endorsed the use of SIDs that display the posted speed limit when activated, and this is still the Traffic Working Group's preferred position, however they have listened to feedback and are now able to consider signs displaying the actual vehicle speed; up to no more than 10 miles per hour above the actual speed limit; for those communities who wish to use the signs in this way.

Traffic Calming – Humps, Cushions, Chicanes and Narrowings

Traffic Calming refers to a system of horizontal and vertical deflection which slows vehicles down. Such features can only be provided where an adequate system of street lighting is in place.

Speed reduction is often achieved through the provision of vertical or horizontal traffic calming features. Vertical features include speed cushions or flat top road humps. Horizontal deflections may be made by means of carriageway narrowings or chicanes or other deflective give-way designs. All such features must be clearly lit to provide sufficient conspicuity.

The photographs below (images 2-4) show examples of horizontal traffic calming, these also relies on balanced two-way flows of traffic along a road. Where traffic flows are low these have reduced impact.



Image 2: Priority over oncoming traffic as part of traffic calming



Image 3: Priority over oncoming traffic as part of traffic calming



Image 4: Give way to oncoming traffic as part of traffic-calming

The dimensions and spacings of features would have to be designed to cater for emergency services - speed cushions can be straddled by ambulances and fire engines. However, they can also be straddled by any other wider vehicle such as vans or HGVs. Their effectiveness is usually down to a combination of oncoming traffic and on-street parking interrupting the smooth flow of traffic in urban areas. Any features would have to consider the positions of all side roads and private accesses to enable villagers to go unimpeded about their daily lives. More details on traffic calming can be found in the CIHT Traffic Calming Guidelines document, in Local Transport Note 1/07, and in the Traffic Advisory Leaflets (TALs) 04/94 and 10/00.

Build-outs in this form can also serve to identify and protect parking bays: this reallocates road space reducing speed and formalising on street parking.

Image 5 shows a form of vertical deflection in the form of speed cushions: these are less intrusive than speed bumps as drivers can, with care, straddle them minimising the hump effect but still having to slow down.

Photo of a Typical set of speed cushions, an example of vertical traffic calming, with associated street light and road markings (cushions are typically 75mm high):



Image 5: Speed cushions. Note the presence of street lighting in a rural setting

White Lining, Coloured Surfacing and Signing

These measures are aimed at changing and managing drivers' perceptions of the highway, by using road markings and signage to enforce patterns of behaviour. Coloured surfacing, used sparingly, can emphasise the shared environment that a road is passing through, road markings can focus traffic within the carriageway or change priorities and signage further help convey the message that the environment is shared with village life.

One form of white lining slightly outside the above is use of roundels on the highway surface to reinforce change of speed limits. These can be very effective in enhancing the effectiveness of signs where speed limits change.

Improvement of Pedestrian Access and Enhancing Pedestrian Safety

There is a desire to enhance pedestrian safety and enable pedestrians to make safe transit from A to B in the village. In addition to other measures which will improve pedestrian safety the widening of key footways within the village, reallocating carriageway space to pedestrians would facilitate pedestrian movements where the existing footways are too narrow for pedestrians to pass or for those using double buggies, wheelchairs, or mobility scooters.

Measures for Community Involvement

This is about local people doing what they can especially where the issue is capable of private intervention, such as trees and hedges on third party land encroaching onto footways. Volunteers must be aware to consider any necessary permissions and safety protocols

The Parish Council could consider undertaking Community Speedwatch – local volunteers can be trained in the use of a speed gun, monitor speeds at a location, and drivers can be sent educational letters if they exceed a safe speed. More information can be found at:

<https://www.communityspeedwatch.org/>

Measures for the Local Highway Authority, Somerset Council, to Consider:

We are aware the lobbying the Highway Authority has not been effective to date, however it will be necessary for this to continue and the case to be made. It should be noted that the Authority are seldom resistant to improvements that meet local needs if alternative funds can be found, the most obvious and largest example of this being the improvement works in the centre of Frome where the market place has been enhanced and partially pedestrianised, coloured surfacing introduced and the speed limit reduced to 20mph.

Highway engineering and traffic management installations may be larger works or packages of small works that need contractors certified to work on the Highway. Accredited highway contractors use trained and tested operatives to do works safely; they must use appropriate Chapter 8 signing (in 3 parts – part of the Traffic Signs Manual which can be found at:

<https://www.gov.uk/government/publications/traffic-signs-manual>

Proposals

The report now looks at measures to tackle the issues in each area. These are dealt with as follows:

- Village core – shop, Queen Street/B3135 junction and Queen Street/Chistles Lane
- Queen Street/Common Lane/Church Lane junction
- Speeds on B3153

Village core – shop, Queen Street/B3135 junction and Queen Street/Chistles Lane

We have merged these three areas into one proposal as they adjoin each other, any measures in one location will impact the adjacent one and, in some instances, suitable measures will extend into the adjacent area, and by combining the three, a more coherent approach can be taken.

The first proposal is for a 20mph limit extending along the B3153 from west of the shop frontage to the junction of the B3153 with Queen Street. In practice 20mph limits need to have clearly defined start and end points and are normally considered where average speeds are already below 24mph. We do not have ATC speed data near the village shop but think it is likely that to achieve the reduced speeds some form of intervention would be necessary such as road markings, increased pavement width (to narrow the carriageway) and build outs to protect on-street parking from passing traffic. These in turn would enhance the village centre feel.

On the B3153 the exact limits of the 20mph limit would need to be determined, but within these limits a change of surface colour, the use of roundels at the start of the speed limit, and the widening of pavements especially between Queen Street and the village shop would encourage lower speeds and enhance the experience for pedestrians. Where on-street parking in this area must be accommodated the use of build-outs at each end to identify the dedicated spaces and guide traffic round them. Overall this reallocation of road space will help bring traffic speeds down. Within this the role of cycling within the village might also be considered as the village shop is one obvious destination for utility cycling.

Much of Queen Street between the B3153 and Chistles Lane is not wide enough for two-way traffic but wider than it needs to be for single lane traffic. The pavement is also narrow, in some locations too narrow for a double buggy, wheelchair or mobility scooter. Along this length the pavement could be widened into the carriageway whilst still allowing enough width for single file traffic. This would improve pedestrian facilities and promote walking within the village and would also reinforce the single lane character of the road. It is not possible to increase the capacity and thus the goal should be to manage the use of the highway and reduce the feeling of vehicle domination. It would be sensible to extend the 20mph limit along Queen Street and into Chistles Lane past the school.

It may be appropriate to consider priority for one direction on Queen Street although the proximity of the narrow section to the junction with the B3153 may make this impractical.

Summary

- Use surface colour to change driver perception of village core, especially on the B3153
- Explore 20mph speed limit
- Widen footway on B3153 between Queen Street and village store
- Widen footway on Queen Street between B3153 and Chistles Lane.

Queen Street/Common Lane/Church Lane junction

The issue here is that the dominant flow follows the stem of the T rather than being along the straight route through the junction. This would not be an issue if all the roads leading to the junction were of adequate standard, but they are not, and in particular the left-hand bend from Queen Street into Common Lane has very poor forward visibility and leads straight into a section of Common Lane that is not wide enough for two-way traffic. This would be a hazard even without the side road coming in at this point.

It should be noted that the CD123 issued by national highways, although intended for new junctions, makes the observation that layouts where the through route does not follow the straight route through the junction can lead to confusion with the risk that drivers on the minor arm do not realise that they do not have priority when travelling straight ahead. This is clearly a risk here and it is probably only the low traffic flows, coupled with only injury accidents being reportable, that mean there is no accident record here.

Changes to road markings here would assist in mitigating the hazard. The simplest solution would be to change the priority of the junction such that the straight route through the junction would be the priority route. Whilst it is convention that the main route through a junction is the one with the heaviest traffic flow, it is not a hard and fast rule and the traffic flow on all three arms is low by the standards of main roads. The only issue here may be that visibility to the left when emerging from Queen Street is poor, as this is exactly the problem that we are trying to resolve. That said, a driver at the centre of a give way line would have a better view than one on the inside of the bend, and that driver would be proceeding from a standing start which reduces the hazard. The likely road markings are illustrated on the accompanying plan (*to be provided*)

It should be noted that if there were no side road here one solution would be give-way markings and “priority to oncoming traffic” so as to force drivers to slow down and check for oncoming traffic. Changing the priority will have the same effect.

Summary

- Change priority such that traffic turning in and out of Queen Street must slow down or stop and give way to traffic on Common Lane and Church Street.

Speeds on B3153

With regards to the B3153 it is fair to comment that whilst speed is only a particular issue at the junction with Barton Road, there would be benefits in terms of amenity to those living alongside, those using the shops and other businesses and those walking alongside the road if speeds were brought down along the whole length.

We have already discussed the idea of a village core with changes to road surfacing and a 20mph limit. This would be a central point of improvements on the B3153 that could reduce speeds and make the road less vehicle dominated. Our ATC counts picked up problems with excess speed at the ends of the 30mph limit especially at the Western end. Paradoxically moving the end of the speed limits inwards, which is closer to the village centre, may help reduce speeds. At present the 30mph signs to the west of the village are beyond the natural limit of the village, and initially the road “feels like” a rural road. Much of the compliance with speed limits is based on drivers responding to their surroundings and thus the 30mph signs alone are not enough to reduce speed to 30mph or even anything close to 30mph in this instance. If the end of the limit were moved to a point where the driver perceives the road to be within the village then the signs would be reinforced, and speeds would be expected to come down.

There have also been comments about cars parked along the B3153. As already suggested elsewhere, this could be formalised with build outs that both demark and protect the parking spaces and narrow the carriageway to slow down traffic.

Summary

- Move start of 30mph limit towards village centre where road environment assists with perception and self-enforcement
- Add signs and road markings to improve compliance with limit
- Build outs to protect parking areas and narrow the carriageway

Proposals are illustrated on plans X-Y (to follow)

Costs

Village centre

Proposal	Length/unit	Unit cost	Cost
Coloured surfacing B3153 village centre	100m X 7.5m	£30 per sqm	£22,500
Signage in support	20?	£250 per sign	£5,000
Kerb realignment and footway widening B3153	100m	£50 per m	£5,000
Kerb realignment and footway widening Queen Street	100m	£50 per m	£5,000
TRO for 20mph limit		£3,000	£3,000
Total			£40,500

Queen Street/Common Lane Junction

Proposal	Length/unit	Unit cost	Cost
Removal of existing road markings and remarking	Unit	£1,500	£1,500
Signage in support	4?	£250	£1,000
Advertising/legal fees*		£3,000	£3,000
Total			£5,500

*a standard rate has been included for these although they may in practice not be needed

Changes on B3153

Proposal	Length/unit	Unit cost	Cost
Amendment to TRO for 40mph limit and amendment to 30mph limit		£3,000	£3,000
Roundels etc	4	£250	£1,000
Build outs for parking areas	4?	£1,500	£6,000
Signage in support	10?	£250	£2,500
Total			£12,500

- Note - the above costs are illustrative and have been developed without the benefit of any design having been undertaken.

Summary

Having reviewed the available data and following site visits in Keinton Mandeville, the following issues are noted:

- Speeds on the B3153 especially on the approaches to and exits from the village
- Congestion at the B3153/Queen Street junction, especially around school times
- Congestion around the village shop
- Safety concerns at the Queen Street/Common Lane Junction
- Narrow footways on Queen Street between the B3135 and Chistles Lane
- Narrow footways on the B3153 between Queen Street and the village shop

Traffic management interventions are proposed that include

- Creating a village core through coloured surfacing, road markings, wider footways, formalised parking provision and a 20mph limit
- Altered priorities at the Queen Street/Common Lane Junction
- Introduction of a 40mph buffer speed limit and reduce the length of the 30mph limit on the B3153
- Formalise parking and reduce carriageway width on the B3153

These measures are described and costed above.

This report does not specifically address additional traffic generated by new developments, but the situation on Queen Street between the B3153 and Chistles Lane, where at present problems arise with only an extra 33 vehicles in the peak hour suggest that further development accessed via Queen Street may exacerbate this problem.