



Buckinghamshire County Council

Hicks Farm Rise Traffic Calming

Feasibility Study Report

LOC18015/FEA/DOC/01

05th April 2019

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1. Introduction

1.1.1 Transport for Buckinghamshire (TfB) has been commissioned by High Wycombe County Councillor Julia Wassell to carry out feasibility study at Hicks Farm Rise, High Wycombe.

1.1.2 The initial scheme brief states:

Speeding traffic, accidents in a very specific location where there has been a fatality and 7 collisions recorded by BCC. I would like to achieve resolution to a long standing issue identified by residents and to reduce speeding in this very specific location.

Traffic calming needs implementation following resident's petition and representation from mother of deceased.

1.1.3 Various concerns have also been raised including the inability of elderly residents to cross the carriageway near the junction with Micklefield Road. These concerns have recently been followed by a fatal road incident adjacent to the existing bus laybys just north of St Hugh's Avenue.

1.1.4 Vehicles speeds have been a particular concern at this location and this has initially been seen to be a major contributory factor to various traffic incidents. As a result of this it has been requested that traffic calming measures be implemented at this location following a petition signed by many residents of Hicks Farm Rise.

1.1.5 A site meeting was held on Friday 25th January 2019 with attendance of representatives from TfB, the County Councillor Julia Wassell.

1.1.6 Mrs Marion Pickup was also in attendance who is the mother of David Pickup who was tragically killed on Hicks Farm Rise in January 2017.

1.1.7 The aim of this study is to examine the need of traffic calming measures to reduce vehicular speed and suggest any available options.

2. Existing Site Characteristics.

2.1.1 Hicks Farm Rise is a single carriageway road through a densely populated residential area and is widely used as a 'short cut' between the A40 London Road and Hatter's Lane.

2.1.2 There are numerous side roads and residential frontages with accesses along its length. Several bus laybys are in existence, which give the impression of the carriageway being of greater width at these locations.

- 2.1.3 The speed limit is 30mph to the extents of Hicks Farm Rise and the surrounding roads although it is generally perceived that the actual speeds of vehicles can at times be significantly higher.
- 2.1.4 King's Wood School is the closest associated school at the top of Hicks Farm Rise and this will generate a considerable movement of vehicles during the morning and evening 'drop off' and 'pick up' periods.
- 2.1.5 There is also a petrol station and a Tesco Express which are located at the junction of Micklefield Road and Hatters Lane respectively and would appear to encourage a proportion of traffic to use Hicks Farm Rise.
- 2.1.6 There are various areas of Hicks Farm Rise which have much inclination and curvature and this could be seen to be a factor in encouraging an increase in vehicular speeds particularly in these areas.
- 2.1.7 It may also be the case that vehicles travelling up Hicks Farm Rise may tend to travel at greater speeds to gain momentum. Vehicles travelling down Hicks farm Rise may tend to 'free wheel' or 'coast' which may also cause an increase in vehicle speed.
- 2.1.8 Like most Urban roads in the area, Hicks Farm Rise is visibly more busy during peak periods. It is often the case that when more vehicles are present, associated speeds are lower.
- 2.1.9 Hicks Farm Rise is also a bus route for the 39 and 39A services. The services run every 30 minutes in the morning till mid-day and at various times in the afternoon.

3. Existing Traffic Calming Measures.

- 3.1.1 Various methods of traffic calming already exist on Hicks Farm Rise.
- 3.1.2 These mainly include small kerbed islands with lit bollards within the centre of the carriageway with corresponding areas of central hatching. These existing features are intended to reduce the available width of carriageway and therefore encourage motorists to drive more cautiously.
- 3.1.3 Along Hicks Farm Rise are 5No pedestrian refuges islands to assist pedestrians crossing the carriageway. These refuges also act as traffic calming features by visibly restricting the available width of the carriageway. The pedestrian refuges could be seen to be more of an effective traffic calming feature than the small kerbed islands mentioned above but in themselves would probably not cause any significant reduction in vehicular speed.
- 3.1.4 It may be the case that the combination of these existing traffic calming features have already caused a minor reduction in vehicular speeds.

4. Existing Site Condition Survey.

- 4.1.1 A site visit was undertaken by TfB to assess and review the location and condition of the existing carriageway features including carriageway pavement, footways, street lighting and drainage
- 4.1.2 The location and condition of these features can have a major effect on what traffic calming measures can be implemented.

5. Casualty Data

- 5.1.1 A summary of the reported 10 years reported injury collision record along Hicks Farm Rise is included within Appendix A.
- 5.1.2 Figure 1 shows the locations of these injury collisions.

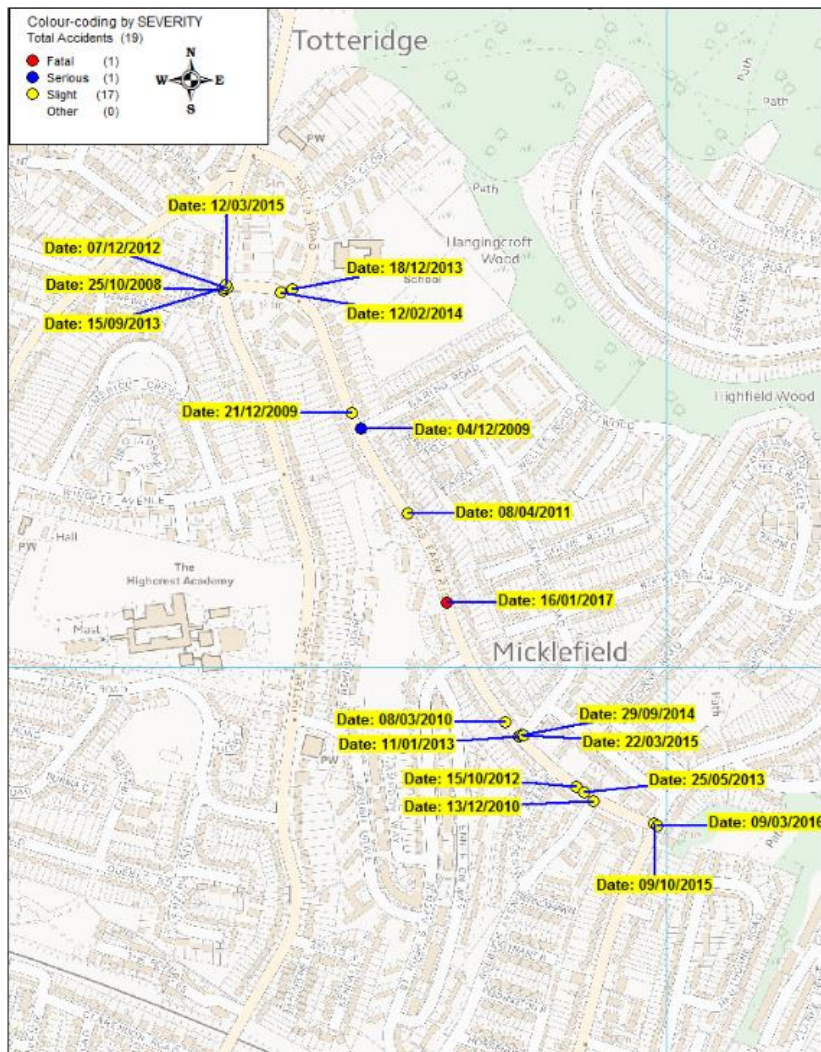


Figure 1
Hicks Farm Rise – recorded injury collisions from 2008 to 2018

- 5.1.3 It is interesting to note that most collisions appear to have occurred in the vicinity of existing junctions these being areas where vehicle paths would conflict the most. It is possible that vehicle speeds could be a contributory factor to the collisions at these existing junctions.
- 5.1.4 The Network Safety Team's method of identifying sites for potential casualty reduction remedial measures funding is to review all reported injury collisions which have occurred within the last 5 year period, in order to identify those sites and routes that have the highest collision rate and casualty severity. They look at routes across the whole of the county and rank these routes by the rate of collisions per km that have resulted in a road user being Killed or Seriously injured (KSI rate per km). They also carry out a search for collision sites that have a history of 5 or more collisions (of any severity) within a 50m radius within the last 5 years.
- 5.1.5 Hicks Farm Rise does not currently meet this criteria and does not feature in the applications for funding as part of the 2019/20 list of potential schemes.

6. Speed Surveys

- 6.1.1 Tables 1- 4 summarise existing vehicular speed data for the locations and dates as stated along Hicks Farm Rise.

**Table 1 – Hicks Farm Rise – High Wycombe (76m Northeast of Micklefield Road)
22/04/2002 – 29/04/2002**

DAY	TIME PERIOD	Northwest bound 85% Speeds (mph)	Southwest bound 85% Speeds (mph)
7 Day Average	12 Hour Period 0700-1900	29	31
	16 Hour Period 0600-2200	29	31
	18 Hour Period 0600-2400	29	31
	24 Hour Period 0000-2400	29	31

**Table 2 – Hicks Farm Rise – High Wycombe (76m SE j/w Baring Road)
02/06/2008 – 09/06/2008**

DAY	TIME PERIOD	Northwest bound 85% speeds (mph)	Southeast bound 85% Speeds (mph)
7 Day Average	12 Hour Period 0700-1900	36	36
	16 Hour Period 0600-2200	36	36
	18 Hour Period 0600-2400	36	36
	24 Hour Period 0000-2400	36	36

Table 3 – Hicks Farm Rise – High Wycombe (76m SE j/w Baring Road)

11/03/2019 – 18/03/2019

DAY	TIME PERIOD	Northwest bound 85% speeds (mph)	Southeast bound 85% Speeds (mph)
7 Day Average	12 Hour Period 0700-1900	35	35
	16 Hour Period 0600-2200	35	36
	18 Hour Period 0600-2400	35	36
	24 Hour Period 0000-2400	35	36

Table 4 – Hicks Farm Rise – High Wycombe (Opposite Buckingham Alley)

11/03/2019 – 18/03/2019

DAY	TIME PERIOD	Northwest bound 85% speeds (mph)	Southeast bound 85% Speeds (mph)
7 Day Average	12 Hour Period 0700-1900	35	35
	16 Hour Period 0600-2200	35	36
	18 Hour Period 0600-2400	35	36
	24 Hour Period 0000-2400	35	36

- 6.1.2 The associated data sheets are included within Appendix B.
- 6.1.3 Existing speed data from June 2008 was obtained from two different locations along Hicks Farm Rise. These were located 76m southeast of the junction with Baring Road and adjacent to the Petrol Station near to the junction with Micklefield Road.
- 6.1.4 New speed data was compiled in March 2019 at the junction of Baring Road and a new location adjacent to the walkthrough from Buckingham Alley.
- 6.1.5 At the survey location adjacent to Baring Road and the walkthrough associated with Buckingham Drive, the 85%ile speeds indicate that most vehicles are travelling in excess of the speed limits, most travelling in the range of a 35 – 36mph 85%ile speed throughout the day.
- 6.1.6 The 85%ile speed of vehicles at both these sites were very similar for in both directions with the speed of vehicles travelling down Hicks Farm Rise marginally higher.
- 6.1.7 Vehicle speeds would also appear to be constant throughout the majority of the day with occasional vehicles travelling further in excess of the speed limit when flows of traffic are lower.
- 6.1.8 The existing 85%ile speeds are lower adjacent to the petrol station near to the junction with Micklefield Road and this may be explained by vehicles starting to accelerate away from the roundabout junction while vehicles travelling down Hicks Farm Rise will be starting to decelerate for the junction.

7. Traffic Volume

Table 5 – Hicks Farm Rise – High Wycombe (76m Southeast of Micklefield Road)
22/04/2002 – 29/04/2002

DAY	TIME PERIOD	Northwest bound flow (No)	Southwest bound flow (No)
7 day Average	12 Hour Period 0700-1900	2566	2473
	16 Hour Period 0600-2200	3102	3003
	18 Hour Period 0600-2400	3232	3119
	24 Hour Period 0000-2400	3291	3187

Table 6 – Hicks Farm Rise – High Wycombe (76m SE j/w Baring Road)
02/06/2008 – 09/06/2008

DAY	TIME PERIOD	Northwest bound flow (No)	Southwest bound flow (No)
7 day Average	12 Hour Period 0700-1900	2567	2399
	16 Hour Period 0600-2200	3069	2893
	18 Hour Period 0600-2400	3193	3012
	24 Hour Period 0000-2400	3273	3083

Table 7 – Hicks Farm Rise – High Wycombe (76m SE j/w Baring Road)
11/03/2019 – 18/03/2019

DAY	TIME PERIOD	Northwest bound flow (No)	Southwest bound flow (No)
7 day Average	12 Hour Period 0700-1900	2747	2449
	16 Hour Period 0600-2200	3214	2880
	18 Hour Period 0600-2400	3310	2980
	24 Hour Period 0000-2400	3405	3059

Table 8 – Hicks Farm Rise – High Wycombe (Opposite Buckingham Alley)
11/03/2019 – 18/03/2019

DAY	TIME PERIOD	Northwest bound flow (No)	Southwest bound flow (No)
7 day Average	12 Hour Period 0700-1900	2840	2543
	16 Hour Period 0600-2200	3313	2981
	18 Hour Period 0600-2400	3411	3078

	24 Hour Period 0000-2400	3505	3157
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- 7.1.1 Tables 5 - 8 summarise the existing vehicular traffic flow data for the locations and dates as stated along Hicks Farm Rise.
- 7.1.2 A summary of the background data is included in Appendix B.
- 7.1.3 It would appear to be the case that traffic volumes have little effect on vehicles speeds along Hicks Farm Rise apart from when flows are significantly lower such as in the evening or early hours of the morning when the resultant speeds are marginally higher.

8. Informal Parking Surveys

- 8.1.1 As previously discussed both perceived and actual restrictions in carriageway width often have the effect in reducing vehicular speed along a certain length of carriageway.
- 8.1.2 It is also often the case that where large numbers of parked vehicles are present in and around the area of the carriageway, they can have the effect of reducing vehicular speeds as the parked vehicles are negotiated.
- 8.1.3 In order to investigate the possibility of using parked vehicles to reduce vehicular speed a parking survey was carried out indicate the number and position of parked vehicles along Hicks Farm Rise over a number of days.
- 8.1.4 If these parked vehicles can be arranged into areas of designated parking it may be possible to reduce vehicular speeds by creating width restrictions or chicanes which could induce a 'give / take' scenario.
- 8.1.5 Arranging the vehicles in this manner would only be effective should the parked vehicles be constantly located in these areas throughout the day.
- 8.1.6 The parking at these locations would mostly be associated with residential properties so it is highly likely that there may be more vehicles present during evening / night time periods.
- 8.1.7 The surveys were carried out on various days and at various times to take into consideration different scenarios such as school 'drop off' and 'pick up' hours. It also included the identification of the location of all parked vehicles either on or off the carriageway/footway.
- 8.1.8 Of note were a significant number of vehicles identified parking on the junction of Hicks Farm Rise with Hollis Road during school 'drop off' and 'pick up' periods.
- 8.1.9 The location of all the parked vehicles are shown on each option layout as their location will also have an effect on most of the suggested traffic calming measures.

9. Option 1 – Advisory Designated Parking Areas

9.1 Overview

- 9.1.1 A preliminary assessment of existing parking has been carried out and a preliminary design layout has been developed for this option.
- 9.1.2 Drawings No LOC18015/FEA/01/01-04 rev 0 show indicative locations for possible designated parking areas and this is shown in Appendix C. A works cost estimate is also included in Appendix D.

9.2 Methodology

- 9.2.1 The methodology of choosing the location of these designated areas relies principally on the results of the informal parking surveys as already discussed.
- 9.2.2 Using the results of these surveys, the drawings show possible arrangements for parking which could be used to reduce speeds by way of an informal 'one way' chicane arrangement. To create a 'one way' chicane, carriageway widths should generally need to be reduced to less than 4.8 – 5.0m as per general guidance.
- 9.2.3 The implementation of 2 way chicanes is generally not seen to be practical due to the restriction of the existing carriageway width and the likely position and further restriction caused by adjacent parked vehicles where present.
- 9.2.4 The Department of Transport publication 'Manual for Streets '2 generally advises that a minimum footway width of 2.0m should be provided past any parked vehicles particularly if they were to be located on the footway. This is not seen to be an issue along Hicks Farm Rise due to the existing width of the footways and adjacent verge areas.
- 9.2.5 Where possible, small physical islands could be located to reinforce areas of designated parking where numbers of parked vehicles are low. However, when considering the number of accesses and short lengths of designated bays located along Hicks Farm Rise these areas could be problematical and be confusing to road users.
- 9.2.6 The proposed location of areas of proposed parking spaces must be located carefully to avoid any conflict with existing features such as junctions, private properties accesses and Bus Stops so as not to create further hazards.
- 9.2.7 The effect of the extent of traffic flow on the ability for the chicane to reduce speeds is also discussed within Traffic Advisory Leaflet (TAL) 12/97. In general, the advice appears to indicate that the 'normal' working 2 way traffic flows for one way chicanes are in the region of 3,000 – 4,000 vehicles per day and 7,000 for two-way chicanes.

- 9.2.8 The traffic flows as recorded with Appendix B indicate that the '2 way flow' flows along Hicks Farm Rise are in the region of 5000 – 7000 vehicles a day being higher than that which is recommended for one way chicanes.
- 9.2.9 The option to provide designated areas of parking would require an informal consultation to gauge public perception regarding the proposals. If no small physical islands were located to reinforce these areas of designated parking restrictions were placed on the parking areas and they were advisory only, no statutory consultation would be required.
- 9.2.10 If this option were chosen, it would be important that the benefits of the scheme are well communicated to encourage locals to park within bays, as there would be no enforcement if cars parked legally beyond the bays.

9.3 Site Walkthrough - Hatter's Lane to Hollis Road.

- 9.3.1 It has been noted that several cars park on both corners of the Hicks Farm Rise junction with Hollis Road during school pick up times. This general arrangement of parking was identified on all parking survey visits.
- 9.3.2 It has been noted that bollards have been placed within the northern verge adjacent to the pedestrian refuge due to excessive parking on the verges within this area. These bollards would have also been installed to protect the required vehicular movements around the existing pedestrian refuge within this area.
- 9.3.3 There is no opportunity to provide designated areas of parking within this region of Hicks Farm Rise to reduce vehicular speeds due to the presence of the entrance to Tesco Express, the existing pedestrian refuge and the existing carriageway junctions.

9.4 Site walkthrough – Hollis Road to Baring Road

- 9.4.1 There are a small number of areas within this section which could be used to provide designated areas of parking as illustrated, however due to the low numbers of parked cars on the carriageway it is doubtful that this arrangement would have any effect on vehicular speeds.
- 9.4.2 Although vehicles park partly on the footway outside these houses, minimum footway width requirements would still be maintained and a narrower carriageway width achieved. This could be as low as 4.8m so enforcing a 'give and take' arrangement.
- 9.4.3 There are numerous accesses, an existing pedestrian refuge and bus laybys within this area which severely restrict any proposed areas of designated parking.

9.5 Site walkthrough – Baring Road to St Hugh’s Avenue

- 9.5.1 It was noted that a small number of vehicles were parked on the carriageway throughout this length with most being near to the junction with Baring Road.
- 9.5.2 Although these vehicles reduce the width of the carriageway when parked at this location, it is unlikely that this action will help to reduce the speed of passing vehicles unless the parking is moved wholly onto the carriageway and the width reduced to 4.8m to enforce a ‘give and take’ arrangement.
- 9.5.3 It is doubtful whether these small number of parked vehicles would have any effect on vehicular speeds in this section.

9.6 Site walkthrough - St Hugh’s Avenue to Gayhurst Road

- 9.6.1 It has been observed that a small number of vehicles park on the carriageway in this area outside No 60 and could be located to enforce a ‘give and take’ arrangement if moved wholly onto the carriageway.
- 9.6.2 These vehicles were however not noted to be parked at this location on each visit so this arrangement could be ineffective for significant periods of the day.
- 9.6.3 It was noted that there was an absence of vehicles parked on the remaining length of this section and there is also an existing pedestrian refuge present which would limit any further proposed areas of designated parking.

9.7 Site walkthrough - Gayhurst Road to Misbourne Avenue

- 9.7.1 Vehicles were occasionally noted parking outside Saunders Court.
- 9.7.2 However the position of an existing pedestrian refuge present which would limit any proposed areas of designated parking within this area.

9.8 Site walkthrough - Misbourne Avenue to Roebuck Avenue

- 9.8.1 There are ‘off carriageway’ parking bays within this section of Hicks Farm Rise and only one vehicle was observed to be parked on the carriageway.
- 9.8.2 The arrangement of designated areas of parking at this location would be undesirable mainly due to manoeuvrability associated with the adjacent ‘off carriageway’ parking bays which may cause difficulty for passing vehicles.

9.9 Site walkthrough - Roebuck Avenue to Micklefield Road

- 9.9.1 No vehicles were observed to be parked on the carriageway in this section so there would be little or no benefit in providing areas of designated parking as they would most probably not be used.
- 9.9.2 There is also a pedestrian refuge and access / egress for the petrol station which would cause issues with manoeuvrability for passing vehicles.

9.10 Potential issues.

- 9.10.1 For these areas of potential parking to work effectively and for opposing areas of parking to act as chicanes, cars would ideally be required to park within the designated areas only. This would be difficult to achieve without extensive parking restrictions which may be undesirable at this location.
- 9.10.2 Whilst these parking arrangements may work effectively during periods where a large numbers of parked vehicles are present, when less vehicles are parked this feature will become less effective and may result in little or no reduction in speeds. As discussed, physical islands could be introduced to reinforce these areas at times when few vehicles are parked but they would need to be located frequently along the carriageway and may be confusing to motorists.
- 9.10.3 Traffic Advisory leaflet 12/97 'Chicane Schemes' discusses the effect of such arrangements on existing traffic speed. Generally, the length of the stagger provided between the proposed parking areas would be well in excess of what is recommended to cause a significant reduction in speed. Any reduction in this stagger length to reduce speeds will begin to foul accesses, junctions and bus laybys and could move vehicles away from already established parking areas.

9.11 Comparison with Wexham Street, Wexham Park.

- 9.11.1 As part of this feasibility study, a comparison of an existing series of on carriageway designated parking bays on Wexham Street, Wexham is discussed below.
- 9.11.2 3No bays were installed along Wexham Street of approximately 30metres in length with intermediate spacing of 42metres and 20metres respectively.
- 9.11.3 A traffic count carried out at Wexham Street in March 2004 gave peak southbound flows of 570 vehicles in the am peak and peak northbound flows of 417 vehicles in the pm peak. It is interesting to note that the flows were not balanced with the am peak 570 southbound and 200 northbound vehicles and pm peak 258 southbound and 417 northbound vehicles.
- 9.11.4 At Hicks Farm Rise, the various peak flows are generally more balanced in both directions and generally lower with less extreme 'peaks' than Wexham Street.

- 9.11.5 The carriageway speed limit is 40mph / 30mph at Wexham Street / Hicks Farm Rise respectively. The 85thile speeds at Wexham Street and Hicks Farm Rise can occasionally be well in excess of the expected speed limits.
- 9.11.6 It is understood that the designated parking bays were recently removed due to issues to congestion.
- 9.11.7 It is felt that the reasons why the designated bays did not work at this location can be primarily attributed to the higher speed limit / peak flows and greater volume of traffic. The unbalanced peak flows in each direction may also have a negative effect.
- 9.11.8 At Hicks Farm Rise, lower speeds combined with generally lower peak flows and a lower volume of traffic/ balanced flows would be better suited to these formalized areas of parking

10. Option 2 – Chicanes/Build-out's with Priority Working.

10.1 Overview

- 10.1.1 A preliminary assessment of existing parking has been carried out and a preliminary design layout has been developed for this option.
- 10.1.2 Drawings No LOC18015/FEA/02/01-04 rev 0 show indicative locations for possible Chicanes / Build-Out's and this is shown in Appendix E A works cost estimate is also included in Appendix F.

10.2 Methodology

- 10.2.1 The methodology of choosing the location of the chicanes / buildouts relies partially on the results of the informal parking surveys so as not to create conflicts with parked vehicles.
- 10.2.2 The drawing shows possible arrangements for 'one way' chicanes / build-outs, incorporating a formal 'give and take' arrangement.
- 10.2.3 In practise the arrangement of the buildouts would be to prioritise both directions of flow so as to reduce speeds in both directions.
- 10.2.4 As outlined with Option 1, the implementation of 2 way chicanes at this location is generally not seen to be practical due to the restrictive width of the existing carriageway and the likely position and further restriction caused by adjacent parked vehicles.
- 10.2.5 The Chicanes / Buildouts have been situated away from areas of conflict such as Bus Stops / junctions and are carefully selected so as not to cause issues with access to adjacent properties.

- 10.2.6 To enforce the one way working at the chicanes / buildouts the carriageway width has been reduced to 4.0m and with the relevant signage and markings, a 'give take' arrangement will be enforced. A proposed width of 4.0m will allow cyclists to pass with relative safety if another vehicle is present. It is general guidance that widths of between 3 to 4m adjacent to kerbs street furniture, etc., should be avoided so as to prevent indecision of vehicles passing cyclists.
- 10.2.7 This arrangement of chicanes / buildouts can sometimes be enhanced by the inclusion of a speed cushion within the area of restricted width to further regulate speeds. This is an option that may be considered especially at times of low vehicle flow.
- 10.2.8 As with Option 1, the effect of the extent of traffic flow on the ability for the chicane to reduce speeds (TAL 12/97) has already been discussed.
- 10.2.9 Parking close to a build-out can disrupt the flow of traffic and cause a safety concern. Therefore it is recommended to introduce no waiting at any time (double yellow lines) restrictions to prevent parking. The plans show the recommended extents of such restrictions next to each build-out.
- 10.2.10 This option would require an initial informal consultation to gauge public perception regarding the proposals. An additional formal statutory consultation would then be required to be carried out to formalize any physical islands / associated waiting restrictions.
- 10.2.11 As part of this exercise, it has also been assumed that the existing refuge islands will not be considered for conversion into chicane / buildouts. This is due to the perception that the combination of a chicane / build out traffic calming feature and a pedestrian crossing point could be deemed to be confusing to the motorist and create additional hazards.
- 10.2.12 It has also been assumed that as there is a good system of street lighting, individual street lighting columns will not need to be placed in the vicinity of each chicane / build-out. It is however assumed that lit signage will be provided on each feature as per normal guidance.

10.3 Site walk through - Hatter's Lane to Hollis Road.

- 10.3.1 It would not be advisable to install chicanes/ build outs within this section of carriageway due to the proximity of the junctions at Hatters Lane /Hollis Road along with an existing pedestrian refuge and the access for Tesco Express.

10.4 Site walk through – Hollis Road to Baring Road

- 10.4.1 It is possible to install chicanes / build outs within this section of carriageway although the proximity of the junctions at Hollis Road /Baring Road along with an existing pedestrian refuge, vehicles parked on the carriageway and the existing bus stops limit the locations for such a feature to be installed.

10.4.2 As indicated on the drawings it would be possible to install such a feature uphill of the junction with Baring Road without effecting its operation. This would also be located so as not to interfere with the operation of the existing bus laybys.

10.4.3 The location of the chicane / buildouts in this area would require some parked vehicles to park elsewhere but this is not seen to be a major issue.

10.5 Site walkthrough – Baring Road to St Hugh’s Avenue

10.5.1 It would be possible to install chicanes / build-outs in this area of Hicks Farm Rise and these may be effective at reducing vehicular speeds.

10.5.2 There appear to be 2No possible locations and these could be effective at reducing vehicular speeds within this area.

10.5.3 The chicanes / buildouts are proposed to be located where visibility is good in both directions and away from the areas of the bus stop laybys.

10.6 Site walkthrough - St Hugh’s Avenue to Gayhurst Road

10.6.1 It would be possible to install chicanes / build outs within this section of carriageway but these would need to be located away from the existing pedestrian refuge.

10.6.2 The location of the chicane / buildouts in this area would require some parked vehicles to park elsewhere but this is not seen to be a major issue.

10.7 Site walkthrough - Gayhurst Road to Misbourne Avenue

10.7.1 It would not be possible to install chicanes / build outs within this section of carriageway as they would be in close proximity to the existing pedestrian refuge and junctions.

10.8 Site walkthrough - Misbourne Avenue to Roebuck Avenue

10.8.1 It would be difficult to install chicanes / build outs within this section of carriageway working around the area of existing ‘off carriageway’ parking and corresponding issues with manoeuvrability.

10.9 Site walkthrough - Roebuck Avenue to Micklefield Road

10.9.1 It would not be possible to install chicanes / build outs within this region due to the close proximity of a pedestrian refuge and entrance to the Petrol Station.

10.10 Potential Issues

- 10.10.1 For the chicanes / build outs to work effectively cars would be required to park away from these areas. Parking restrictions therefore need to be applied, which may sometimes be ignored without enforcement. Residents may also object to the restrictions on parking that these areas suggest.
- 10.10.2 In times of low vehicular flow, Chicanes / buildouts may have little or no effect vehicle speeds.

11. Option 3 - Raised Tables / Speed Cushions

11.1 Overview

- 11.1.1 A preliminary assessment has been carried out and a preliminary design layout has been developed for this option.
- 11.1.2 Drawings No LOC18015/FEA/03/01-04 rev 0 show indicative locations for possible Raised Tables / Speed Cushions and this is shown in Appendix G A works cost estimate is also included in Appendix H.

11.2 Methodology

- 11.2.1 It is felt that it may be beneficial for this option to provide a combination of raised tables and speed cushions along Hicks Farm Rise.
- 11.2.2 It would not be proposed to install raised tables at every junction as this would be thought to be excessive but the location of intermediary speed cushions would provide a complimentary reduction in vehicular speeds.
- 11.2.3 Regarding the installation of speed cushions, at the preliminary design stage it is assumed that an approximate spacing of 50 - 60metres should provide the necessary reduction in vehicular speeds. Actual spacing would be confirmed during the detailed design process.
- 11.2.4 It has initially been assumed as this is a bus route a standard width of 1.6m would be adopted. The emergency services would also be able to pass the cushions without being impeded.
- 11.2.5 Traffic Advisory Leaflet (TAL) 12/97 states:
For the narrower cushions (1.6m), spacing in the region of 60m to 80m would normally be required to ensure 85%ile speeds of 25mph or 30mph.
- 11.2.6 It has been initially assumed that the existing street lighting provision should be acceptable for the location of the raised tables and this approximate spacing of speed cushions.

11.2.7 Formal consultation would be required before proceeding with this option. However, it is recommended that an informal consultation is carried out to gauge local resident's perception about this proposal followed by a formal consultation to formalize their location.

11.2.8 This option may provoke considerable opposition from residents as vehicular noise may increase due to the increased braking and acceleration of vehicles as they pass each location.

11.3 Site Walkthrough - Hatter's Lane to Hollis Road.

11.3.1 There would be an opportunity within this section to locate a pair of speed cushions between the entrance to Tesco Express and the existing pedestrian refuge.

11.3.2 It is considered at this stage that the junction of Hollis Road / Hicks Farm Rise would not require a raised table due to possible lower vehicular speeds in this area.

11.4 Site walkthrough – Hollis Road to Baring Road

11.4.1 With the assumed required spacing there would be an opportunity within this section to locate 2No pairs of speed cushions so as not to compromise the movements of buses coming in and out of the adjacent laybys.

11.4.2 It would be proposed to install a raised table at the junction of Baring Road to regulate speeds within this area. This would also have the effect of reducing approach speeds in all directions and reducing the possibility of incident collisions.

11.5 Site walkthrough – Baring Road to St Hugh's Avenue

11.5.1 With the assumed required spacing there would be an opportunity within this section to locate 4No pairs of speed cushions so as not to compromise the movements of buses coming in and out of the adjacent laybys.

11.5.2 It would be proposed to install a raised table at the junction of St Hughes Avenue to regulate speeds within this area. This would also have the effect of reducing approach speeds in all directions and reducing the possibility of incident collisions.

11.6 Site walkthrough - St Hugh's Avenue to Gayhurst Road

11.6.1 With the assumed required spacing there would be an opportunity within this section to locate 2No pairs of speed cushions.

11.7 Site walkthrough - Gayhurst Road to Misbourne Avenue

11.7.1 With the assumed required spacing there would be an opportunity within this section to locate 2No pairs of speed cushions.

11.7.2 It would be proposed to install a raised table at the junction of Misbourne Avenue to regulate speeds within this area. This would also have the effect of reducing approach speeds in all directions and reducing the possibility of incident collisions.

11.8 Site walkthrough - Misbourne Avenue to Roebuck Avenue

11.8.1 With the assumed required spacing there would be an opportunity within this section to locate 1No pairs of speed cushions.

11.9 Site walkthrough - Roebuck Avenue to Micklefield Road

11.9.1 With the assumed required spacing there would be an opportunity within this section to locate 1No pairs of speed cushions.

11.10 Potential Issues

11.10.1 The proposed speed cushions would be 1.6m in width to allow buses / HGVs to pass while slowing the passage of most smaller vehicles.

11.10.2 The passage of motorcyclists and bicycles would not be restricted by the use of speed cushions of this size.

11.10.3 The use of full width ramps would be an alternative to the speed cushions and would slow the passage of all carriageway users. The use of these full width ramps may however, invite opposition from bus operators and the emergency services

11.10.4 The use of full width ramps would also cause issues with drainage which would need to be resolved as part of any proposed works.

11.10.5 It has therefore been assumed as part of these proposals that speed cushions will be incorporated instead of full width ramps.

12. Further Options

12.1 Vehicle Activated Signs / Mobile Vehicle Activated Signs

12.1.1 Vehicle Activated Signs (VAS) could be an option at this location and may be successful at encouraging a proportion of drivers to reduce vehicular speed.

12.1.2 It would be prudent to install a VAS for both directions of traffic flow and this could be achieved by installing a double sided VAS at a single location.

- 12.1.3 An assessment would need to be carried to determine if it would be appropriate to install a VAS sign at this location and Hicks Farm Rise would need to meet this criteria to permit a VAS to be installed.
- 12.1.4 Mobile Vehicle Activated Signs (MVAS) operate in much the same way but are portable through the displays may not be as visible as that for a VAS.
- 12.1.5 Both the provision of VAS and MVAS would act only as advisory deterrent, with some drivers who may choose to ignore the advice to reduce speed.

12.2 Permanent Safety Cameras (Thames Valley Police)

- 12.2.1 For Thames Valley Police (TVP) to give consideration of a new fixed camera site all other measures i.e. road layout changes, signing and lining modifications would have to be tried, evidenced and exhausted. Evidence that there is still a valid issue and risk would be required, a full risk based assessment would be made taking into account, collision and casualty data, any available speed data, any available Community Speedwatch data and any specific local road layout or hazards.
- 12.2.2 Any new site would have to be Local Authority funded and not guaranteed to be supported by TVP because any additional load on the current amount of existing sites would impact on camera operator time and loading regime, back office systems and workload. It should be noted no new fixed camera installations have been installed in Thames Valley since 2003.
- 12.2.3 Other options such as, education through the Community Speedwatch initiative, the use of SID (Speed Indicating Devices) and roadside enforcement by local Neighbourhood Officers and mobile speed van enforcement should also be considered as potential solutions.

12.3 Mobile Enforcement - Risk Based Assessment (Thames Valley Police)

- 12.3.1 Complaints regarding speeding will initially be dealt with by the local Neighbourhood Team or Traffic Management Officer who will make an assessment of the problem and provide an appropriate response. Responses may include a) evidence gathering through the placement of a SID (Speed Indicating Device); b) utilisation of Community Speedwatch; c) local roadside enforcement.
- 12.3.2 Community Speedwatch (CSW) is a group of (often local) volunteers who, together with a speed indicator device, provide a visible deterrent to those using a stretch of road identified through local concerns as possibly having a speeding problem. This option is about education rather than enforcement but should this local activity provide evidence of a speed problem then the location can be assessed for potential mobile camera enforcement activity.
- 12.3.3 Thames Valley Police operates an evidence and risk based assessment of all potential enforcement sites, a full assessment is made and if there is evidence of speed and a risk to

road users then camera enforcement will be considered as a potential solution, there are a number of considerations and checks made before deploying cameras, these include:

- Evidence of excessive speed from speed survey data
- Collision and casualty data
- Potential risk to road users
- Analysis of traffic data

12.3.4 Site assessment for suitability of mobile enforcement, including van placement and operational requirements

12.3.5 Effective engineering measures must also be considered such as the road layout including road humps, chicanes and tyre rumble devices, these can be implemented by Highways England and Local Authorities in situations where general speed compliance is evidenced as an issue.

12.4 Further permanent Signage

12.4.1 There is little scope to provide additional permanent signage that would deter vehicles who are travelling in excess of the speed limit.

12.4.2 It is felt that any such changes over and above what has already been provided would be of little or no benefit.

12.5 Thermoplastic Coloured Carriageway Surfacing

12.5.1 There is the opportunity to provide thermoplastic coloured surfacing to areas of Hicks Farm Rise to act as an added deterrent to motorists and this could be along the line of the central hatching of the carriageway. This could make this area of hatching more visible to motorists and highlight the lane width restrictions.

12.5.2 It is however felt that this option would be prohibitively expensive and be of little or no benefit.

13. Road Safety Audit

13.1.1 As part of detailed design a Stage 1/2 Safety Audit will be undertaken for the chosen option(s).

13.1.2 A Stage 3 Safety Audit would also be undertaken on completion of the works.

14. Cost Estimates

14.1.1 Initial budget estimates have been produced for Options 1 – 3 with assumptions as stated.

- 14.1.2 Following on from the report and the associated drawings and cost estimates for these components have been confirmed and are included within Appendices C to H.
- 14.1.3 In summary, the main Components / features of each Option are:
- Option 1 – Advisory Designated Parking Areas - Carriageway lining, etc. This has been estimated for the entire length of road where cars are present and it is physically possible to install areas of designated parking.
- Option 2 – Construction of Chicanes – kerbing, drainage, footway construction, signage, street lighting etc.
- Option 3 – Construction of raised tables and installation of speed cushions – kerbing, drainage, footway construction, signage, street lighting, etc.
- 14.1.4 For option No 3, a standard speed cushion of 1.6m width has been assumed to allow the passage of buses and emergency services unhindered. Any additional width of cushion of full width speed ramp would be subject to additional costs.
- 14.1.5 The relative simplicity of Option 1 with very little construction work involved is reflected within the cost estimate. With Option 2 and 3 however, more extensive civil works will be required.
- 14.1.6 An important common element of options 2 and 3 includes informal / formal consultations to confirm public opinion in the first instance and then confirm TRO's for the waiting restrictions / carriageway obstructions. Option 1 includes only one informal consultation
- 14.1.7 A formal consultation is carried out to implement Traffic Regulation Orders (TRO's) for areas of waiting restrictions as is necessary for legal enforcement and to allow obstructions to be placed in the carriageway, ie, chicanes / build-outs and raised tables / speed cushions.
- 14.1.8 For all options, minor carriageway works may be required to facilitate new areas of lining. If the carriageway surfaces are not of a standard to accept new lining, the areas should be repaired as part of the TfB General Maintenance Budget. However, if significant areas of carriageway require attention, the Capital Maintenance budget would need to provide funding with support from the local County Councillor.
- 14.1.9 The estimates include estimated TfB fees associated with the detailed design and implementation stages of the work as well as Stage 1/2 and 3 Road Safety Audits relating to the chosen option(s).
- 14.1.10 All costs are based upon current construction estimates from similar schemes completed by TfB. No allowance for future inflation has been made as there are no committed timescales for the scheme.

14.1.11 A contingency of 20% has been allowed for within the cost estimation for all options. This is to cover any unexpected and unplanned works TfB may face during design or implementation stage.

15. Conclusions

- 15.1.1 Vehicles would appear to be constantly travelling in excess of the speed limits along Hicks Farm Rise, most travelling in the range of a 35 – 36mph 85%ile speed throughout the day.
- 15.1.2 It would appear to be the case that traffic volumes have little effect on vehicles speeds along Hicks Farm Rise apart from when flows are significantly lower such as in the evening or early hours of the morning when a small proportion of the resultant speeds are marginally higher.
- 15.1.3 It is interesting to note that most collisions appear to have occurred in the vicinity of existing junctions these being areas where vehicle paths would conflict the most. It is possible that vehicle speeds could be a contributory factor to the collisions.
- 15.1.4 Various traffic calming measures have been adopted along Hicks Farm Rise to date and may have had success in marginally reducing vehicular speeds.
- 15.1.5 During the informal parking surveys it was noted that parked vehicles are located along Hicks Farm Rise. At best, these areas of parking are sporadic and do not have a constant presence throughout the day.
- 15.1.6 As a result any attempts to arrange these areas of existing parking into advisory designated parking areas would have little or no effect on vehicular speeds.
- 15.1.7 The presence of chicanes / build outs with priority working may have an effect on vehicular speeds but this could be significantly less in periods of reduced carriageway flow such as during periods of evening or early morning.
- 15.1.8 The inclusion of a combination of raised tables and speeds cushions would provide a permanent reduction in vehicular speeds for most vehicles.
- 15.1.9 The 'standard' width of speed cushion would be enough to reduce the speed of most vehicles with the exception of those with a larger wheelbase including HGV's, buses and the Emergency Services.
- 15.1.10 The installation of a greater width of speed cushion or even full width speed ramp would enable the reduction of all vehicle speeds but would face significant opposition especially from bus operators and the emergency services.

- 15.1.11 Further options have been discussed including the possibility of VAS / MVAS and permanent Safety Cameras although it is initially felt that these would either have little or no effect or not meet the present criteria for installation at this location.
- 15.1.12 Other further options such as further permanent signage and coloured surfacing would also have little or no effect on vehicular speeds when considering the similarity to the current traffic calming measures present on site.

