



**2020**

**CONSULTANCY**

# ROAD SAFETY ASSESSMENT IN WILLAND VILLAGE

FOR WILLAND PARISH COUNCIL

**JANUARY 2023**



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## 1.0 INTRODUCTION

2020 Consultancy have been commissioned by Willand Parish Council to undertake a feasibility study to establish the current traffic issues with road safety and identify the most suitable interventions that will be effective at reducing traffic speed and volume, along with improving road safety within the village of Willand, located in Mid Devon.

For the purpose of this project, the study area has been defined from along Uffculme road to the north east inclusive of Mid Devon Business Park, Willand Old Road to the east, Silver Street to the south, and where South View Road changes to Station Road to the west. Figure 1 below illustrates the study area and includes the following key roads:

- Gables Road;
- Orchard Way;
- Silver Street;
- Station Road;
- Southern Extents of Uffculme Road;
- South View Road;
- Willand Moor Road;
- Willand Old Village.

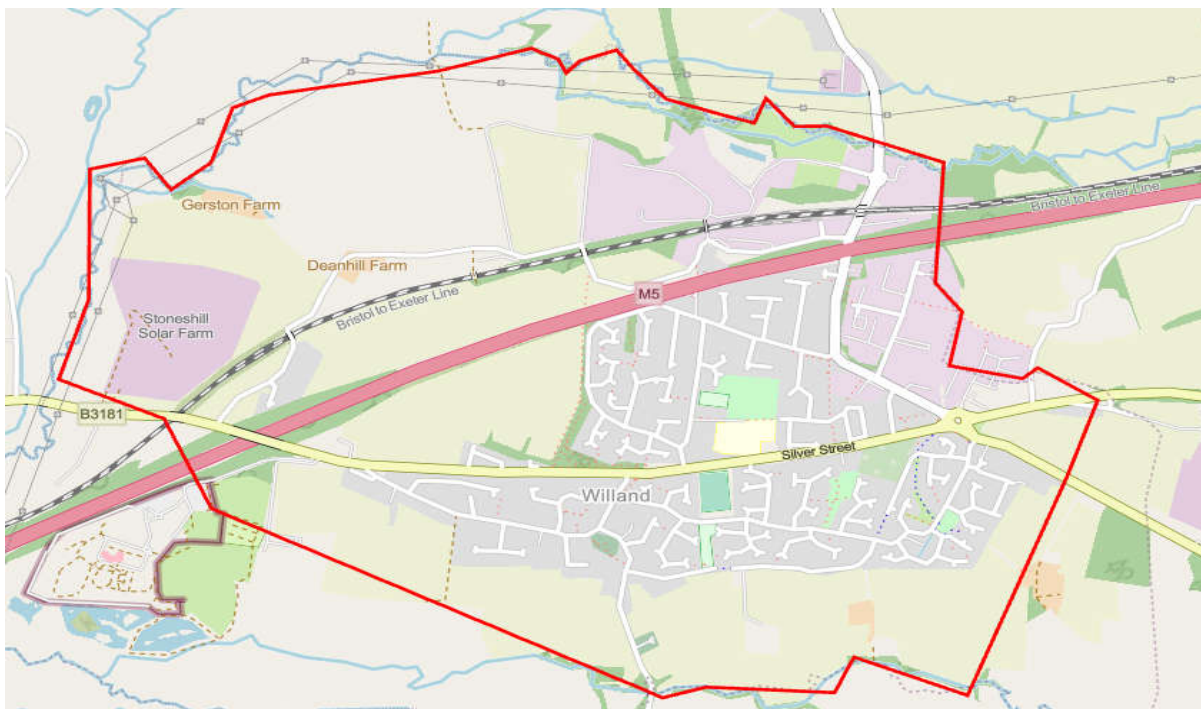


Figure 1 – A map showing the extent of the study

After reviewing the village in detail, six key areas have been identified, which are likely to be areas that are frequented by various transport modes, due to the key trip generators and positioning of the road. These locations are listed below and are shown in figure 2. It should also be acknowledged that there may be additional locations that generate footfall, such as the Co-Op that is located off the roundabout junction of Silver Street and Uffculme Road, but these locations haven't been highlighted as potential areas of concern due to the site observations, and existing infrastructure present.

1. Silver Street, at the esso garage junction;
2. Silver Street outside the Willand Rovers A.F.C playing pitch
3. Willand school along both Silver Street and Gables Road;
4. Willand Old Village, at the post office;
5. South View Road;
6. Station Road.

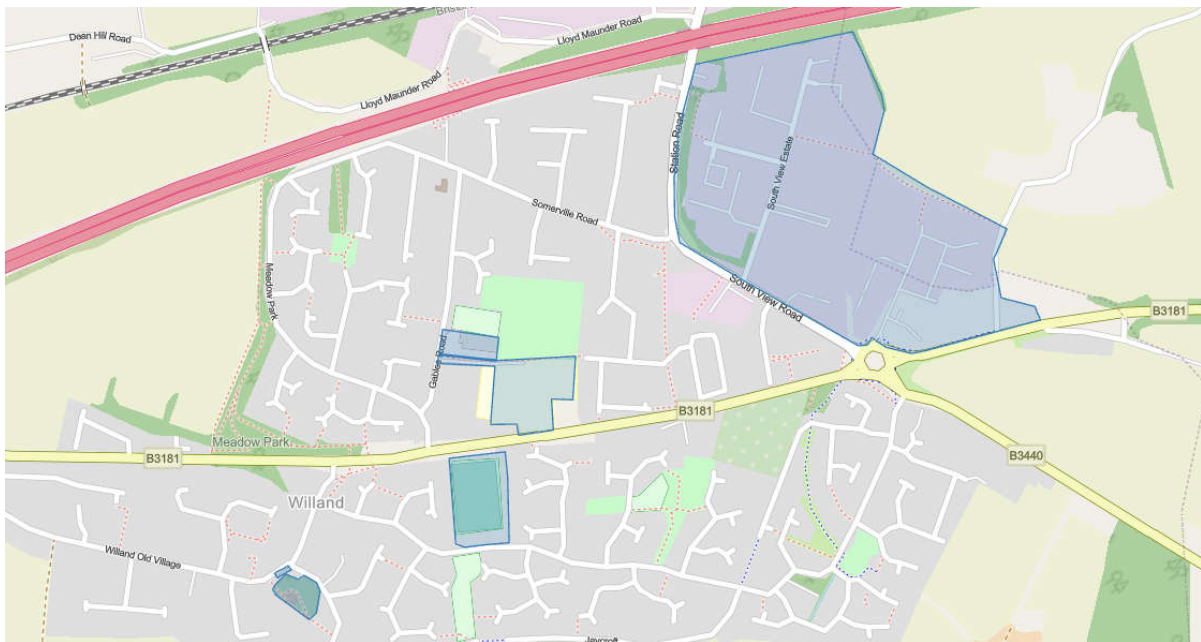


Figure 2 – Image depicting key areas of the village extent

## 1.1 BACKGROUND

Willand is a village in Mid Devon, near Cullompton. The population of the village is 3,476 based on the 2021 Census, which is an increase of approximately 116 from the 2011 Census data. Willand is located approximately 12 miles north of Exeter, and 15 miles south-west of Taunton in Somerset. It is a fairly linear village, along a southwest-northeast axis, and boasts a primary school, public house, large industrial estate and local smaller amenities, and a large Co-Op superstore. There are two large industrial estate named Mid-Devon Business Park and South view industrial estate, Mid-Devon industrial estate is situated to the north of the built area and South view industrial estate is situated to the north west within the built area.

Willand village is located in close proximity to the Strategic Road Network (SRN) with the M5 motorway running north-south to the west of the village, until the southern extents where the motorway travels underneath the B3181. There are two junctions onto the motorway in close proximity of the village. Junction 27 is located to the north of the village (2.2 miles), and junction 28 is located south of the village (1.2 miles). When there are issues along the M5 between junctions 27 & 28 the B3181 is the main diversion route between these junctions.

There is no railway station in Willand village. The nearest station is Tiverton Parkway, which is located approximately 2.2 miles north of the village. There is a local bus network that serves the village, with Silver Street, Willand Old Village, Meadow Park, Somerville Road, & Station Road some of the key roads that have bus stops provided.

The Parish Council has had discussions with Devon County Council over the traffic within Willand, in particular, but not restricted to the increase in vehicles using Silver Street and the perceived speed of these vehicles both in the 30mph and 40mph restricted areas. There have been attempts to have the 30mph speed limit extended to the Esso garage particularly because of the new housing developments of Ash Close and Rowan Lea but these have not been supported by Highways. Some of these comments have been less than helpful indicating that the village is lucky to have any speed restriction through it due to the nature of the road.

## 1.2 NEIGHBOURHOOD PLAN

One of the potential funding streams for Parish Councils is Community Infrastructure Levy (CIL), which can be used to carry out highways improvements such as the proposed measures detailed within this report. Town and parish councils can receive 15% of the CIL receipt. If the town or parish council has a 'made' Neighbourhood Plan they are eligible to receive 25% of the CIL receipt. Willand Parish has a Village Plan, meaning there is a higher likelihood of funding being made available, and a higher proportion of funding. Willand Parish currently do not have a Neighbourhood plan in place, although the desire to have one is progressing.

On the 6<sup>th</sup> of January 2021, Mid-Devon District Council gave notice of their decision to withdraw the Mid-Devon Community Infrastructure Levy (CIL) from its examination and that it will no longer be progressed. This means that funding opportunities for parishes within Mid-Devon have to be sourced from other areas including Section 106 monies.

## 1.3 REPORT STRUCTURE

This report presents the feasibility study for the viability of the proposals and includes the following elements:

- Assessment of existing situation
- Feasibility design and evaluation
- Recommendations on the next steps for implementation of interventions.

The feasibility design comprises of the following:

- Gateway treatments at 30mph terminals on approaches to Willand
- Extension to the 30mph speed limit along Silver Street
- Improvements to traffic signage
- Improvements to road markings
- Improvement of warning signage throughout village
- Installation of Speed Indicator Devices (SID)
- Implementation of 20mph limit within residential streets
- Accessibility improvements throughout village
- Widen footway along Silver Street

- Create a virtual footway along Willand Old Village
- School safety zone along Gables Rd and Silver Street
- Convert existing zebra to humped crossing on South View Road
- Construct footway along South View Road (outside Bradfords)
- Uncontrolled pedestrian crossing point along Silver Street for bus stop near junction with Fir Close
- Traffic calming where on-street parking is Silver Street
- Widen footway along South View Road southern side (between estate & Station Road)
- Public realm enhancements outside Post Office
- Mini roundabout at junction of Silver Street & Meadow Park
- 20mph zone along Orchard Way / Willand Moor Road
- Traffic signal priority system along Willand Old Village near Post Office.



## 2.0 EXISTING SITUATION

### 2.1 TRAFFIC SPEED INTO AND THROUGH WILLAND VILLAGE

There is an existing national 60mph speed limit as you approach the village from the east, south and west directions. From the north, there is a 50mph speed limit in place. From the south, there is a 40mph speed limit that runs from Cullompton along Five Bridges, until a point along Silver Street approximately 130m south of the junction with Willand Old Village. The 30mph speed limit extends out along Uffculme Road by just over 300m prior to the national 60mph speed limit to the east, and extends out to Willand Road to the west, nearly 275m west of the M5 bridge.



Whilst there seems to be no issue with the extents of the 30mph to the north, east, and west of the village, there is a clear rationale to extend the 30mph speed limit to the south along Silver Street. The location of the 30mph speed limit terminal signs is very close to key parts of the village, as well as residential junctions that will experience a lot of demand, especially during peak periods. Due to the location of the 30mph terminal signs, there is no room for adequate decrease in speed.

In village environments, drivers are more inclined to start reducing their speed at the speed limit change whereas in more urban environments this change is often before the speed limit change. Based on the location of the 30mph terminal signs, traffic may be passing through two key junctions and a school at excess speed.



Willand village appear to be pro-active in undertaking speedwatch within the village. The regular application of a neighbourhood lead speedwatch programme contributes to a strong data set that can be used if needed in future applications or studies. This would help contribute to a positive impact on traffic speed through the village.

As traffic enters the village from all directions, there are 600mm 30mph speed limit terminal signs that conform to the directions set in the Traffic Signs Regulations & General Directions (TSRGD). However, it is possible to make these signs more conspicuous, which will likely result in a speed reduction. Further enhancements can be made through additional or more conspicuous road markings such as “SLOW”.



## 2.2 VEHICLE ACTIVATED SIGN

Willand village operate a Vehicle Activated Sign (VAS) that was in position along Silver Street, south of the junction with Fir Close during the site assessment. However, this sign is relocated around the village by the parish council, as there is evidence that suggests a VAS is most effective within the first two weeks of deployment. Relocating the sign around the village will provide the opportunity to reduce speed in a number of separate locations, which is an effective way of reducing speed over a wider area.



Although a VAS is an effective method of reducing traffic speed, the signs have limited effectiveness. A Speed Indicator Device, which is a sign that displays the speed of traffic as oppose to a reminder of the speed limit will be more effective than a VAS. However, the VAS in place along Silver Street has an additional benefit in collating traffic speed of traffic passing the sign. This can provide a good indication of average traffic speed, & traffic volume, which may impact the interventions that are prioritised.

As part of this feasibility study, Willand Parish Council have provided 2020 Consultancy with data collated from the VAS. This has enabled the team to understand traffic behaviour over a period of time. Two months of data has been scrutinised; September 2022; and October 2022. The sign was positioned in different locations for both these months. In September 2022, the sign was located in a northbound direction between the Esso garage and the Allotments. In October 2022 it was located in a southbound direction north of the junction with Fir Close.

The key headlines from the data has been summarised in table 1 below.

VAS Location	Traffic Volume	Traffic Speed 0-20mph	Traffic Speed 20-25mph	Traffic Speed 25-30mph	Traffic Speed 30-35mph	Traffic Speed 35-40mph
Southbound north of junction with Fir Close	100,472	3%	15%	45%	30%	6%
Northbound Esso garage / Allotments	137,210	7%	23%	43%	22%	5%

Table 1 – Data analysis from VAS along Silver Street

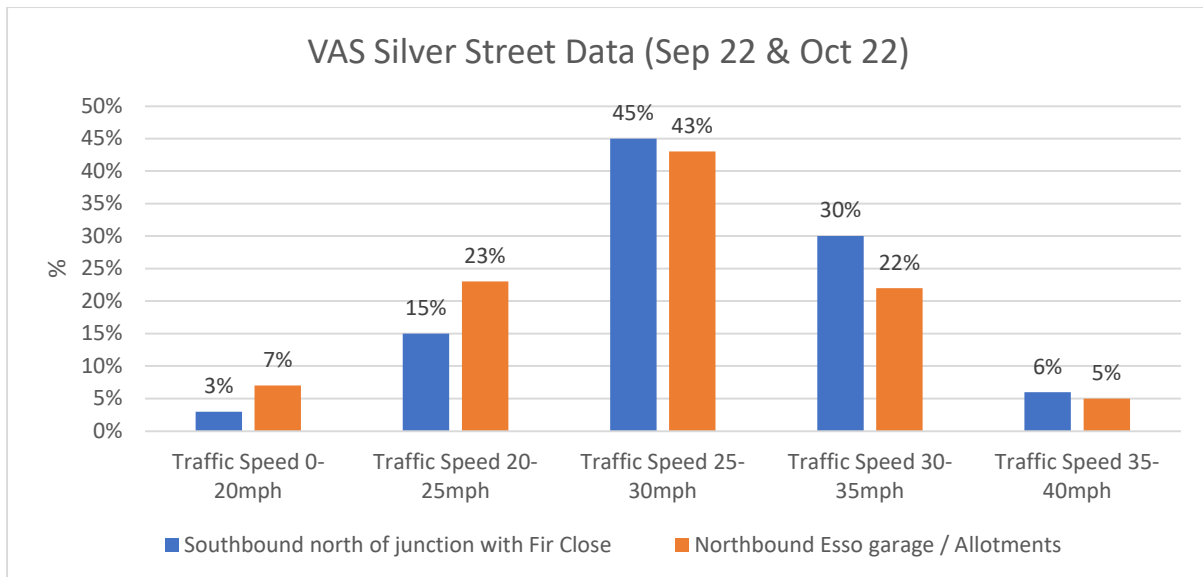
The data contained in table 1 illustrates that there is a greater volume of traffic travelling northbound along Silver Street compared to southbound. Nearly 37,000 additional vehicles were recorded travelling northbound from the data supplied. It should be noted that the northbound sign was in operation for an additional two days, however, this is still a higher volume of traffic, with an expected average additional volume per day of approximately 1,300. Both directions demonstrate that there is a relatively high volume of traffic travelling along Silver Street each day.

Table 1 does illustrate that 63% of traffic travelling southbound are travelling within the speed limit. Whilst this is an encouraging figure, there is 37% of traffic exceeding the speed limit. However, based on the guidelines set by the Association of Chief Police Officers (ACPO), enforcement of speed limits is generally looked at from 10% plus 2mph of a speed limit. Therefore, in a 30mph limit, 35mph is the figure vehicles will be penalised by traffic enforcement. This would result in 7% of the southbound traffic.

The data provided from the northbound traffic demonstrates a higher compliance rate, with 73% of the total traffic within the 30mph speed limit. This means that only 23% of traffic is exceeding the speed limit. However, the amount of traffic exceeding the 35mph threshold for enforcement is more similar, with 5% of the total above 35mph.

It should be noted that this data has been captured from a device designed to slow traffic speed. Therefore, it's likely that the vehicular speeds recorded by the VAS have been influenced by the sign. If the sign wasn't present, and the data was captured from an Automatic Traffic Count (ATC), it's expected that the traffic speeds would be higher. Therefore, it can be considered that Silver Street does have a speed concern.

Figure 3 provides a breakdown of the speed limit categories from table 1 between the two sites to illustrate how traffic speed differs between northbound and southbound.



*Figure 3 – Breakdown of traffic speed from table 1*

### 2.3 EXISTING SIGNAGE AND ROAD MARKINGS

The signage through the village is adequate but could be improved, which could decrease the levels of speeding throughout the village. Along Silver Street between the 40mph speed limit and the bridge situated over the M5, and the 40mph speed limit and 30mph speed limit gateway, there are a number of 40mph repeater signs located in strategic points through the village. However, a number of these have visibility issues due to poor positioning. There are key lines on the road surface located around junction areas that would benefit from being refreshed.

Whilst a number of the signs are in poor condition there are also locations where there is no signage, where there could be a benefit, such as advance warning signage. Positioning these signs in appropriate locations may assist in the control of speed on the approach to the centre of the village.

There are small areas that would benefit from the implementation of road markings and jointly, there are areas that would benefit from the removal of road markings. The introduction of edge of carriageway lines or the improvement to existing edge of carriageway lines would act as a means to reduce the perception of carriageway space. This intervention alone would only produce marginal gains but included in a package of interventions would contribute to producing an adequate speed reduction.



## 2.4 CROSSING FACILITIES

There are a combination of pedestrian crossing facilities within Willand. Along Silver Street, there are two signalised Puffin crossings that provide safe crossing points for pedestrians near the school, and near the roundabout junction with Uffculme Road. Along South View Road, there is a zebra crossing to aid in pedestrian movements with the location being due to carriageway width constraints and other locations being too close to the roundabout located to the north. There are a number of uncontrolled crossing points along key locations across the village including Silver Street, Uffculme Road Willand Moore Road, and Orchard Way. This can be considered an adequate provision.



## 2.5 FOOTWAYS

In Willand there are a number of established footways. There are primary ones located along Silver Street and South View Road although at points these are particularly narrow based upon the area they run through. There are also some interconnectivity issues where there are no footways that run alongside the carriageway on the entrance points to village. Enhancing footways should be seen as a intervention that is considered to improve pedestrian safety. It may also assist in reducing traffic speed if the carriageway is reduced to enable the footway widening.

### 3.0 COLLISION DATA

Collision data has been investigated as part of this feasibility study. Reviewing the *Crashmap* website for a period of five years from 2017 to 2021 has demonstrated that there have been 10 reported collisions within the village extents. This does not mean there haven't been more collisions, but these are the collisions that have involved the callout of the emergency services. There is no way of tracking the smaller "prangs" that are dealt with at the scene with the parties involved as no records are kept.

Between 2017 and 2021 there have been one serious collision, which is represented by the red icon on the map shown in figure 4. The serious collision located near the village hall appears to be located along Silver Street (B3181) and involved two vehicles and one casualty. This incident occurred in April 2021. In addition to the serious incident there was also an additional 9 incidents classified as slight (amber icon) which occurred at various points throughout the village and detailed in the figure 4 below.



Figure 4 – Image detailing collisions that have occurred in Willand village



A summary of the collisions is shown below:

### **SERIOUS COLLISIONS**

**Date:** 15/04/21

**Location:** Silver Street near Willand school

**Number of vehicles involved:** 2

**Number of casualties involved:** 1

### **SLIGHT COLLISIONS**

**Date:** 22/08/21

**Location:** Silver Street outside Esso garage

**Number of vehicles involved:** 2

**Number of casualties involved:** 1

**Date:** 08/08/18

**Location:** Silver Street junction with Willand Old Village (southern junction)

**Number of vehicles involved:** 2

**Number of casualties involved:** 2

**Date:** 21/07/21

**Location:** Silver Street junction with Willand Old Village (southern junction)

**Number of vehicles involved:** 2

**Number of casualties involved:** 1

**Date:** 03/12/19

**Location:** Silver Street south of junction with Meadow Park

**Number of vehicles involved:** 2

**Number of casualties involved:** 1

**Date:** 14/12/17

**Location:** Silver Street junction with Fir Close

**Number of vehicles involved:** 2

**Number of casualties involved:** 1

**Date:** 24/08/18

**Location:** Townlands near junction with Willand Old Village

**Number of vehicles involved:** 3

**Number of casualties involved:** 1

**Date:** 16/03/17

**Location:** South View Road junction with South View Estate

**Number of vehicles involved:** 2

**Number of casualties involved:** 1

**Date:** 02/04/17

**Location:** South View Road junction with Somerville Road

**Number of vehicles involved:** 2

**Number of casualties involved:** 1

**Date:** 13/01/2018

**Location:** Station Road north-west of One Stop convenience store

**Number of vehicles involved:** 2

**Number of casualties involved:** 1

Whilst the number of collisions recorded within the five-year period doesn't cause any initial concerns, most collisions have occurred along Silver Street, which is the B classified road that orientates south to north through the village extents. It should also be noted that one collision was classified as serious. It is more common for collisions in 30mph speed limits to be classified as slight as the lower traffic speed reduces the damage caused to casualties.

There doesn't appear to be any noticeable patterns with the collisions that raise immediate concerns. There is a mixture of collisions occurring in the summer months, and collisions occurring in the winter months. A lot of the collisions are near junctions, which suggests that vehicles entering or exiting the junction may have done so without a better understanding of what is approaching from other directions.

It is recommended that Devon County Council as the highway authority undertake a more detailed review of this collision data, including accessing the Stat 19 forms to determine if speed is likely to be a contributory factor in the accidents.

Although the collision data would suggest there isn't any cluster sites of collisions over the previous five years, this shouldn't discourage Devon County Council from considering the interventions that are put forward in section 4 of this feasibility report. The interventions have been developed to be proactive in reducing the likelihood of collisions occurring, as oppose to reacting to dangerous sites. It should be acknowledged that the existing 40mph speed limit along Silver Street does create a safety risk due to the residential housing sites located off Silver Street.

## 4.0 FEASIBILITY DESIGN

### 4.1 INTRODUCTION

This section outlines the interventions that have been assessed by 2020 Consultancy for consideration within Willand village and details the potential benefit the interventions can bring. Each measure has been assessed against an assessment criteria that has been developed to determine the effectiveness of the intervention specifically for Willand village. The assessment criteria includes four key criterion:

- Road safety;
- Traffic speed;
- Traffic volume;
- Intervention impact.

The criterion for road safety includes all modes of transport such as vehicular traffic, pedestrians, and cyclists. For the intervention to score highly, it is expected to deliver substantial road safety benefits at either a specific site or a wider area. The intervention will score low if there are minor or no road safety benefits. Poorly designed or located road safety interventions can actually create additional safety concerns in an area. Any interventions where a wider safety concern may arise results in no score.

In most villages, traffic speed is likely to be a concern, especially along the key roads. In Willand, this would include Silver Street, Willand Old Village, and Orchard Way. Road safety interventions should always be seeking to reduce traffic speed when the primary focus is on vehicular traffic. The criterion for traffic speed has been separated into five categories based on the likely traffic speed reduction achieved. If an intervention can achieve an average speed reduction of 6mph this will score high. The other categories include a speed reduction of 3-5mph, 1-2mph, and no speed reduction. If the intervention may encourage speed, this would result in no score.

Achieving a reduction in non-residential traffic within a village is the most difficult outcome from the criteria. Road safety, and traffic speed can be reduced with relatively low cost intervention. Often, the most effective method of reducing traffic in villages is through significant investment on the Strategic Road Network. This can involve hundreds of millions. Therefore, achieving a high score for the traffic volume criterion is unlikely. Higher cost interventions may discourage traffic from certain routes within

the village, but they are likely to use another route. Based on this, any reduction in traffic volume on the road network will result in a positive score for this criterion.

The final criterion focuses on the impact of the intervention. If the intervention is likely to result in a substantial positive impact on the site the assessment score will be high. A noticeable or slight impact from the intervention will result in a positive score for the intervention. Minor or no impacts will result in a low score, and a negative impact on the site will result in no score. This criterion will be influenced by the other criterion.

Table 2 summarises the scoring assessment used as part of this study to determine how effective the intervention will be within Willand village as described above.

Effectiveness				
Score	Safety	Speed	Volume	Impact
10	Substantial improvements to road safety	Average speed reduction over 6mph	Substantial reduction in non-residential traffic flow	Substantial impact at the site
9				
8	Noticeable safety improvements likely	Average speed reduction between 3-5mph	Noticeable reduction in non-residential traffic flow	Noticeable impact at the site
7				
6	Safety Improvements likely	Average speed reduction between 1-2mph	Reduction in non-residential traffic flow	Impact at the site
5				
4	Minor or no safety improvements likely	No speed reduction	Minor or no reduction in non-residential traffic flow	Minor or no impact at the site
3				
2	Intervention likely to cause additional safety concerns	Intervention may encourage excessive speed	Intervention may attract additional traffic	Intervention may cause negative impact at the site
1				

Table 2 – Intervention effectiveness assessment criteria

In addition to the effectiveness of the intervention, it's important that consideration is given to the cost of the intervention. In most cases, the higher cost interventions will be the most effective. This assessment would be unproductive if no consideration was given to the delivery costs as the higher cost interventions would be the highest scoring interventions. There would then be challenges for implementation due to the costs associated with the intervention. Therefore, the assessment criteria includes the approximate cost of interventions, as well as additions such as statutory process costs.

Table 3 demonstrates the criteria used for determining the score based on the likely cost range of the intervention.

Score	Cost Range
10	£0 - £5,000
9	£5,000 - £10,000
8	£10,000 - £20,000
7	£20,000 - £40,000
6	£40,000 - £75,000
5	£75,000 - £100,000
4	£100,000 - £150,000
3	£150,000 - £200,000
2	£200,000 - £250,000
1	£250,000+

*Table 3 – Cost Assessment for interventions*

As part of this feasibility study, 20 interventions have been considered potentially suitable for Willand village and are outlined below. These interventions include measures that primarily focus on traffic i.e. speed limit extensions, and signage, and measures that primarily focus on pedestrians i.e. widened footpaths, and accessibility improvements. However, most interventions are linked. For example, widening a footpath may result in a narrowing of the carriageway, which will reduce traffic speed.

One intervention that hasn't been considered as part of this feasibility study is speed humps / cushions. The intervention wasn't progressed as there were a number of negative impacts including impact on local traffic and the decrease in village aesthetic. This type of intervention is also considered more urbanised and not in-keeping with the environment associated with Willand. Although they are similar, and share many characteristics, raised tables are likely to be more effective. However, the only sites these have been considered are at a controlled crossing point, and at a junction. Both these locations result in a difference effectiveness, with less negative impacts.

## 4.2 GATEWAY TREATMENTS AT 30MPH TERMINALS

Speed entering Willand from all directions appeared excessive, which isn't a surprise due to the nature of the road and volume of traffic passing through the village. This is supported by the data obtained from the VAS sign, and there was evidence of speeding traffic from all directions during the site visit. This suggests that the existing 30mph speed limit terminal signs are being ignored. It is possible to redesign the 30mph terminal signs to create a more conspicuous gateway entry on the approach to the village in both directions.



A gateway that is formalised and informative can contribute to placemaking and safety. If a gateway with signage and speed limit indicators is present it can issue clear instruction to the driver that they are entering into a new area or settlement. A gateway can be made up of village name signs and speed roundels, coupled with surface treatment and slow carriageway markings. Combining these individual interventions will result in speed reduction, which will lead to an increase in overall safety.

A gateway treatment can vary in design, but average speeds can be reduced by approximately 3-4 miles per hour as vehicles enter the village. However, speed reductions of up to 5-6 miles per hour can occur within the first 20 metres of the gateway treatment which results in traffic speed being slower as vehicles enter the village rather than slowing down as they enter the village. There are no specific design requirements of gateway treatments providing the 30mph signs are clear and the correct dimensions (600mm in size and at least 2.1 metres above the ground).

A village gateway will be one of the most effective interventions that do not involve physical traffic calming. Figure 5 provides an example of such a type of design.

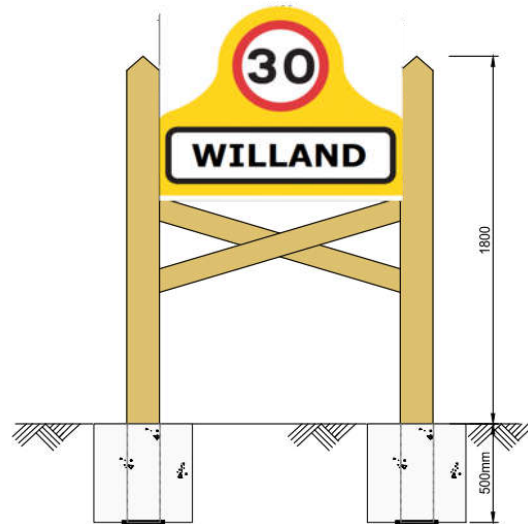


Figure 5 – Example of gateway with speed limit and name plate

The cost of gateway treatments can vary depending on the type of treatment implemented. The most common treatment is the construction of a gate arrangement which is usually in a white colour or natural to contrast against the grass verge. Each gate is likely to cost approximately £2,000. Therefore, four sites are likely to cost approximately **£16,000** as it's important to have the gateway on both sides of the carriageway. Costs can increase depending on the materials used, design used, and where the delivery is from. It is also possible to install road markings to support the introduction of the new speed limit.

Red coloured surfacing can cause the speed limit to be much more visible when overlaying white roundels on the road surface. White road markings can be used to create virtual narrowing, which will cause traffic to slow down as the road appears to be narrower than it is. This can add a further 1-3mph average speed reduction on top of what can be achieved using the gateway treatment on its own. Installing coloured road surfacing and road markings is likely to add an additional **£7,000** on top of the gateway treatment cost.

Implementing gateway treatments on all key approaches to Willand village can be very effective in reducing traffic speed through the village, and it's expected to see a speed reduction of approximately 5-7 miles per hour on the approach to the village if the gateway treatment is combined with the road surfacing and road markings.



Intervention	Safety	Speed	Volume	Impact	Total	Cost
Gateway treatments at 30mph terminals on approaches to Willand	6/10	7/10	3/10	8/10	24/40	9/10

Figure 6 below provides some examples of gateway treatments.



Figure 6 – Examples of speed limit gateway treatments

### 4.3 EXTENSION TO THE 30MPH SPEED LIMIT ALONG SILVER STREET

The close proximity of the 30mph speed limit terminals to the centre of Willand village means there is a possibility of traffic travelling through the village at higher speeds. This is because traffic often waits until reaching a lower speed limit before reducing speed. In more rural environments this can take a long period of time, resulting in vehicles entering the village at speed. Effective speed limits do not start too soon.

Introducing a 30mph speed limit a long distance from a built-up environment will result in a lower compliance rate. This is because a lower speed limit will feel uncomfortable in a rural area. However, there is scope to extend the existing 30mph speed limit on the approach to the centre of Willand travelling from the south, especially due to the two development sites that have been constructed off Silver Street, which have junctions onto Silver Street. Willand Parish Council requested a reduction of these sites at planning stage which was ultimately refused by planners upon the recommendation of Devon County Council Highways due to the size of the site meeting all criteria. This provides justification for a speed limit reduction.



For this proposal to be effective it's vital the 30mph speed limit isn't extended too far from the centre of Willand as this will compromise speed through the village. The layout of the routes into Willand promote excessive speed as there is little deviation. This means that traffic speed will be naturally higher. At specific points along Silver Street Introducing the narrower edge of carriageway marking described in section 4.5 will assist with speed control further still. This will allow the 30mph speed limit to be extended approximately 650m-750m further from the existing 30mph terminal signs.

Figure 7 below provides a plan showing the proposed 30mph extension.

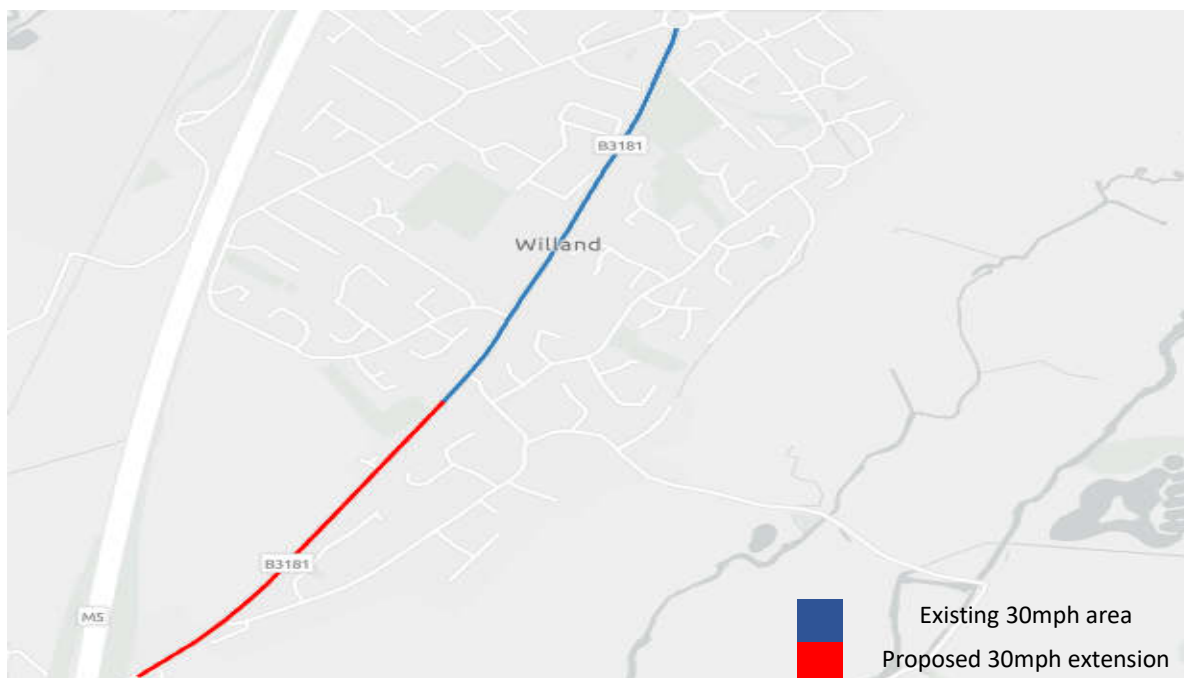


Figure 7 – Existing 30mph limit and proposed extension

Consultation will be crucial to this proposal. Engagement with the local Police is required to gain their support and buy-in. Objections are often received from the Police

where insufficient engagement is undertaken. Ensuring the benefits and justification is provided the Police shouldn't object as the suggested extension is sensible and will improve road safety throughout Willand village. Extending the 30mph speed limit will require a Traffic Regulation Order, which involves legal work.

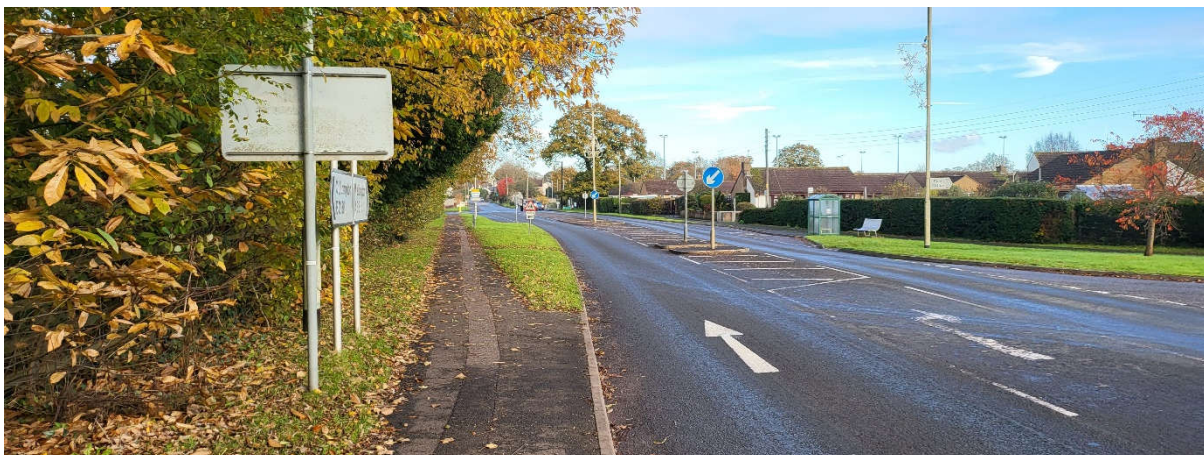
Along with the design work (minimal) and implementation of new signage and road markings, the cost will be in the region of **£10,000-£15,000**. It is recommended to tie this proposal into the terminal gateway proposal discussed in section 4.2.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Extension to the 30mph speed limit along Silver Street	7/10	7/10	4/10	9/10	27/40	9/10

#### 4.4 IMPROVEMENTS TO TRAFFIC SIGNAGE

Traffic signs are implemented to give road users information, instructions and direction. Traffic signs are normally erected along the carriageway and can range in purpose from speed information to leisure or tourism indicators. The position of the sign and the text included on the sign is of great importance as it needs to be in a clear and defined area and its proximity to the point or area of interest is important.

Throughout Willand village, there are a number of signs that are either worn or the sign has become inconspicuous due to overgrown vegetation or infrastructure obscuring the sign. Examples of these locations include Silver Street (southern section) and Willand Old Village. This can create a safety risk, especially if the sign is providing key information such as bend ahead or a school / playground ahead.



In the southern extents of the village prior to the 30mph gateway, there are 40mph speed limit repeater signs in place. Repeater signs for this speed should be 300mm in diameter, which the signs are. However, as these signs are small, they can be easily missed when faded or covered by vegetation. Therefore, additional consideration should be given to the repeater signs as these types of issues increases the opportunity for drivers caught exceeding the speed limit not being prosecuted.



Undertaking a traffic signage improvement regime across the village would be a beneficial and low cost intervention. The responsibility of signage falls within the remit of Devon County council and therefore any intervention would be executed by DCC with the possibility that they may ask for a contribution from the Willand Parish council. Priority should be given to the most important signs, and those in the worst condition. The cost of traffic signage improvements is a low-cost measure. This intervention is likely to cost in the region of **£4,000-£5,000** for all signage across the village. This is a low-cost measure as the only cost is the manufacturing and installation of the signs.

There may be a slight speed reduction through the village as a result of increased visibility of warning signage. This is likely to be in the region of 1-2mph. However, the increase in signage is likely to reduce the possibility of collisions occurring at key points such as junctions and on bends. Further investigation of the Stats 19 form may support this assumption.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Improvements to traffic signage	4/10	5/10	3/10	5/10	17/40	9/10

## 4.5 IMPROVEMENTS TO ROAD MARKINGS

Road markings are effective in giving the road user guidance on where to maintain their lateral position. This contributes to increased awareness of sharing the road with other users. If road markings are not present this promotes the driver to maintain whatever position they feel most comfortable, which is naturally the centre of the road as this is the furthest point from the edge of the carriageway. Once in this position the driver could subconsciously increase speed as he feels safer to do so.

A counter argument to this, is the additional comfort that centre markings can provide. By providing a clear designation, a driver may feel more confident in travelling faster as there is guidance in place for direction. In the experience of 2020 Consultancy, there is a clear link between excessive traffic speed and the comfort a driver has behind the wheel.

Whilst this may appear as a contradiction, in practice, the requirement is to understand what locations would benefit from a centre line and what locations would benefit from no centre line. For instance, a narrow carriageway would benefit from a centre line (assuming there is sufficient width for two-way traffic to pass) as the running lanes would be narrow, and this would position vehicles much closer to the edge of the carriageway. More wider carriageways would benefit from having no centre line as this would reduce confidence of drivers with positioning, which would impact traffic speed.

Where a road has many deviations or bends, there will be more scope to include a centre line to ensure vehicles position themselves in the most appropriate position. No centre line may result in unusual traffic movements, increasing the potential for front on collisions. Centre lines also have benefit in the vicinity of junctions to provide greater clarity on position.



*Figure 10 – Example of road with no centre line*

On a road where it is decided that a centre line isn't required, there may be scope to consider an edge of carriageway marking. An edge of carriageway marking is used to provide greater clarity to drivers in identifying where the carriageway stops to avoid overruns. However, it can be used as a virtual form of traffic calming. Bringing the edge of carriageway marking slightly further into the carriageway, creates an illusion of a narrower road. This will reduce traffic speed as it will provide less confidence to drivers than the wider carriageway without the road marking would.

Figure 8 illustrates an edge of carriageway marking in use to create the impression of a narrower road.



*Figure 8 - Example of edge of carriageway marking*

Providing an edge of carriageway road marking is considered a low-cost option. This proposal does not require any legal work or consultation to be undertaken. Guidance should be sought from Chapter 5 of the Traffic signs Manual on the distances used although no specific dimensions are listed. It is advised to be approximately 225mm to the edge of the carriageway although this can be adjusted where needed. The

appropriate cost for this measure would be **£4,000-£5,000** assuming it is carried out throughout the extents of the village rather than just the centre.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Improvements to road markings	5/10	6/10	3/10	6/10	20/40	7/10

#### 4.6 IMPROVEMENT OF WARNING SIGNAGE THROUGHOUT VILLAGE

Traffic speed throughout the village suggests that there is little or no regard for potential traffic emerging from side roads, household properties, and pedestrians near to the carriageway. With the introduction of advance warning signs this can contribute to an overall decrease in speed in ensuring that the driver is notified prior to a potentially hazardous bend or point of driver action.

There is very little warning signage present within the village and some bends located along the south and north east exit/entrance points could decrease overall vehicle speed entering into the village. The cost of new warning signage is a low-cost measure. This proposal is likely to cost in the region of **£3,000-£5,000**.

There may be a slight speed reduction through the village as a result of increased visibility of warning signage. This is likely to be in the region of 1-2mph. However, the increase in signage is likely to reduce the possibility of collisions occurring at key points such as junctions and on bends. Further investigation of the Stats 19 form may support this assumption.



Figure 9 – Example of possible warning sign

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Improvement of warning signage throughout village	4/10	5/10	3/10	5/10	17/40	7/10

#### 4.7 INSTALLATION OF SPEED INDICATOR DEVICES

Speed Indicator Devices (SID) are one of the most effective non-physical methods for slowing traffic in a specific location. There are a number of different types of SIDs that range in cost but also provide different results. SIDs can be considered an upgrade on the traditional Vehicle Activated Signs that flash “Slow Down” that are likely to see average speed reductions of 1-2mph. SIDs that display the actual speed vehicles are travelling are likely to see average speed reductions of 3-4mph. However, the signs are most effective within the first two to three weeks where drivers are often surprised by the sign illuminating and reduce their speed accordingly. This is especially the case for the signs that display motorists speed as they travel past.

Whilst it's acknowledged that Willand Parish Council have purchased a Vehicle Activated Sign, it's our understanding this is a device that is deployed across the village with parish councillors taking ownership for this process. Although, this is effective, and potentially more effective than a permanent SID, consideration should be given to the installation of permanent SIDs as they do reduce traffic speed 24/7, which can support the work undertaken by the Speedwatch team.

Installing SIDs should be limited to no more than two or three within a village, to avoid the effectiveness of the signs reducing, which may occur through implementation of multiple devices. Having reviewed Willand village in detail, it's felt that Silver Street is the most appropriate road within the village that would benefit from the signs. Willand Old Village isn't likely to experience the same level of excessive speed as Silver Street, so this shouldn't be a priority location. Orchard Way, which is the subject of a proposed 20mph zone intervention (Section 4.18) may benefit from a SID as a traffic calming measure along the road.

Based on the above, it is recommended to implement two SIDs along Silver Street. One for northbound traffic, and one for southbound traffic. The northbound SID should be located on the approach to the village centre (on the assumption the existing 30mph



speed limit can be extended as outlined in section 4.3, whereas the southbound SID should be located approximately 100m north of the junction with Fir Close.

Figure 10 provides a plan that illustrates the suggested locations of the two SIDs.



Figure 10 – Suggested location for SIDs along Silver Street

The cost is dependent on the type of sign purchased. Due to the linear nature of the approach roads from the south and the north and the potential for excessive speed, it is recommended to purchase the higher cost, greater effectiveness SIDs. Figure 11 below provides an example of a Vehicle Activated Sign. These signs are likely to cost in the region of **£2,000-£3,000** per sign. Therefore, two signs will cost approximately **£4,000-£6,000**. However, it's not recommended to pursue these signs.



Figure 11 – Examples of VAS

Figure 12 provides an example of a SID. These signs are likely to cost in the region of **£3,000-£5,000** per sign. Therefore, two signs will cost approximately **£6,000-£10,000**.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Installation of Speed Indicator Device (SID)	7/10	8/10	4/10	8/10	27/40	9/10



Figure 12 – Examples of Speed Indicator Devices (SID)

#### 4.8 IMPLEMENTATION OF 20MPH LIMIT WITHIN RESIDENTIAL STREETS

A 20mph speed limit involves reducing the speed limit along a road(s) to 20mph through traffic signage and road markings only. 20mph speed limits are designed to be self-enforcing, which means the average speed along the road(s) should not be greater than 24mph. Average speed above this means it's unlikely reducing the speed limit through signage and road markings only will reduce the speed limit appropriately.

20mph speed limits are often appealing for villages as they can be an effective safety and speed reduction measure without physical traffic calming measures. Apart from the gateway signs at the start and end of the limit, the only infrastructure required are 300mm repeater signs. However, in villages it's often unlikely to see average speed within the 24mph threshold to consider 20mph speed limits, especially the main routes through the village. Some of the smaller residential roads may have sufficiently low enough speeds, although it is accepted that there will be less traffic on these roads.



There are numerous roads within Willand village that could be suitable for inclusion as part of a 20mph limit scheme. In fact, apart from the key routes within the village, it's likely that the majority of roads will be suitable for inclusion within a 20mph scheme. The roads where it's expected that traffic speed will be too high for a scheme include:

- Silver Street;
- Willand Old Village;
- Orchard Way;
- South View Road;
- Uffculme Road;
- Station Road.

The majority of the residential streets that would be included within a 20mph scheme are cul-de-sacs. The length of these roads means limited if any repeater signs will be required. As many of the roads are connected to each other, it's likely that the 20mph speed limit gateway signs will also be limited. This means costs will be reduced, and it removes the likelihood of street clutter occurring through the additional signage that would be erected in a different situation. Additional signage can be considered though.

Whilst speed isn't likely to be an issue in these roads, the 20mph speed limit will provide reassurance to drivers that they can travel at a slower speed within the residential streets. This will result in a positive road safety improvement. Average speed is still likely to reduce, with a 1-3mph average speed reduction likely, depending on the length of the road, and the existing speed prior to the 20mph limit introduction.



The cost involved in implementing a 20mph speed limit scheme across residential streets in Willand is a low cost measure. The main cost element of the intervention will be the statutory process, which includes the requirement to produce a legal order, and consultation requirement. The likely cost for a 20mph speed limit scheme across residential streets in Willand is likely to be in the region of £10,000. This basis cost is inclusive of statutory traffic orders and signs that are required.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Implementation of 20mph limit within residential streets	7/10	7/10	4/10	9/10	27/40	9/10

#### 4.9 ACCESSIBILITY IMPROVEMENTS THROUGHOUT VILLAGE

It was noted during the site assessment, that there are a number of junctions where pedestrians need to cross the carriageway do not have the appropriate infrastructure in place to make the crossing points accessible to all Non-Motorised Users (NMUs). In Willand village, there are junctions without dropped kerbs, and junctions without tactile paving. Junctions without dropped kerbs will make it extremely difficult for users that rely on wheels, such as wheelchair users, and pedestrians with push chairs to navigate the junction safely. Without dropped kerbs, these NMUs may have to walk in the carriageway where there is a dropped kerb, increasing the risk of collisions.

In addition to these NMUs those that are visually impaired will rely upon the tactile paving to determine suitable locations to cross. Without this in place, there is a risk that they may cross in an inappropriate location, which may result in collisions with

vehicular traffic. Therefore, it's considered important that both dropped kerbs and tactile paving are implemented throughout Willand village at the key crossing points.

Examples of junctions where accessibility improvements are necessary include:

- Foxglove Chase junction with Willand Moor Road;
- Harebell Drive junction with Willand More Road;
- Meadow Park junction with Silver Street;
- Silver Street by the bus stop (southbound direction);
- Silver Street south of junction with Meadow Park;
- South View Close junction with Silver Street;
- South View Road junction with Station Road;
- Station Road outside entrance for Granville Place.



Accessibility improvements will not impact traffic speed through the village. It will also not discourage non-residential traffic from travelling through the village. However, it's likely to see a road safety improvement as all NMUs will be able to cross the road at the most suitable location, and will remove the need to travel along the carriageway.

The cost of the intervention is dependent on the number of sites chosen for inclusion. To convert a full height kerb to a dropped kerb, and implement tactile paving, the cost is expected to be in the region of £2,500. As both sides of the carriageway need to be delivered, this results in an approximate cost of £5,000. The more sites included, the higher the economy of scale should be. This may reduce the cost to £4,000 per site.



For the purpose of Willand village, it has been assumed that 10 sites would be included. This would be sufficient to cover the key junctions that are not currently to the appropriate accessible standard. Some sites only require the tactile paving. This will obviously lower the cost, or allow additional sites to be included. Based on this, a cost estimate of £50,000 has been assumed for the intervention.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Accessibility improvements throughout village	6/10	3/10	3/10	4/10	16/40	6/10

#### 4.10 FOOTWAY WIDENING ALONG SILVER STREET & SOUTH VIEW ROAD

Many villages do not provide footways throughout, which could be for many reasons such as low usage, cost involved, and inconvenience caused. Some villages do have footpaths, but they are insufficient in width. It may be possible for a pedestrian to walk along, but wouldn't allow pedestrians to pass, or wouldn't be accessible for those with pushchairs or in wheelchairs. The availability of roadspace may prevent the construction of a footway or the widening to an appropriate width.

Whilst this is likely to be one of the most common reasons for no footways or below standard footways, it can be possible to construct footways or widen footways. There may be an impact for the area such as a loss of parking, or grass verge, or a reduction in carriageway width. However, compared to the safety benefits footways bring for pedestrians, these issues are not as much of a priority to resolve.

Constructing or widening a footway will have a positive impact on road safety within a village, both on traffic, and pedestrians. Having a footway to use or a widened footway

will provide clear safety benefits for pedestrians. Reducing carriageway widths will cause traffic to slow down, which is how it provides safety benefits for vehicular traffic.



In Willand, there are three locations where there would be benefit in creating or widening the existing footway. Along Silver Street between the Petrol Station and a point just north of the existing 30mph terminal signs the footway is very narrow (approximately 0.8m-1.0). This restricts pedestrian flow, and would cause difficulties for wheelchair users and those with pushchairs, especially if it was a double pushchair. If an adequate vegetation maintenance program was established, it would increase the width of the footway to approximately 1.0m in width. At present, there is a grass verge between the footway and the carriageway which is creating a safety buffer between the 40mph speed limit, which is recommended. However, with the proposed 30mph extension, this provides the opportunity to widen the footway which at present would be justifiable to increase the current footway width.



Along South View Road, there is a section where the footway stops in the vicinity of Bradfords Building Supplies. This is likely due to the access into the site. However, it

also creates a significant safety risk where pedestrians are sharing the same space as large vehicles. It should be possible to extend the footway through this section of South View Road to provide greater protection to pedestrians. This would require vehicles to give-way to pedestrians, which should be the desirable outcome throughout the village where possible, promoting the active travel hierarchy.



West of this point along South View Road when the footway commences again, the width is extremely narrow (approximately 0.6-0.8m) until the junction with Somerville Road. It would be unlikely a wheelchair user or pedestrian with a pushchair could travel along this section of footway. Pedestrians would need to cross the road, where there are no safe crossing facilities, which will increase the potential for collisions with traffic.



All three of these sites should be considered for implementation. Silver Street and the section of South View Road from the Bradfords Building Supplies to Somerville Road will require widening by approximately 0.5m-1.0m where possible. The widening along South View Road will require the carriageway to be narrowed slightly. There is scope to realign the carriageway by widening both sides of the road, although this will increase the costs. Across the Bradfords Building Supplies access, a standard 1.5m wide footway should be achievable, with minimal impact on the carriageway widths.



As previously discussed, it is possible to increase footway widths with adequate vegetation maintenance programs which can increase the width of the footway which at parts has vegetation overgrowth which would improve the current situation albeit further improvements are recommended.

Due to the length of footway along Silver Street, this is likely to be higher cost to widen than the widening along South View Road and the new footway construction across Bradfords Building Supplies. With a minimal amount of risk allocation, a budget of approximately £100,000 will be required for this widening. However, there is a high degree of likelihood that there will be buried utility apparatus within the grass verge, which may require diversion or lowering as part of the works. This will increase costs.

The footway construction across Bradfords Building Supplies, and the footway widening along South View Road from this point to the junction with Somerville Road will likely cost in the region of £75,000, again with minimal risk allocation. This is due to the shorter lengths of construction. However, there is a risk of utility apparatus within this area, which will increase costs considerably. This should be investigated further.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Footway widening along Silver Street and South View Road	6/10	5/10	3/10	8/10	22/40	4/10

#### 4.11 IMPLEMENT VIRTUAL FOOTWAY ALONG WILLAND OLD VILLAGE

There is little to no footway along Willand Old Village on the southern extents of the carriageway on both the eastern and western sides of the carriageway. Within this section of Willand Old Village Road there are limited opportunities for speed and safety interventions due to the constraints of the roadspace such as public highway widths.



To resolve the lack of adequate footway and limited opportunities for speed and safety interventions, it is possible to implement a virtual footway onto the carriageway. This will give pedestrians a more formal place to walk, which will reduce traffic speed as drivers will not feel comfortable driving at higher speeds. This will improve the environment for pedestrians as footways will be recognised and speed will be lower.

A virtual footway is an area marked out for pedestrians using paint as oppose to a full footpath construction. The benefit of this intervention is the low cost along with the flexibility it can provide in locations with limited roadspace. The drawback is the safety aspect as there is no kerbline that provides segregation from traffic.

Although vehicles are likely to use the virtual footway when passing traffic and there are no pedestrians present, it will provide more confidence for pedestrians that they can use the space and vehicles will be cautious when travelling along the road. To make the virtual footway more conspicuous, a different colour surface can be used to differentiate between the carriageway and footway. Traditionally, this is either a green or buff coloured surface. This does increase the maintenance liability.

Figure 13 illustrates a virtual footway along this section of the B3046 using the green surface to assist in the illustration. The image shows that there is sufficient room for the creation of the footway without impacting traffic flow, although the virtual footway has been bought out into the carriageway further than the existing edge of carriageway marking.



*Figure 13 – Example of virtual footway along B3046 to protect pedestrians*

The cost involved in delivering a virtual footway is a low to medium cost, although the cost will increase with the inclusion of the coloured surfacing. A lower cost alternative to the coloured surfacing could be bollards placed throughout the route. This still provides an ongoing maintenance liability as these bollards are often struck and damaged by vehicles who are not aware of the reduction in road space. The implementation of virtual footway along approximately 240 meters of the southern end of Willand Old Village will cost in the region of £45,000-£50,000.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Create a virtual footway along Willand Old Village	7/10	5/10	4/10	6/10	22/40	7/10

#### 4.12 SCHOOL SAFETY ZONE ALONG GABLES RD AND SILVER STREET

It's vital that the most crucial areas within the village are protected from a road safety perspective. Schools are widely acknowledged to be the most crucial area to protect. Schools are often located in areas where it can be difficult to provide the most appropriate traffic calming measures. An example of this is Willand School, which is located along Silver Street. It has been outlined within this study report that due to the nature of Silver Street, certain traffic calming measures should be avoided.

In situations like this, one of the most effective solutions is to provide a School Safety Zone (SSZ). A SSZ is an intervention that operates at specific times of the day, usually during school drop-off, and pick up times. The measures included within a SSZ can vary from site to site, but often involve a yellow backed school warning sign that flashes at the specific times of the day. In addition to this a SSZ often includes an informal 20mph speed limit. This isn't enforceable but relies upon traffic to understand there are lots of children around and speed should be limited.

The SSZ can also be an effective intervention along Gables Road in addition to Silver Street. As Gables Road is an unclassified road, there are additional interventions that can be incorporated into the SSZ. There is an existing priority give-way system, which can be incorporated into a 20mph zone. This would formalise the speed limit alongside the SSZ. Additional signage and road marking can also be considered along the road.



The SSZ would only be in operation between 8am and 9am and 3pm and 4pm. It will involve installing yellow backed school warning signs along with a supplementary plate and flashing wig-wags. The supplementary plate states “School 20 when lights show”. One sign would be installed along Silver Street either side of the carriageway at an appropriate location, and one sign would be installed along Gables Road south of the school. Additional road markings such as SLOW can be incorporated into the SSZ. It is also possible to install a school warning sign on the road surface at the commencement of the SSZ. Figure 14 provides an example of the SSZ sign.

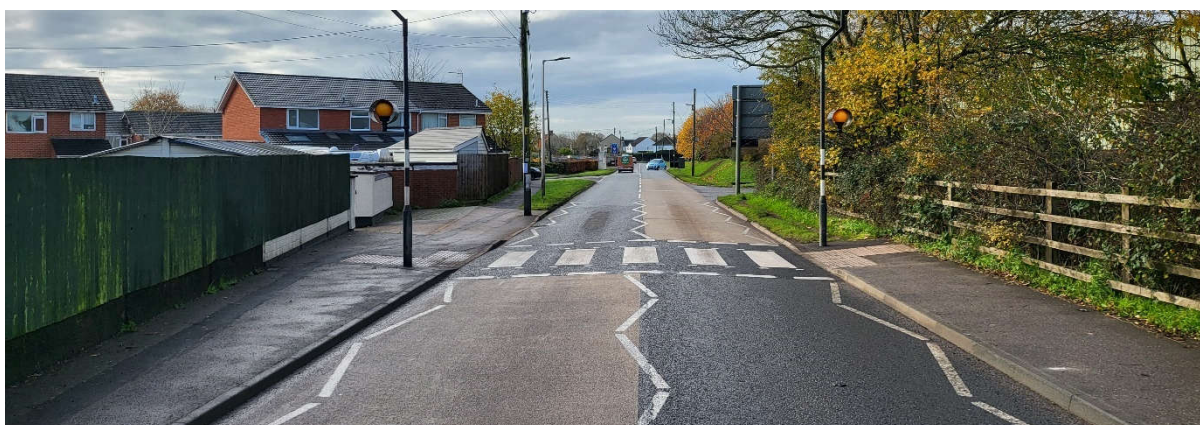
Figure 14 – Example of SSZ sign

The cost of implementing an SSZ is low. Each SSZ sign is likely to cost in the region of £2,000 to manufacture. Road markings will likely cost in the region of £1,000. A small amount of design work is required. The cost of implementing a SSZ along Silver Street and Gables Road is likely to be in the region of **£8,000**.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
School safety zone along Gables Road and Silver Street	6/10	7/10	4/10	6/10	23/40	9/10

#### 4.13 CONVERT EXISTING ZEBRA TO HUMPED CROSSING ON SOUTH VIEW ROAD

There is an existing zebra crossing located along South View Road, which provides a safe facility for pedestrians to cross the carriageway. As well as enhancing safety for pedestrians, a zebra crossing should result in a reduction in traffic speed. The majority of vehicles are likely to reduce their speed when approaching a zebra crossing regardless of any pedestrians waiting to cross, due to the potential for pedestrians to approach the zebra prior to the vehicle passing through.



Although a zebra crossing is likely to reduce traffic speed, it's possible to reduce traffic speed further by raising the crossing to create a humped crossing. A humped crossing involves raising the carriageway to the same level as the footway. This often makes the crossing point more accessible for pedestrians, due to the retained level surface with the footway, and also slows traffic down further due to the hump.

This results in traffic speed slowing down on the approach and through the crossing regardless of whether pedestrians are waiting to cross. A humped crossing can assist in drainage design and overcome difficult locations where dropped kerbs and driveways can cause difficulties siting the crossing. Alternatively raised tables could be constructed either side of the crossing, which means traffic speed will be slower still upon reaching the crossing. A humped crossing can also be more conspicuous.

Figure 15 provides an example of a humped crossing for effective traffic calming.



Figure 15 – Example of humped crossing

The cost of converting a zebra crossing to a humped zebra crossing is a medium cost measure, although there could be additional considerations that may impact costs. The cost to provide convert the crossing to a humped crossing is likely to be in the region of £20,000. An additional cost of approximately £10,000 may be needed to cover the costs associated with kerbing, drainage, and the run off channels. There is a small possibility that utility apparatus may be impacted, which will increase costs further. However, this is unlikely.

We anticipate a speed reduction of approximately 4-6mph on the approach to the crossing with this intervention.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Convert existing zebra to humped crossing on South View Road	6/10	8/10	4/10	6/10	24/40	7/10

#### 4.14 DELIVERY OF UNCONTROLLED CROSSING POINT ALONG SILVER STREET NEAR JUNCTION WITH FIR CLOSE

Traffic volume and speed seems excessive throughout Silver Street, as the main route designated for traffic, and the straight alignment of the road. This can cause significant issues for pedestrians that require to cross the carriageway. Whilst there are two signalised crossings, which is above the standard usually associated with villages, this isn't helpful if pedestrians want to cross the carriageway away from these points.

An example of this situation is the bus stop that is located on the southbound lane along Silver Street adjacent to Fir Close. There is no pedestrian crossing point located

near this bus station, and there is no footway on the southbound lane. This means that pedestrians either have to walk in the grass verge that isn't considered safe, or cross at the point of the bus stop, which is also likely to be a safety risk due to the position of the bus stop and the location of the Fir Close junction opposite the bus stop.



It is recommended to consider implementing an uncontrolled crossing point at this location to enable pedestrians from the nearby residential streets to safely cross the carriageway to access the bus stop. It's unlikely that a controlled crossing point would have sufficient demand to justify the implementation. Guidance suggests that crossing points should be consistent to avoid confusion. As there are two signalised crossing points along Silver Street, a controlled crossing point should therefore be signalised.

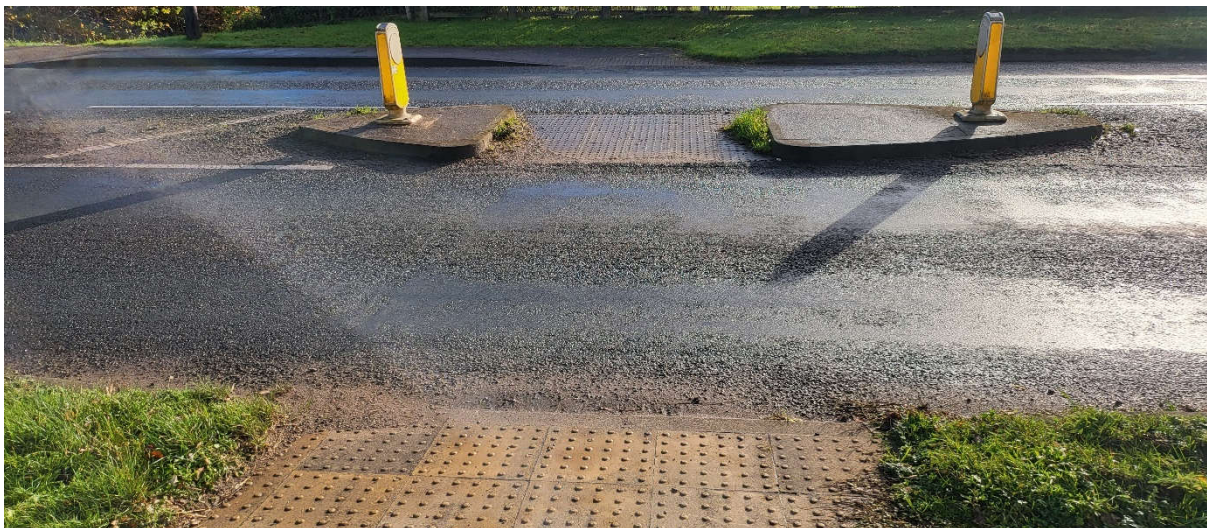
As the demand is unlikely to be sufficient, the most suitable alternative would be an uncontrolled crossing point. This is where a kerb is dropped, and tactile paving is provided to demonstrate to pedestrians the most suitable crossing location. This intervention would require adjustments on the southbound lane to provide a point for pedestrians to access the bus stop. This could be as simple as a hard standing, or a more formalised footway construction. The cost implications will dictate the approach.

An uncontrolled crossing can incorporate a central island, which enables pedestrians to cross halfway. This requires additional space within the public highway. A central island could be implemented at this location, although it would require the realignment of the carriageway, and the relocation of the bus stop from a lay-by to on-carriageway. This would likely be welcome from the bus company, as this is usually the preference due to the easier pull away, as lay-bys require gaps in traffic to manoeuvre.

Figure 16 provides an example of an uncontrolled crossing point without a central island, and figure 17 provides an example of a crossing point with a central island.



*Figure 16 – Example of uncontrolled crossing without central island*



*Figure 17 – Example of uncontrolled crossing with central island*

The approximate cost for the installation of an informal crossing along Silver Street at the junction with Fir Close is likely to be in the region of £10,000-£20,000. This is the cost based on the assumption that a central island isn't included as the traffic flow and pedestrian demand is unlikely to justify the additional cost. Including the central island will require an additional £10,000. The difference in cost estimate is based on the type of provision provided for the southbound lane. Including a hard standing will result in a cost closer to £10,000, whereas a more standard footway construction will increase the cost closer to £20,000 (small section of footway to connect bus stop only).



Intervention	Safety	Speed	Volume	Impact	Total	Cost
Uncontrolled pedestrian crossing point along Silver Street for bus stop near junction with Fir Close	5/10	4/10	3/10	7/10	19/40	8/10

#### 4.15 PRIORITY GIVE-WAY ALONG SILVER STREET

Within this report, there has been several references made to Silver Street and the need to consider this road separately to other roads within the village due to the classification as part of the road network. Physical traffic calming measures such as speed cushions, and priority give-way systems should be avoided due to the potential need for the road to carry large volumes of traffic during road closures on the network, as discussed previously which is the case when there are issues on the M5 between junctions 27&28.

However, there is one location along Silver Street where this guidance could be overlooked. Approximately 50m south of the junction with Fir Close there is a pinch point along Silver Street where there appears to be a regular occurrence of on-street parking. Whilst on-street parking is often an effective form of traffic calming, it can also create a road safety risk without intervention. In this location there is a small strip of footway, which allows the parked vehicles to mount to create half-on half-off parking. There is logic to this approach, however, it creates a situation where vehicles are unsure whether two-way traffic can pass. During the site assessment, this location was monitored, and there were a few close misses observed with larger vehicles.



Whilst this situation will assist reduce traffic speed at this point within Willand, there is a concern that it may increase the likelihood of a collision occurring if drivers are not

aware of this narrowing, especially at night. There is scope to formalise this layout with a kerbed buildout on the eastern side to create a priority give-way system. A lower cost measure could be to provide advance warning signage that the road narrows.

A priority give-way system would be a medium cost measure and is likely to require a budget of approximately **£20,000-£25,000** to implement with design costs and any associated works. Priority give way-systems work best with a by-pass for cyclists so they do not have to enter into the narrowed carriageway. The costs include the relevant signage and road markings needed including the priority and give way signage. A, priority give-way systems require illumination such as street lighting, which is in place.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Priority give-way along Silver Street	6/10	7/10	6/10	7/10	26/40	7/10

#### 4.16 PUBLIC REALM ENHANCEMENTS OUTSIDE POST OFFICE

One of the most effective methods of reducing traffic speed without the introduction of physical traffic calming measures such as speed humps and priority give way systems is through changing the environment in a substantial way. Examples of this would include the type of road surface or the surrounding buildings / landscape. Without necessarily realising it, the majority of drivers will reduce speed when they pass schools or see lots of children nearby.

In rural villages, the changing of landscape isn't always a viable solution to achieving a reduction in speed due to the lower footfall and facilities because of the size of the village. This is one of the primary reasons there is often speed issues within rural villages. As a large number of rural villages are not within the strategic road network, it does provide the opportunity to consider adjusting the road surface to achieve the perception of a changed environment. The most common and effective method of achieving this is changing the colour of the road surface i.e., to buff coloured.

The contrast between the traditional tarmacked surface and the new buff coloured surface causes a driver to slow down, especially if the surface coloured is combined with other interventions such as the creating of a shared environment or removal of road markings. To achieve the speed reduction, it is important that the areas of surface treatment are restricted. If the entire surface through a village was changed, the impact

would be much smaller. As well as this, surface treatments usually come with higher maintenance liabilities, which the local highway authority will likely resist.

Therefore, within Willand village, only the most crucial areas have been considered for this type of intervention. The most suitable location for this type of intervention would be along Willand Old Village within the vicinity of the Post Office. This area could be considered the hub of the village and the centre point. It is recommended to locate the change of surface at the point where the carriageway opens up near the post office to the south and continue the surface treatment to a point where the carriageway returns to the narrow width. This is a distance of approximately 35 metres.



Figure 18 below provides an example of the impact a surface colour treatment can have within a village environment. This is the approach recommended at this site.



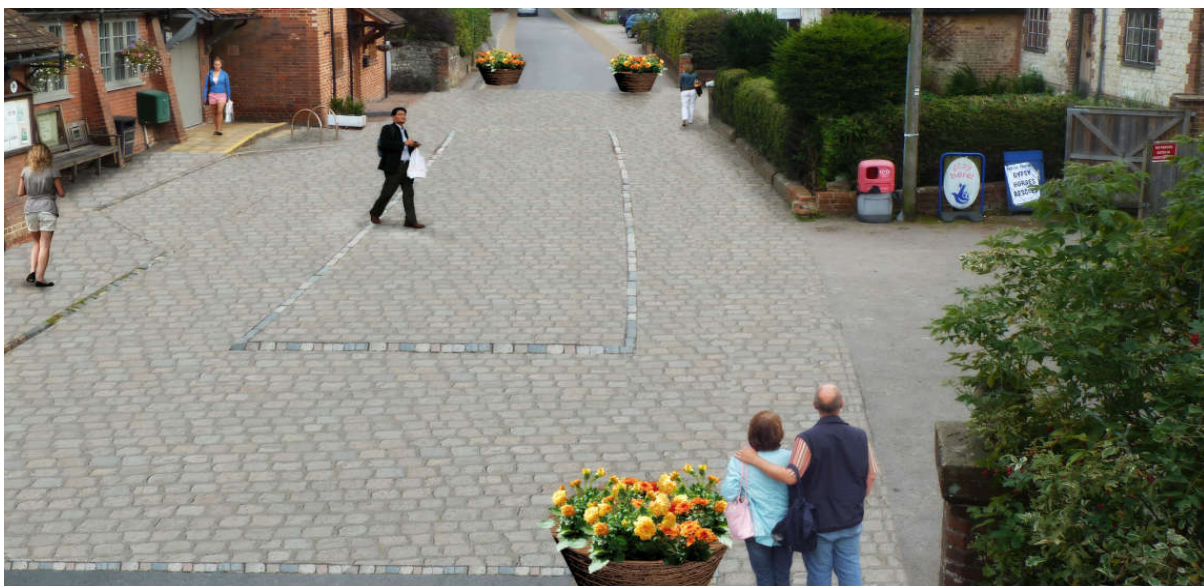
*Figure 18 – Example of changing the surface colour to enhance the environment*

An alternative to changing the surface colour would be to change the surface material instead. This could incorporate a change of colour as well i.e. sand coloured block paving. There are several different surface materials that can be considered, ranging from high quality materials such as granite setts, and yorkstone paving to slightly lower quality materials such as natural stone, and concrete blocks. Willand is situated within a conservation area so any changes or improvements would need to adhere to constraints imposed and specific planning controls.

The decision on the type of surface material should be based on numerous considerations. Certain materials are more defined in specific colours, which may make the use dependent on surrounding materials and colours. As expected, the higher quality materials such as granite setts, and yorkstone paving are more costly to install, both the purchasing and construction, and the ongoing maintenance.

Due to the higher costs, the use of these surface materials is far more infrequent than tarmac and other lower cost materials. Apart from major regeneration schemes often reserved for city and town centres, it's rare for continued use of the materials over a wide area. Instead, the materials are used sparingly in conjunction with lower cost materials such as tarmac. It can be effective to use the higher quality materials with coloured road surfacing, which can create an enhanced environment with a much lower cost than only using the materials.

Figure 19 provides an example of a surface treatment using different materials to change the environment, which would be as effective as changing the surface colour.



*Figure 19 – Example of changing the surface material to enhance the environment*

This is an intervention that could be considered in other key areas for the impact and change in environment. The most suitable alternative location would be along Silver Street outside the school. Changing the surface colour could be incorporated into a School Safety Zone, or a 20mph zone, highlighting the importance of the area for pedestrian flows, especially at school drop-off and pick up times.

The cost of implementing a surface enhancement intervention is high. There is a large amount of work required to implement this proposal. This includes design work, work around drainage provision, and the commuted sums involved as a result of delivering a higher quality surface treatment. To implement the intervention within the vicinity of the above mentioned areas is likely to cost in the region of approximately **£75,000 - £80,000**. Proceeding with the surface material would likely be a higher cost intervention, and would cost in the region of £100,000-£120,000 for the same area.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Public realm enhancements outside Post Office	6/10	7/10	4/10	9/10	26/40	5/10

#### 4.17 CONSTRUCTION OF MINI ROUNDABOUT JUNCTION OF SILVER STREET & MEADOW PARK

As already highlighted within this report, Silver Street is the primary route through Willand village, and has a B-class classification. This means the road is designed to export traffic through the village from the north to the south. As a B-classified road, consideration should be given to the use of the route. It's likely to be used as a diversion route during any wider road network issues such as road closures. Therefore, the impact of physical traffic calming interventions should be considered in greater detail. Plastering speed cushions / tables or priority give-way systems along the route will not receive support from the LHA due to the requirements of Silver Street.

However, as the main route through the village, it's apparent that Silver Street is subject to the most traffic issues, such as excessive speed, dangerous driving, and percentage of non-residential vehicles using the village as a cut through onto further destinations. This makes the need for intervention along Silver Street higher than other streets within the village. The straight alignment of Silver Street encourages speed.

Between the roundabout junction of Silver Street and Uffculme Road (to the north of the village) and the petrol station along Silver Street (to the south of the village) there are four junctions along Silver Street. Approximately halfway along Silver Street there is a junction with Meadow Park. This point can be classified as an ideal position for an intervention that would reduce speed due to the location within the village and the nearby trip generators including the school. Figure 4 illustrates that within the last five years, there has only been one reported collision at the junction. However, this junction creates an opportunity to reduce speed significantly by redesigning the priorities.

Although the existing layout of the junction appears adequate from a safety perspective, the continuation of the street without the requirement to slow down will contribute towards excessive speed. The most sensible solution based on the known issues and classification of the street is to convert the existing give-way junction into a mini roundabout. This would cause traffic to reduce speed to give-way appropriately.

A mini roundabout is most effective when there is a fairly even split of traffic movement. If there are heavy flows in particular directions, it cannot be effective and can become a safety risk in itself. The traffic flow, and capacity of the junction of Silver Street and Meadow Park was analysed as part of the transport assessment undertaken for the Land at Meadow Park planning application. This highlights that although the junction works in the current T-junction layout, the traffic flow outputs provide reassurance that there is a suitable amount of flow from all directions to consider a mini roundabout.

It wouldn't be considered safe to simply install the mini roundabout in the middle of the junction as there would be no deflection. Therefore, the positioning of the junction would need refinement and development with Devon County Council. It may be necessary to introduce some parking restrictions to support the mini roundabout.

The effectiveness, and therefore the suitability of a mini roundabout as an intervention for Willand village is heavily reliant on the design, to achieve the deflection. Without deflection for the north-south traffic movement along Silver Street, speed may not reduce, which will increase the potential for collisions to occur with traffic exiting from Meadow Park. Therefore, the design should include building out a kerb line and shifting the junction slightly further west than the existing give-way arrangement.

Figure 20 below provides a typical layout of a mini roundabout and how it would work at the junction of Silver Street and Meadow Park. Figure 21 demonstrates how adding

some deflection into the mini roundabout will impact traffic movement through the junction. This ensures that traffic proceeds through the junction at slower speeds.

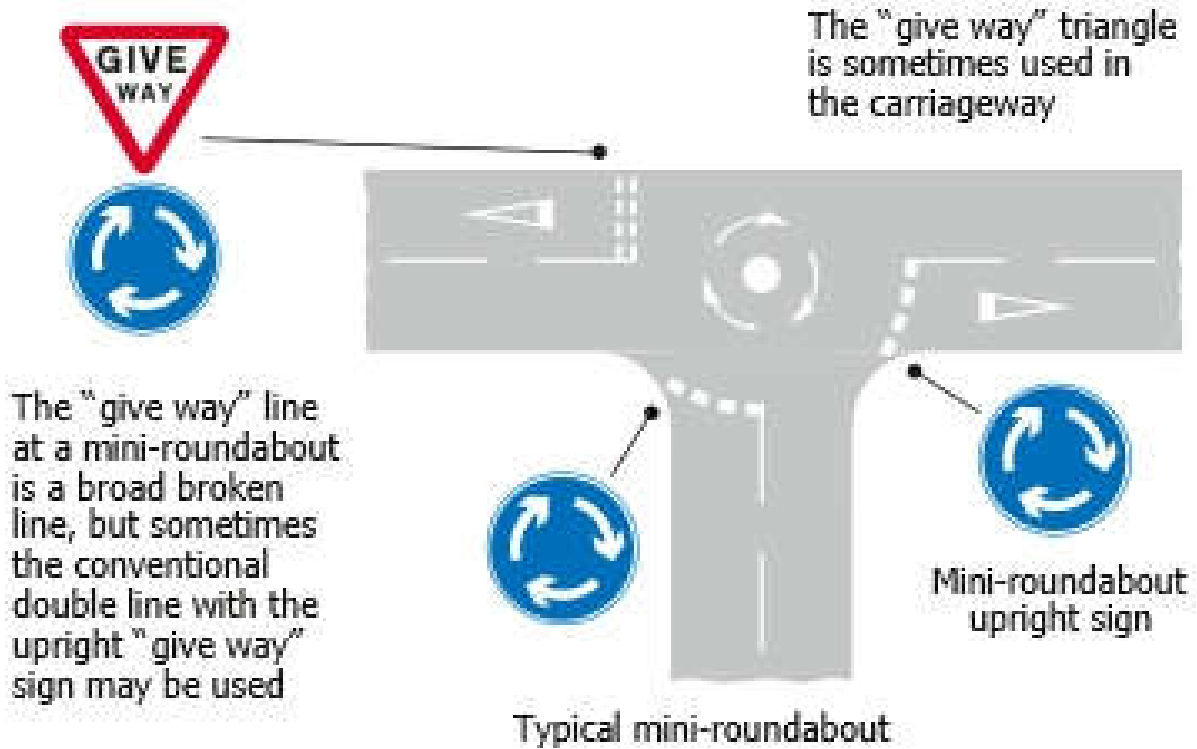


Figure 20 – Typical example of a mini roundabout

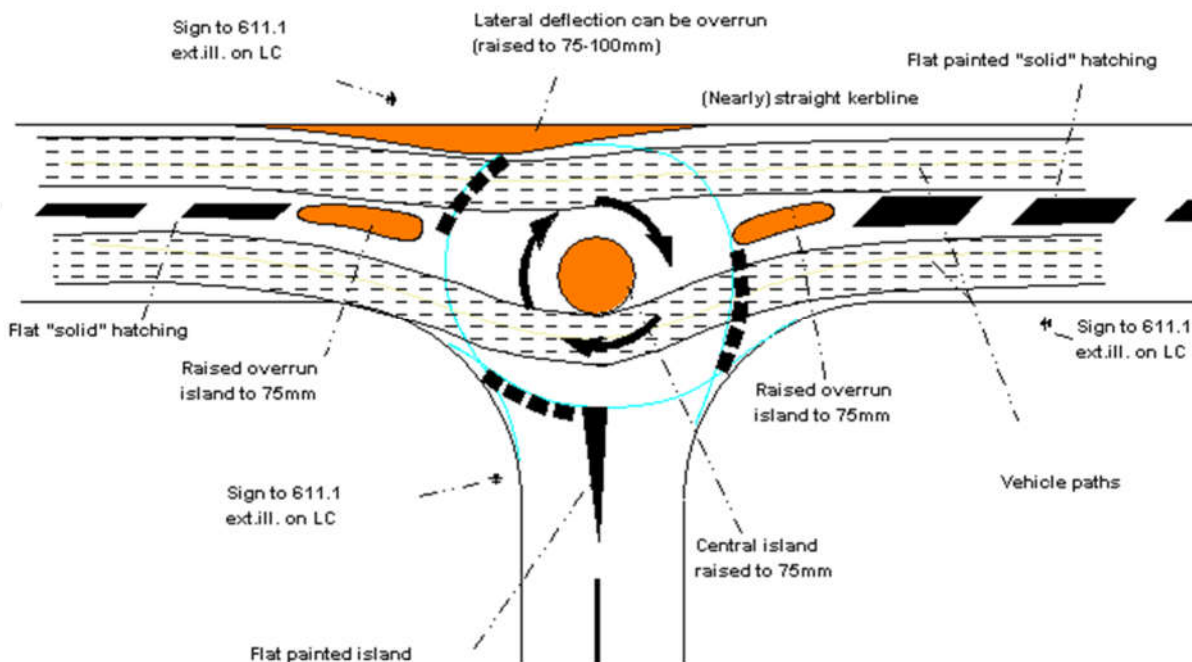


Figure 21 – Illustration of traffic movement through junction with deflection

Mini roundabouts are a very effective form of traffic calming as long as they are implemented correctly as traffic in all directions will need to slow down. Deflection is

crucial to control speed through the junction, and it is helpful to raise the mini roundabout circle to create a dome as this reduces traffic travelling over the centre of the junction. Sight lines are important to ensure traffic can be seen, and illumination is required to ensure it can be seen during darkness. At this junction it's acknowledged that there is some existing access and off-street parking that will need consideration during the detailed design stage to ensure the appropriate sight lines are achieved.

The cost of implementing a mini roundabout is dependent on the style and the required infrastructure. A standard style relies predominately on road markings. The physical works will be the deflection and any infrastructure requirements. As part of the design work, it's vital that swept path analysis is undertaken to ensure all vehicle movements can be safely undertaken within the junction footprint. An overrun area may be required for larger vehicles. It may also be necessary to acquire a small parcel of land if there is insufficient room for all vehicle movements. It is the understanding of 2020 consultancy that a similar recommendation was presented to planning authorities at the initial stages of the Meadow Park housing development but it was deemed unnecessary at the time by the highways department within Devon County Council.

The cost for this intervention is likely to amount to approximately **£75,000** on the assumption that no land acquisition is required. This cost estimate is based on a traditional road marking design with 75mm dome roundabout and deflection built into the east of Silver Street. This cost is higher than other junctions due to the extents of the existing junction footprint, which includes the hatching and right turn filter lane.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Mini roundabout at junction of Silver St & Meadow Park	4/10	9/10	6/10	9/10	28/40	5/10

Figure 22 provides a sketch showing how a mini roundabout may work at the junction of Silver Street and Meadow Park.





Figure 22 – Example of mini roundabout at junction of Silver Street and Meadow Park

#### 4.18 20MPH ZONE ALONG ORCHARD WAY / WILLAND MOOR ROAD

In Willand, there are pockets of dense residential housing located on either side of Silver Street. Within the area to the east of Silver Street there are opportunities to improve existing provision, which will increase overall safety for residents and visitors alike. Consideration should be given to a 20mph zone located along Orchard Way / Willand Moor Road. A 20mph zone differs from a 20mph speed limit. 20 mph zones require traffic calming measures (e.g. speed humps, and priority give-way systems) or repeater speed limit signing and/or roundel road markings at regular intervals, so that no point within a zone is more than 70m from such a feature.

A 20mph zone can include physical and/or non-physical traffic calming measures. The effectiveness of a 20mph zone is far greater when physical traffic calming features are used. These physical traffic calming measures can be both high cost and low cost. Examples of low-cost measures include speed limit signage and road markings (carriageway repeater signs and edge of carriageway markings) whilst examples of high-cost measures include priority build outs, speed humps and road narrowing.



Willand Moor Road is approximately 400m long and currently has three existing high-cost traffic calming measures in place. In comparison, Orchard Way has no existing infrastructure in place to support traffic calming and is approximately 650m long. To reduce overall cost but ensure effectiveness is high it is recommended to implement this intervention with a mixture of both high cost and low-cost infrastructure. In keeping with the requirement to implement measures at least every 70m, it is recommended to include three high-cost measures approximately 250-350m apart and a number of low cost interventions to support this within Orchard Way.



Statistically, 20mph zones with physical measures demonstrate greater speed reductions of approximately 7mph against zones which don't have physical measures, which is more likely to be 1-3mph depending on the nature of the road. This makes the intervention one of the most effective at reducing traffic speed within the village.

Along Orchard Way, it is recommended to implement three or four larger scale traffic calming measures. The most effective measures to consider along Orchard Way include priority give-way measures, and road narrowings. Whilst speed cushions are an effective traffic calming measure, there are drawbacks with these. Providing a

priority give-way measure at either end of Orchard Way would allow both directions to give way along the route. A road narrowing can be provided between both of these.

As Willand Moor Road has three existing traffic calming measures, it's recommended to only consider one larger scale traffic calming measure. Due to the location of the existing measures, it's recommended to consider implementing this measure near the playground that is located between Elderberry Way and Lupin Way. An effective position would be near the junction with Greenwood. Using the junction would allow consideration of a raised table, which is a lot more effective than a speed cushion.

Figure 23 illustrates the extents of the proposed 20mph zone along Willand Moor Road and Orchard Way, and approximate positions for the larger scale calming measures (shown in red), as well as the existing measures that can be used for calming (blue).



Figure 23 – Proposed 20mph zone Orchard Way/ Willand Moor Road

A 20mph zone varies in cost due to a number of variables such as the length of the road, number of features, the type of features, location, and consultation involved. This means estimating a cost can be difficult at this stage. The cost of the 20mph zone signage and road markings will be low. £5,000 should be sufficient for this aspect. For the purpose of this study implementing a 20mph zone along Orchard Way / Willand Moor Road is likely to cost in the region of **£80,000-£100,000**, which is based on the inclusion of both larger scale physical traffic calming measures, and smaller measures.

Implementing a 20mph zone along Orchard Way / Willand Moor Road will be very effective in reducing non-residential traffic this is due to the primary reasoning for non-residential traffic is to decrease journey time or to increase journey coherence for

which a 20mph limit would inhibit. Based on observations onsite, there appears to be a proportion of traffic that travel through Willand Old Village, Orchard Way, and Willand Moor Road when travelling south to north through the village to access Uffculme Road. These traffic calming measures will reduce traffic along this route due to the inconvenience the traffic calming measures will bring.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
20mph zone along Orchard Way / Willand Moor Road	7/10	8/10	7/10	6/10	28/40	5/10

#### 4.19 TRAFFIC SIGNAL SHUTTLE SYSTEM WILLAND OLD VILLAGE

Willand Old Village is a street that is connected to Silver Street to the north, and to the south, with the street running parallel in between. As the name suggests, this was the main village route prior to the expansion of the village, and the construction of Silver Street. As the old village route, there is much more limited space, with properties, and frontages located directly onto the carriageway, with limited space for infrastructure.

Whilst there is generally limited space within the extents of the old village, there are some pinch points where there is further limitations on the roadspace. One such example is along Willand Old Village between the junction with Orchard Way, and the Post Office. At this point, two-way traffic cannot pass unless it is two small vehicles. In addition to this, there are no footways, which means pedestrians are walking within the carriageway, and no off-street parking results in on-street parking further reducing the available space for vehicles to pass each other, and pedestrians safely.

Due to the constraints described above, traffic speed isn't likely to be an issue at this location. However, safety will be a concern due to the limited roadspace and visibility, especially around the bends where there are no forward sight lines. This means that traffic is required to approach with additional caution. It should be noted that this will have a positive impact on traffic speed though.

The most effective intervention to resolve the roadspace, and visibility issues would be to implement a shuttle traffic light system. This is where the carriageway is restricted to one-lane of traffic at a time, with traffic lights instructing traffic on priority. This is a system most commonly used on bridges and tunnels when space is limited.

Figure 24 provides an example of a traffic signal shuttle system in operation on a bridge.



*Figure 24 – Example of a traffic signal shuttle system in operation on a bridge*

Implementing the a traffic signal shuttle system along Willand Old Village between the junction with Orchard Way, and the Post Office will improve safety for traffic and pedestrians, as it will remove any vehicular conflict. The most suitable location for the signals will require further refinement, especially with household accesses, and side roads within the vicinity. On initial inspection, the northern stop line and traffic signals could be located just south of the junction with Old Village Road, which would prevent the need for three-way lights.

The southern stop line and traffic signals could be located in line with the post office and parking facilities, that may need formalising. It should be noted that this area is within a conservation area, which means additional consideration will be required.

Figure 25 provides a plan illustrating the position of the traffic signals, and stop line for the traffic signal shuttle system along Willand Old Village near the Post Office.



Figure 25 – Proposed extents for the Willand Old Village traffic signal shuttle system

Due to the intervention restricting traffic along this part of Willand Old Village to one direction at a time, it's likely that there will be adequate space for the implementation of a virtual footway. This will enable pedestrians to proceed through the shuttle system without having a concern on where vehicular traffic will be located on the carriageway.

This proposed intervention is the highest cost intervention included within this study. This is due to the infrastructure required, as well as the requirements to adjust the existing roadscape such as formalising the Post Office parking, and road markings. A power source will be required for the traffic signals, with a feeder pillar required to connect the power from the street lighting. Ducting underneath the carriageway will may be required that could impact the utility apparatus, which will increase costs.

Intervention	Safety	Speed	Volume	Impact	Total	Cost
Traffic signal priority system along Willand Old Village near Post Office	8/10	8/10	8/10	9/10	33/40	2/10

## 5.0 THE PROPOSALS

Table 4 shows a list of the 20 proposed interventions along with the overall cost effectiveness score for each proposal. This has been calculated by combining the effectiveness score (safety, speed, volume, and impact score) to create an overall effectiveness score, and dividing the total by four, to create an average effectiveness score. This score is then combined with the cost score to create an overall score out of 20. For example, extending the 30mph speed limit along Silver Street scored 7/10 for safety, and speed, 4/10 for volume, and 9/10 for impact. This provides an effectiveness score of 27/40, but an average overall score of 7/10. Combining the 7/10 with the cost score of 9/10 results in an overall intervention score of 16/20.

This prevents the highest cost interventions becoming higher priority interventions, which is likely to occur without this combination, due to the benefits these interventions will bring. For example a traffic signal shuttle system scores high across all the effectiveness criteria, but is likely to cost in the region of £250,000, making it unlikely for implementation compared to other interventions included within the study.

The highest rated interventions for Willand village achieve an overall score of 16/20. Three of the 20 interventions achieve this overall score, all of which can be classified as low cost interventions (cost score of 9/10). One intervention scored 15/20, which was also a low cost intervention (cost score of 9/10). One intervention scored 14/20, which was a medium cost intervention (cost score of 7/10).

There were four interventions that scored 13/20. These are a mixture of low cost interventions (2x 9/10, and 1x 8/10), and medium cost interventions (7/10). The highest rated interventions that can be considered high cost (£50,000 or more) achieve an overall score of 12/20. This illustrates how this cost effectiveness system works, and ensures lower cost interventions that are effective are prioritised over higher cost interventions that are also effective, and low cost interventions that aren't as effective.

The lowest scoring intervention (Widen footway along South View Road southern side (between Bradfords Building Supplies & Station Road) achieved an overall score of 9/20. This is the only intervention that scored less than 50%.

Table 4 provides all 20 interventions, and the overall intervention score out of 20.

Ref	Proposal	Overall Intervention Score
1	Gateway treatments at 30mph terminals on approaches to Willand	15
2	Extension to the 30mph speed limit along Silver Street	16
3	Improvements to traffic signage	13
4	Improvements to road markings	12
5	Improvement of warning signage throughout village	13
6	Installation of Vehicle Activated Signage SID	16
7	Implementation of 20mph limit within residential streets	16
8	Accessibility improvements throughout village	10
9	Widen footway along Silver Street	10
10	Create a virtual footway along Willand Old Village	13
11	School safety zone along Gables Rd and Silver Street	12
12	Convert existing zebra to humped crossing on South View Rd	13
13	Construct footway along South View Rd (outside Bradfords)	10
14	Uncontrolled pedestrian crossing point along Silver Street for bus stop near junction with Fir Close	13
15	Traffic calming where on-street parking is Silver St	14
16	Widen footway along South View Rd southern side (between Bradfords Building Supplies & Station Rd)	9
17	Public realm enhancements outside Post Office	12
18	Mini roundabout at junction of Silver St & Meadow Park	12
19	20mph zone along Orchard Way / Willand Moor Road	12
20	Traffic signal priority system along Willand Old Village near Post Office	10

Table 4 – Prioritised proposals for Willand



Figure 26 provides a plan showing the locations for each of the interventions using the reference number from table 4 above. For instance, 1 demonstrates the proposed location of the 30mph gateway treatments. Please note that reference 3,4,5,7,8 have not been included in this plan as these proposals would involve intervention throughout the village rather than at specific points within the village like those shown below are.

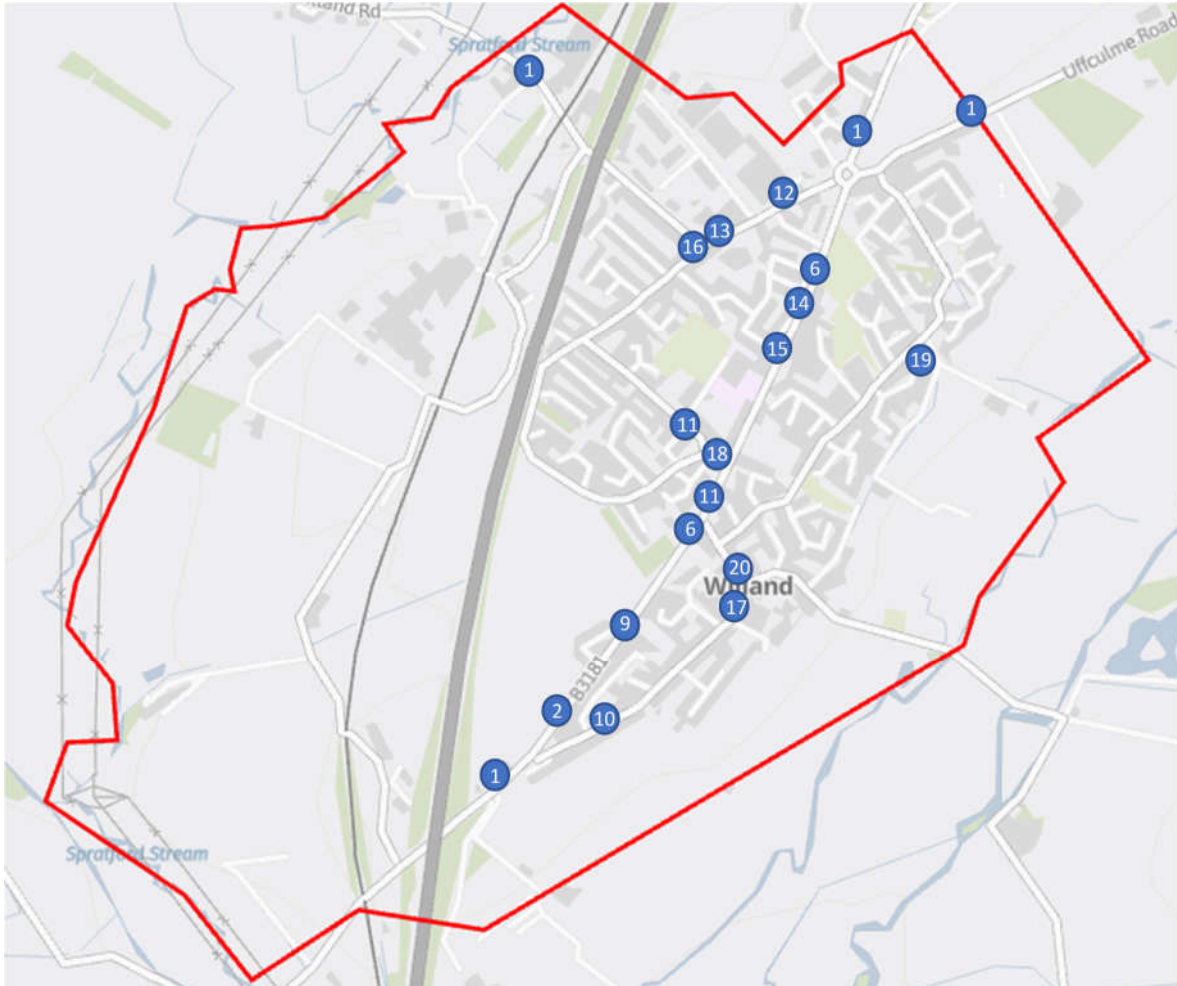


Figure 26 – Location plan for interventions

## 6.0 PACKAGE OF MEASURES

Each of the interventions described in section 5 should achieve a speed reduction through the village. Some interventions will achieve a greater speed reduction than others. On the whole, these will be related to cost. The most effective application of works would be to implement a package of measures, which collectively contribute to achieving a greater reduction in speed and overall, a greater improvement in safety.

Hence, this means that if improvements to road markings were introduced coupled with Speed Indicator Devices, then this would lead to a greater improvement in speed reduction, as opposed to implementation of just one proposal alone. The more measures combined; the greater overall speed reduction is likely to be achieved.

Some measures will work better in combination than others. Therefore, it is crucial that measures that complement each other are grouped together. For example, installing the 30mph gateway treatments, extending the 30mph speed limit along Silver Street, and Speed Indicator Devices would work well together as this would provide a consistent message along Silver Street, which is subject to the highest volume of traffic. This in addition to improvements along Willand Old Village would again reaffirm to the driver that they are travelling within a 30mph speed limit regardless of location.

Therefore, the ambition for Willand Parish Council should be to implement work package of measures that contain a number of interventions. The works package progressed should be largely based on the budget available. Willand Parish Council should focus on the overall intervention score, as appose to the cost solely. For instance, if only £50,000 was available to address safety in the village, it wouldn't be recommended to progress a School Safety Zone as this would utilise all the available budget, leaving no funding for additional interventions in the village.

To support the Parish Council understand what interventions will make the most suitable work packages based on the availability of budget, 2020 Consultancy have produced three work package examples based on low, medium, and high cost budget.

Please note, the approximate costs shown in tables 5-7 are based on a likely average. However, some interventions have been adjusted where there is flexibility in the budget. For instance, a 20mph zone could be delivered for £70,000 but could be delivered for £80,000, or £90,000, based on the type of measures if funding permitted.

Measure	Approximate Cost
Gateway treatments at 30mph terminals on approaches to Willand village (based on two village approaches)	£10,000
Extension to the 30mph speed limit along Silver Street	£8,000
Installation of 2x Speed Indicator Devices	£6,000
Implementation of 20mph limit within residential streets	£10,000
School safety zone along Gables Rd and Silver Street (reduced cost scheme)	£16,000
<b>TOTAL COST</b>	<b>£50,000</b>

Table 5 – Example works package with budget of £50,000

Measure	Approximate Cost
Gateway treatments at 30mph terminals on approaches to Willand village (based on two village approaches)	£10,000
Extension to the 30mph speed limit along Silver Street	£8,000
Installation of 2x Speed Indicator Devices	£6,000
20mph zone along Orchard Way / Willand Moor Road (reduced cost scheme)	£50,000
<b>TOTAL COST</b>	<b>£74,000</b>

Table 6 – Example works package with budget of £75,000

Measure	Approximate Cost
Gateway treatments at 30mph terminals on approaches to Willand village (based on two village approaches)	£10,000
Extension to the 30mph speed limit along Silver Street	£8,000
Installation of 2x Speed Indicator Devices	£6,000
20mph zone along Orchard Way / Willand Moor Road (reduced cost scheme)	£60,000
Create a virtual footway along Willand Old Village (reduced cost scheme)	£14,000
<b>TOTAL COST</b>	<b>£100,000</b>

Table 7 – Example works package with budget of £100,000

Tables 5-7 demonstrate that three interventions have been included in all three work package examples. This is because they are the highest scoring interventions, and based on the cost and effectiveness, it is the belief of 2020 Consultancy that these should be prioritised, regardless of the available budget. The tables also highlight interventions that have a reduced cost scheme included. These are interventions that can be value engineered to reduce budget. For example, a School Safety Zone has been estimated to cost approximately £50,000. However, reducing the measures included can enable a lower cost version to be implemented i.e. £16,000.

## 7.0 NEXT STEPS

As part of the feasibility report, Willand Parish Council have the opportunity to provide their comments and any recommendations that they are particularly keen to see progressed further. These comments will be provided below once they have had the opportunity to discuss the feasibility report in detail.

Following this, the Parish Council should then escalate the findings of this report to the local highway authority, Devon County Council. It is advisable to carry out some community engagement within the village prior to meeting with Devon County Council to discuss that some or all the costs may need to be supplied by Willand Parish and that support for the proposals would need to be achieved.

The Parish Council hold a budget that may fund or contribute towards a works package. This should make the process around gaining approval from Devon County Council (DCC) more straight forward compared to the process that would require DCC to fund the interventions entirely. However, it is recommended for the Parish Council to see contributions towards the interventions from DCC as part of their remit as the local highway authority. This would then enable more interventions to be delivered. For instance, if DCC provided £50,000 assuming Willand Parish Council could allocate £50,000, this would provide a budget of £100,000 for interventions.

This feasibility study has highlighted potential interventions that is expected to improve road safety within Willand village. To progress the study further, in conjunction with identifying funding opportunities, it is recommended that Willand Parish Council consider developing all or some of the interventions to provide greater reassurance on the deliverability and community support alongside commencing dialog with DCC.

Based on this, there are three key steps that the Parish Council can undertake to support this process. These include:

- **Consultation** - This would be an informal consultation to stakeholders within the local community. This can include residents, and businesses. The feedback received from stakeholders can support existing recommendations or provide alternative actions due to experience or research already undertaken.
- **Surveys** – Further surveys can be commissioned that can contribute supporting data and understanding into the improvements that can be made

within the village. Active travel surveys and discussions with targeted groups can support what the village wishes to achieve.

- **ATC Survey** – Although data obtained from the VAS within the village is accurate, further conclusive evidence can be achieved through the commissioning of a village wide ATC (Automatic Traffic Count) survey. This additional data at locations such as Willand Old Village, and South View Road would help support the data already accumulated.

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