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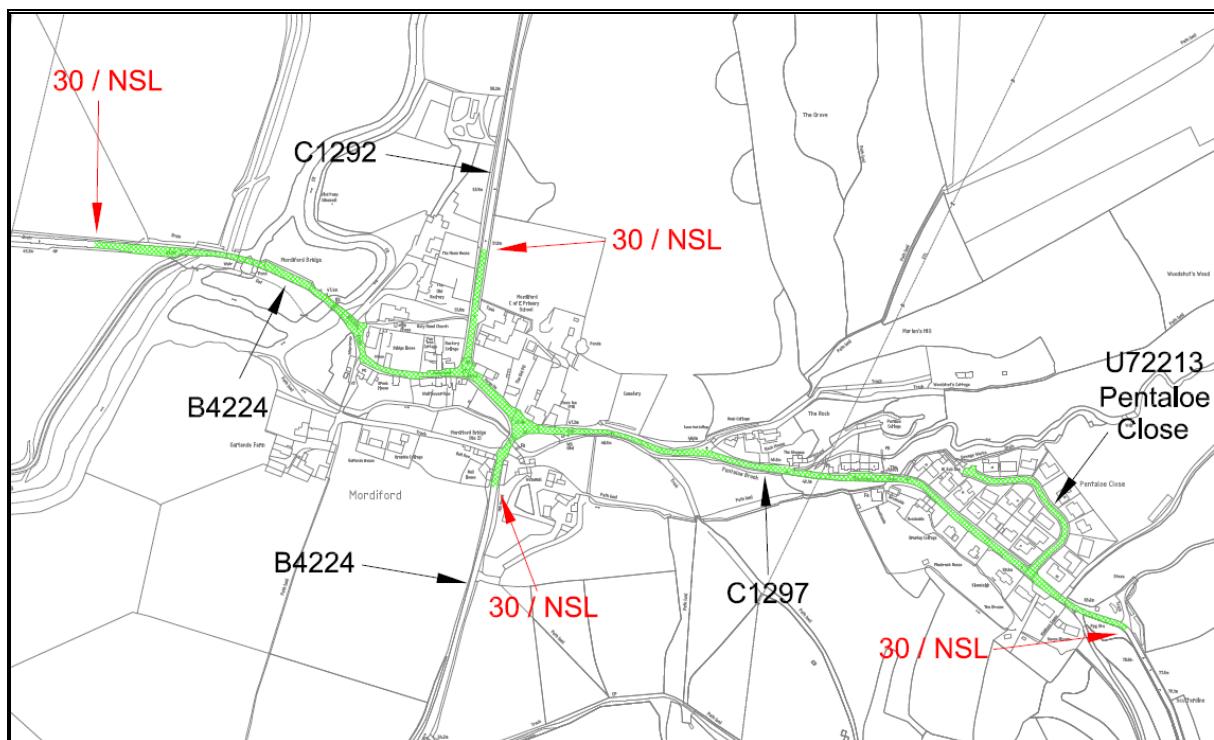
BRIEFING NOTE

B4224, C1292 AND C1297 MORDIFORD VILLAGE

(ADL REF: 3409/44/21A)

Background:

A request was made by the Local Member and Parish Council on 24th August 2015 to extend the current 30 mph terminal points and introduce a 20 mph zone in the vicinity of the village centre. The extent of the study is shown in the plan below.



ADL Traffic and Highways Engineering Ltd, on behalf of Herefordshire Council and Balfour Beatty, have been instructed to determine the suitability of:

- Extending the 30mph terminal points on the C1292 (north of village), B4224 (south and west of village) and C1297 (east of village) to appropriate locations; and,

- b) Introducing a speed limit reduction from 30mph to 20mph in the vicinity of the village centre.

Relevant Factors and Considerations:

Department for Transport Circular 01/2013 Setting Local Speed Limits (DfT Circular 01/2013) advocates for single carriageway rural roads:

At point 122 *“In most instances consideration of collision history, road function, mix of road user including presence of vulnerable road users, road geometry, engineering and environment and actual traffic speed should enable authorities to determine the appropriate speed limit on single carriageway rural roads”*

At point 123 *“Roads may have primarily either a through traffic function or a local access function. Both need to be provided safely. Mobility benefits will be more important for roads with a through function, while environmental and community benefits are likely to be of greater importance for the local access roads”*

At point 126 *“The choice of speed limits should take account of whether there is substantial roadside development and whether the road forms part of a recognised route for vulnerable road users, including whether there is a footway”*

At point 127 *“Table 2 sets out where speed limits should apply on rural single carriageway roads with a predominant motor traffic flow function given certain prevailing characteristics.”* However, this does not necessarily mean that speed limits should be automatically reduced.

TABLE 2	
SPEED LIMITS FOR SINGLE CARRIAGEWAY ROADS WITH A PREDOMINANT MOTOR TRAFFIC FLOW FUNCTION. EXCLUDING VILLAGES	
Speed Limit – (mph)	Where limit should apply
60	Recommended for most high quality strategic A and B roads with few bends, junctions or accesses.
50	Should be considered on lower quality A and B roads that may have a relatively high number of bends, junctions or accesses. Can also be considered where mean speeds are below 50 mph, so lower limit does not interfere with traffic flow.
40	Should be considered where there are many bends, junctions or accesses, substantial development, a strong environmental or landscape reason, or where there are considerable numbers of vulnerable road users.

At point 131 *“Fear of traffic can affect people’s quality of life in villages and it is self-evident that villages should have comparable speed limits to similar roads in urban areas. Therefore, it is Government Policy that a 30 mph speed limit should be the norm through villages”*

At point 133 it makes reference to Traffic Advisory Leaflet 01/2004 (DfT 2004) which suggests that *“reasonable minimum criteria for the definition of what constitutes a village for the purpose of applying a village speed limit of 30 mph would be that there were 20 or more houses (on one or both sides of the road) and a minimum length of 600 metres”*

With regard to 20 mph speed limits, Department for Transport Circular 01/2013 Setting Local Speed Limits (DfT Circular 01/2013) states:

At point 93 *“At least one traffic calming feature as defined in direction 16(2) TSRGD must be placed in a 20 mph zone and the features and signing must still be placed at intervals not greater than 100 metres: it is not the intention to remove physical features, but to ensure that the most appropriate measure is used to ensure the continuity of the zone.”*

At point 95 *“Research into signed-only 20 mph speed limits shows that they generally lead to only small reductions in traffic speeds. Signed-only 20 mph speed limits are therefore most appropriate for areas where vehicle speeds are already low. This may, for example, be on roads that are very narrow, through engineering or on-road car parking. If the mean speed is already at or below 24 mph on a road, introducing a 20 mph speed limit through signing alone is likely to lead to general compliance with the new speed limit.”*

Engineering and Environment:

There are three roads that connect in Mordiford Village; the B4224, the C1292 and C1297. These roads in the village are subject to a 30mph speed limit.

B4224

The B4224 runs in the west-south direction through the Village. The current 30/60 speed terminals on the B4224, on the west end of the village are located approximately 260 metres west of the bridge over River Lugg and the ones to the south of the village are located approximately 65 metres south of the junction with the C1297.

A 16.5 tonne weight limit (except for access) restriction applies on the section of the B4224 from the junction with the C1292 to the western end of the bridge over the River Lugg.

The B4224 is characterised by three significant bends in the village; one at the junction with the C1297 (almost 90° bend); a second at the junction with the C1292 and a third to the east

of the bridge over River Lugg. The width of the B4224 varies from 5 metres to 7 metres; with the widest section being at the 90° bend at the junction with the C1297 and the narrowest (the pinch point) being adjacent to Bridge House property (as the property wall abuts the northern side of the carriageway) and on the bridge itself.

Four footpaths connect to the B4224 in Mordiford – Footpaths 1A and 12 (to the west of the bridge). Footpath 30 (to the east of the bridge) and Footpath B1 to the south of the junction with the C1297.

The B4224 provides direct access to a number of dwellings, a post office and a public house (The Moon Inn) which is located on the northern corner of the junction with the C1297.

The B4224 also provides access to two private lanes (one of them is called Bell Lane). Both these lanes lead to a farming related business to the south of the village.

There are bus stops to the west of the bridge and adjacent to The Moon Inn public house. These bus stops are served by bus routes 453 and 478.

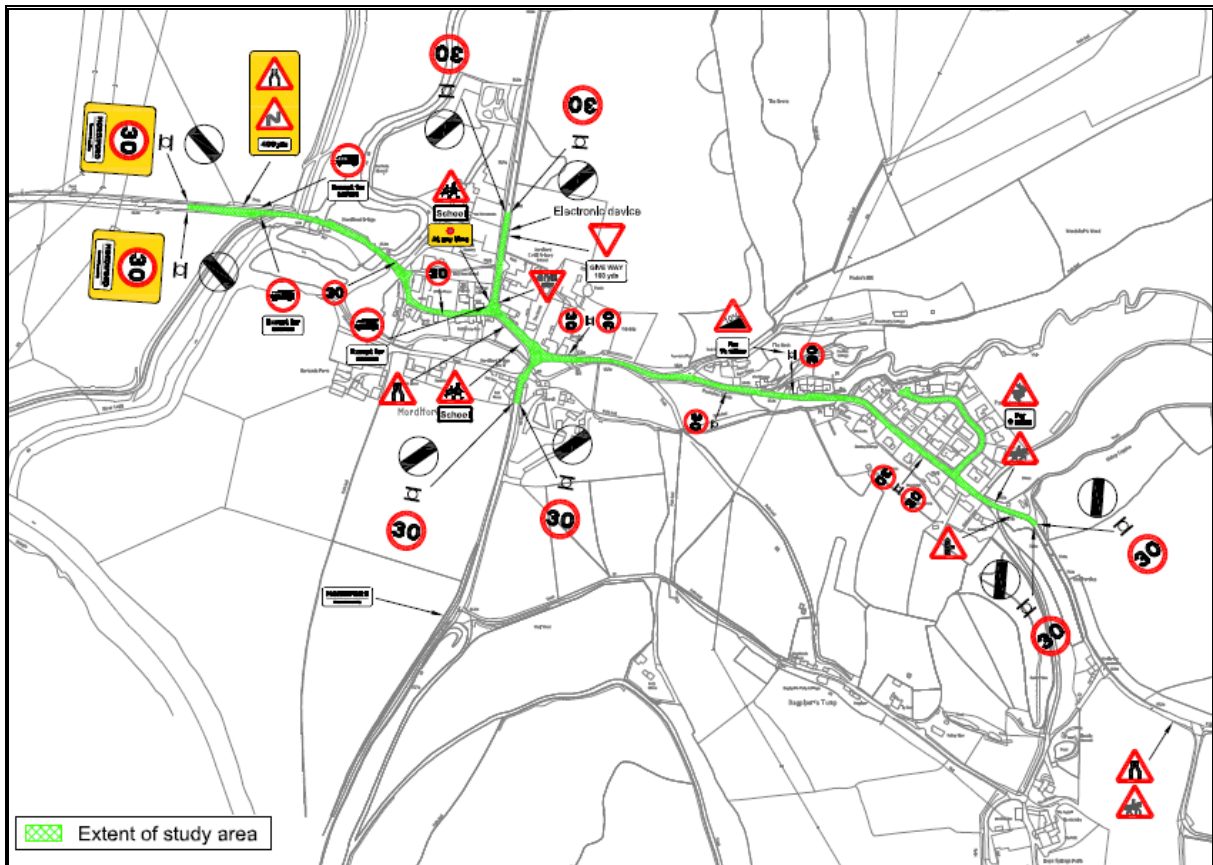
The bridge is made up of two single-file sections both 45 metres long on either end with a 50 metres long two-way section in the middle. This results in vehicles informally giving way at the start of the bridge on both ends as well as on the middle two-way section. This section also lacks footway and the pedestrians therefore have to walk on the carriageway to cross the bridge.

The 30 mph speed terminals on the B4224 to the west are displayed on yellow backing boards and are readily visible from a distance of in excess 150 metres. To the south, the 30 mph speed terminals are located under tree canopy and are not displayed on yellow backing boards. The tree canopy causes obscuration to these speed terminals.

To the west of the 30/NSL speed terminals, the section is characterised by relatively straight road for approximately 165 metres. It does not have any developed frontage.

There are signs warning motorists of narrow carriageway and bends on the road on yellow backing board with the text 'for 400 yards' to the west of the bridge for eastbound motorists. There is a sign warning westbound motorists of narrow carriageway, located near the junction with the C1292.

There are a number of 30 repeater signs on the B4224. The current signage is shown on the plan below.



With regard to road markings, the centrelines are in the form of warning lines (mark = 4 metres, gap = 2 metres). There are double yellow line restrictions on both sides of the B4224 on the bridge. The section of the B4224 to the east of the bridge for approximately 50 metres is characterised by continuous white edge of the carriageway lines on both sides of the carriageway with the broken white lines across the accesses to the properties.

C1292

The C1292 runs in the north-south direction and connects to the B4224 to the south via a simple priority junction. The current 30/60 speed terminals on the C1292 are located approximately 120 metres north of the junction with the B4224.

The C1292 under review provides a direct access to a primary school, a church and a dwelling and is approximately six metres wide. The cars are usually seen parked on the west side of the carriageway on this section of the C1292.

In the vicinity of the entrance to the school, there are bus stops on the C1292 served by bus routes 453, 458 and 478.

As shown on the plan in Page 5 of this report there is a permanent speed indicator electronic device, School sign on either side of the school and give-way sign with text 'Give Way 100 yards' for the southbound motorists on this section of the C1292.

There are double yellow line restrictions on the C1292 for a distance of 17 metres from the junction with the B4224. There is a School Keep Clear road marking across the access to the school.

The 30/60 terminal signs do not have National Speed Limit signs.

C1297

The C1297 runs in a east-west direction and connects to the B4224 to the west via a priority junction. The current 30/60 speed terminal signs are located 118 metres east of the junction with the U72213 Penteloe Close.

The roads exhibits a number of noticeable bends and carriageway width varies from 4 metres to 6 metres. The gradient of the C1297 is relatively flat for the first 320 metres from the junction with the B4224. From this point onwards, it is characterised by an uphill gradient for the entire section which is under review.

The C1297 provides direct access to a Cemetery (pedestrian access), up to 16 dwellings, four private lanes leading to houses, three footpaths (Footpaths C4, 24 and 29) and path into the woods (to the immediate west of the 30/60 speed terminals).

The C1297 also provides a connection to an adopted road, the U72213 Penteloe Close which is a residential cul-de-sac which provides frontage access to 23 dwellings.

There is a footway on the north side of the carriageway but it is not continuous. There is a section of road of approximately 125 metres long, 190 metres east of the junction with the B4224 with no footway. The pedestrians therefore could have to walk on this section of carriageway.

As shown on the plan in Page 5 of this report, there are 30mph repeater signs at various points. There is a Junction Ahead sign associated with Penteloe Close, 88 metres east of

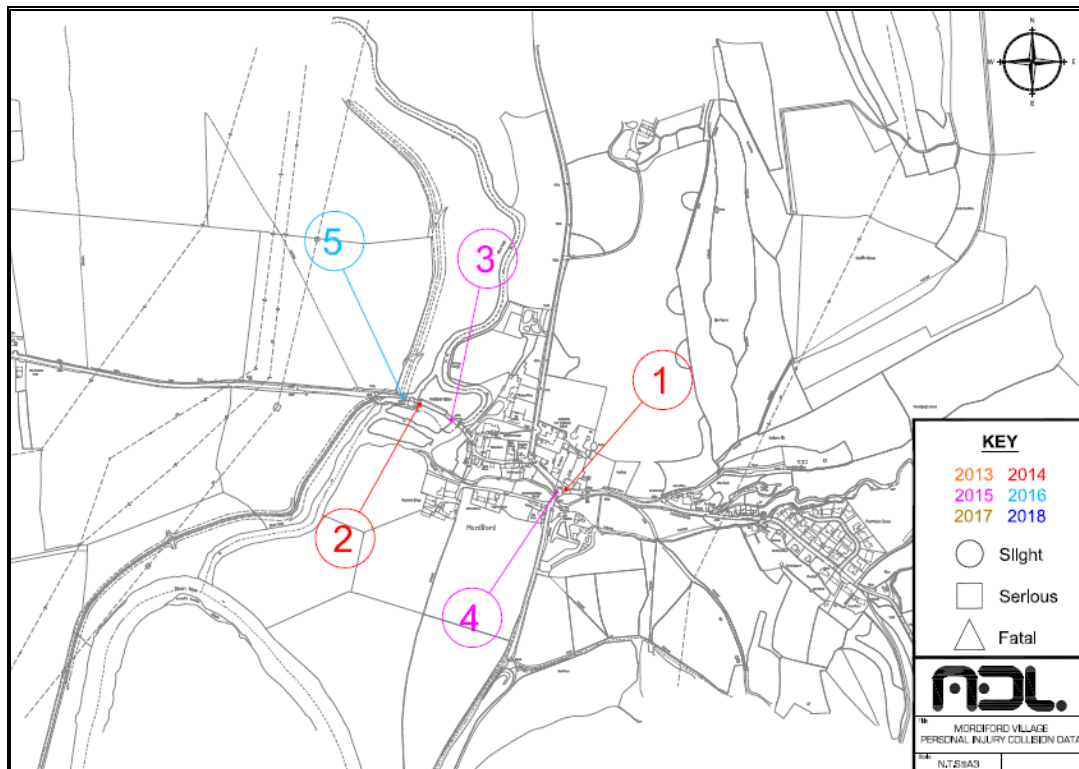
the junction for the westbound motorists but none for eastbound motorists to the west of the junction.

There is a wild animals sign with a text 'For 2 miles' and Horse sign for eastbound motorists, past the junction with Pentaloe Close. There is also a Horse sign with Narrow Carriageway sign for the westbound motorists beyond the 30/60 speed terminal signs.

Personal Injury Collision Information:

The table below depicts personal injury collisions that have recorded in five years between 1 February 2013 and 31 January 2018 inclusive - this being the latest validated data as at May 2018.

Plan Location	Date	Brief Description
1	13/07/2014	Driver of a vehicle failed to look properly and was likely using mobile phone while driving, collided with a cyclist while turning right onto the C1297. The collision was classed a slight.
2	18/07/2014	A driver of a vehicle failed to stop on time and hit the rear of the car which had stopped on the bridge to allow oncoming vehicles to pass. The collision was classed a slight.
3	10/02/2015	A driver of a vehicle failed to stop on time and hit the rear of the car which had stopped on the bridge to allow oncoming vehicles to pass. The collision was classed a slight.
4	19/06/2015	Driver of a vehicle lost control whilst negotiating the bend on B4224 adjacent to the C1297 and veered onto the path of an oncoming vehicle. The collision was classed a slight.
5	16/08/2016	A driver of a vehicle failed to stop on time and hit the rear of the car which had stopped on the bridge to allow oncoming vehicles to pass. The collision was classed a slight.



Existing Speed Survey Data:

Most road engineering and speed limit design refers to the 85th percentile speed. This is the speed that 85 percent of vehicles do not exceed when measured in free-flowing conditions at any single point on the highway.

One aim of a speed limit is to encourage more drivers to travel at about the same speed which has shown to reduce the likelihood of collisions. However, to be successful speed limits have to be evidence led and not set unrealistically low as this can quickly lead to an erosion of respect for speed limits.

Speed limits on their own are very unlikely to reduce vehicle speeds if they are set significantly lower than a prudent driver would choose to travel if there were no limit and such a course of action can lead to a worsening safety record.

Research has shown that the safest and most responsible group of drivers travel at or below the 85th to 90th percentile speed and this leads to recommendations that speed limits should normally be set at or around the 85th percentile speed recorded under good conditions.

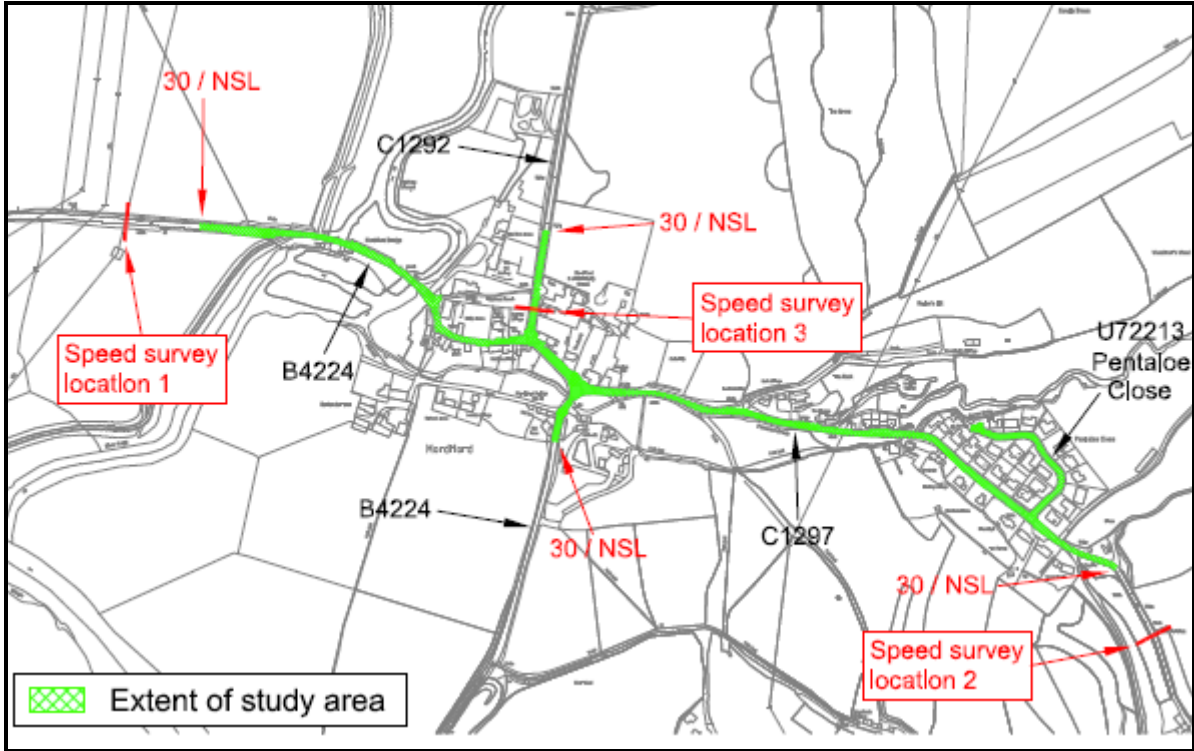
It's important to remember that a speed limit does not imply that it is a safe speed to travel at under all conditions. On all journeys on all types of road it is necessary to trust drivers to adopt lower speeds than the posted speed limit as conditions dictate and setting speed limits cannot be expected to replace this decision-making process.

Whilst the 85th percentile speed is an important and influential factor in deciding an appropriate speed limit other factors are also taken into account alongside the 85th percentile speed and may influence the recommendation. These are discussed in the review section below.

The speed surveys were undertaken at three locations in Mordiford; one on the B4224 in the west end of the village, second on the C1297 on the east end of the village and third on the C1292 opposite the school. The table below depicts the average 85th percentile speeds recorded over a seven-day period commencing on 20th June 2018 at these locations.

	Eastbound	Westbound
Location 1 (B4224)	44.8mph	48.5mph

	Northbound	Southbound
Location 2 (C1297)	31.2mph	26.0mph
Location 3 (C1292) adjacent to school	33.3mph	32.7mph



With reference to information contained in the sections above:

B4224 (West of Village)

The recorded 85th percentile speeds on the B4224 to the west of the village within National Speed Limit (NSL) section are well below the NSL. The recorded 85th percentile speeds are however above the Association of Chief Police Officer’s (ACPO) guidelines for the speed enforcement intervention level of 35 mph which is for a speed limit of 30 mph.

The section of the B4224 to the west of the 30/NSL is a straight road with no developed frontage. Therefore, extending the existing 30mph terminal points further westwards without the installation of effective self-enforcing traffic engineering features, is unlikely to result in a proportional or significant reduction in the existing 85th percentile speeds.

It is important that the positioning of terminal signs coincides with the visual evidence as to why a speed limit is in force. Evidence led speed limits are usually well observed and it is considered that the current position of the 30 mph terminals to the west of the bridge are in the optimum position.

It is considered possible that by extending the 30 mph westwards this could create a situation whereby the drivers perceive the speed limit reduction (along the extended section) to be unreasonably low resulting in a lack of respect for the speed limit with drivers travelling at inappropriate speeds towards Mordiford which is likely to increase the risks of collisions especially at the bridge.

B4224 (South of Village)

The visibility to the speed terminals on the B4224 to the south of the village is obscured by tree canopy and there is some scope to extend this to a location away from this tree canopy some 75 metres to the south. This location has wide verge on the east side which could facilitate a village name sign. The west side of the carriageway is hedged which will require trimming back.

This location is not only free from trees, but will also provide a clear driver visibility to the 30 terminals from a distance of in excess of 115 metres.

C1297 (East of Village)

The recorded 85th percentile speeds on the C1297 to the east of the village within the NSL section are not only well below the posted NSL but also below the intervention level of 35 mph for a speed limit of 30 mph based on the ACPO guidelines. Therefore, extending the existing 30mph terminals further eastwards is likely to achieve compliance.

Also, the speed terminals currently get overshadowed by the dense tree tops which is likely to obscure the visibility to the terminals. So, extending the existing 30 mph speed limit eastwards on the C1297 adjacent to Scutterdine Cottage is likely to mitigate this issue. There is a verge on south side of the carriageway and hedge on the north side at this location where the speed terminals could be implemented.

C1292 (Adjacent to the School)

Currently, there is a speed indicator device, a school sign, give way signs and speed limit terminals on the C1292 in the vicinity of the school. Due to number of signs in the close proximity, it is likely that current speed limit terminals become inconspicuous to the southbound motorists. It is hence considered appropriate to extend the existing 30 mph speed limit northwards which would result in relocating the speed terminals further away from the existing sign clutter on the approach to the school. The speed limit could be extended approximately 100 metres north to coincide with the current village name sign and could be co-located with 30 roundels with coloured surfacing.

Consideration to a 20 mph speed limit

The Parish Council's aspiration is to implement a 20 mph speed limit in the vicinity of the school and in the village centre.

Detailed analysis of the speed survey during the school opening and closing times on an average weekday indicate the following:

	School Opening Times 08:00-09:00	School Closing Times 15:00-16:00
Northbound	28.6 mph	29.6 mph
Southbound	25.4 mph	27.3 mph

The 20 mph speed limits consist of signage alone and no traffic calming measures; and could be considered for deployment when the speeds are already near to 20 mph (typically at or below 24 mph).

Given the 85th percentile speeds on the C1292 on an average weekday as well as during the school normal opening and closing hours are more than 24 mph, the introduction of the 20 mph speed limit adjacent to the school without traffic engineering measures is unlikely to achieve driver compliance and thereby such proposal is unlikely to receive support of the Police and the Council.

The B4224 has sharp bends which are likely to self-regulate the vehicle speeds. Therefore, reduction in speed limit on the B4224 from its current 30 mph speed limit is not likely to generate significant benefit in terms of reducing vehicle speeds. Also, recommending a 20

mph on the B4224 alone and not on the C1292 in the vicinity of the school (for the reasons set above) would not be appropriate.

Consideration to a 20 mph zone

Given the 85th percentile speeds are more than 24 mph, a 20 mph zone in the vicinity of the school and in the village centre could be considered to be more appropriate; but a 20 mph zone must by law contain traffic calming features spaced at no more than 100 metres to ensure a high degree of self-enforcement.

Traffic calmed 20 mph zones tend to be more effective and hence a more appropriate measure than signed only 20 mph speed limits. However, there are significant costs associated with the provision of traffic calming features.

For this reason, an application for 20 mph zone with associated traffic calming measures are currently considered as a separate issue to routine speed limit work such as the implementation of 30, 40 or 50 mph speed limit.

Consideration to a part time 20 mph speed limit

A part time 20 mph speed limits can be considered for implementation whereby a 20 mph speed limit only applies at certain times of the day e.g. at school opening and closing times. However there are significant costs associated with the extensive signing and flashing warning lights that are required to give effect to this type of restriction.

For this reason, an application for part time 20 mph speed limit with associated infrastructure are currently considered as a separate issue to routine speed limit work such as the implementation of 30, 40 or 50 mph speed limit.

Speed Limit Recommendations:

Having considered all the above factors, the recommendations are:

B4224 (west of village)

It is not recommended to extend the current 30 mph speed limit on the B4224 to the west of Mordiford Village westwards.

B4224 (South of Village)

It is recommended to extend the current 30 mph speed limit on the B4224 to the south of the village by further approximately 75 metres. A village name sign could be placed on the east side of the carriageway due to the availability of adequate verge width.

C1297 (East of Village)

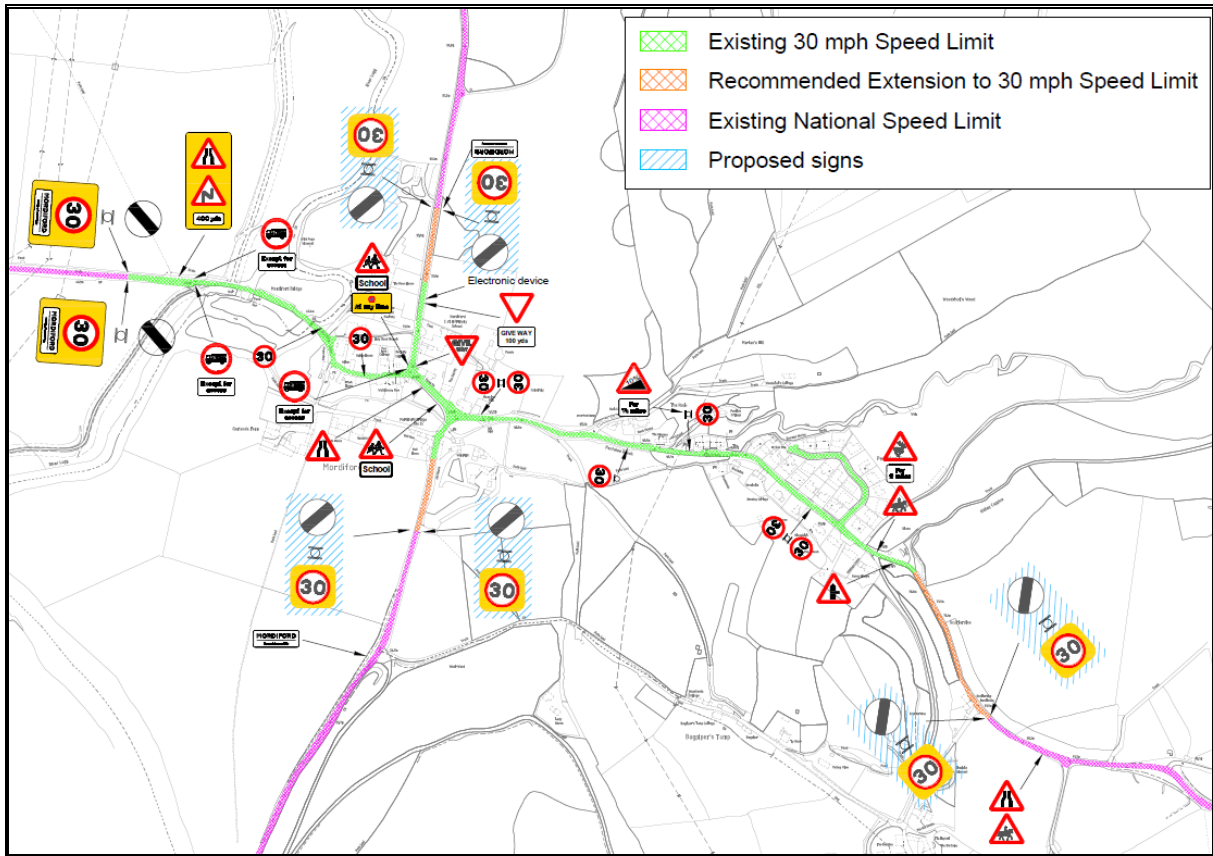
It is recommended to extend the current 30 mph speed limit on the C1297 to the east of the village to a location adjacent to Scutterdine Cottage.

C1292 (Adjacent to the School)

It is recommended to extend the existing 30 mph speed limit further northwards by approximately 100 metres to coincide with the current village name sign and could be co-located with 30 roundels with red surfacing.

It is not recommended to reduce the speed limit adjacent to the school and in the village from its current 30 mph speed limit to 20 mph as part of the current scheme because the 20 mph zone with associated traffic calming measures and part time 20 mph speed limit are currently considered as a separate issue to routine speed limit work such as the implementation of 30, 40 or 50 mph speed limits.

The recommendations are shown on the plan on the next page:



Signs/Lines Recommendations:

It is recommended to:-

1. Display the 30 speed terminal signs on the C1292 on the yellow backing boards.
2. Display the 30 speed terminal signs on the B4224 (south) on the yellow backing boards and investigate the possibility of implementing a village name sign on the east side of the carriageway.