

New Road and Ford Road, Yealmpton, Devon

Traffic Speed Study Report

on behalf of Yealmpton Parish Council

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I INTRODUCTION

I.1 About this Report

- I.1.1 Callidus Transport and Engineering (the consultant) have been commissioned by Yealmpton Parish Council (the client) to undertake a study to look at traffic speeds, and in particular proposals to implement a 20mph speed limit on New Road and Ford Road, Yealmpton.
- I.1.2 Yealmpton is a village and civil parish situated in the South Hams district of the county of Devon. The study corridor is shown in Figure I-1 and its location in the wider area is shown in Figure I-2.
- I.1.3 The study follows a previous application to Devon County Council (DCC), the Local Highway Authority (LHA) for a 20mph zone to be introduced in Yealmpton. This was turned down by the LHA. Whilst they confirmed general support for 20mph zones, they considered that on the arterial routes, speeds were probably too high for them to support these being 20 mph without the addition of traffic calming measures.
- I.2 Understanding the Brief
- I.2.1 In accordance with the study brief, the area of New Road and Ford Road has been raised as being of particular concern and is therefore the focus of this report.
- I.2.2 The Parish Council has received requests for the introduction of a 20mph speed limit on the B3186 New Road and Ford Road in the village. The current speed limit is 30mph. The road is an important arterial route to the village and provides a route south to Newtown Ferrers as well as other locations on the south Devon coast. The section of the B3186 through the village can be considered to be ‘urban’ in character. It has a footway along most of its length within the village but alters from sometimes

being on the east side of the road to the west side of the road. Much of the road has residential frontages and is an important pedestrian route to the village for residents from the south, including school pupils walking to/ from their homes.

- I.2.3 Changing the speed limit can only be carried out by the LHA, which is DCC, using their Traffic Regulation Order (TRO) powers. However, 20mph speed limits are becoming commonplace in urban areas, including villages.
- I.2.4 There is a difference between the implementation of a 20mph speed limit and a 20mph zone. In this case, a 20mph speed limit is proposed as it will be specific to New Road and Ford Road.
- I.2.5 Therefore, it is important that a scheme has both local support and is also supported by evidence.

I.3 Methodology

- I.3.1 To better understand the issues, a site visit was undertaken by Robert Spriggs of Callidus on Wednesday 4th March 2024. Councillor Craddock and the Clerk of the Parish Council attended and explained the issues to be considered.
- I.3.2 In preparing an objective assessment of the request for a 20mph speed limit, this study uses the Department for Transport’s (DfT) Speed Limit Appraisal Tool (SLAT). The tool is suitable for appraising speed limits including those classified as ‘urban - 20mph, with and without traffic calming’. It states that ‘...village 20mph can be appraised using the tool, but it should be noted that there were no observations available for such cases when the forecasting relationships were developed’.
- I.3.3 A survey of residents by Yealmpton Parish Council in 2022 showed that 79% of those who responded were in favour of 20mph speed limit, with 14% opposed, and 7% undecided¹. There were differing views about whether they should be on all roads

or selected roads.

- I.3.4 Measures to help enforce lower traffic speeds have also been considered by this study. Concept designs have been prepared using Computer Aided Design (CAD) and applying highway standards in accordance with those set out by the DfT.
- I.3.5 Following the introduction, the report is divided up into the following sections:
- Chapter 2 – baseline data;
 - Chapter 3 – policy guidance and background;
 - Chapter 4 – proposed supporting schemes
 - Chapter 5 – SLAT analysis; and
 - Chapter 5 – Summary and recommendations

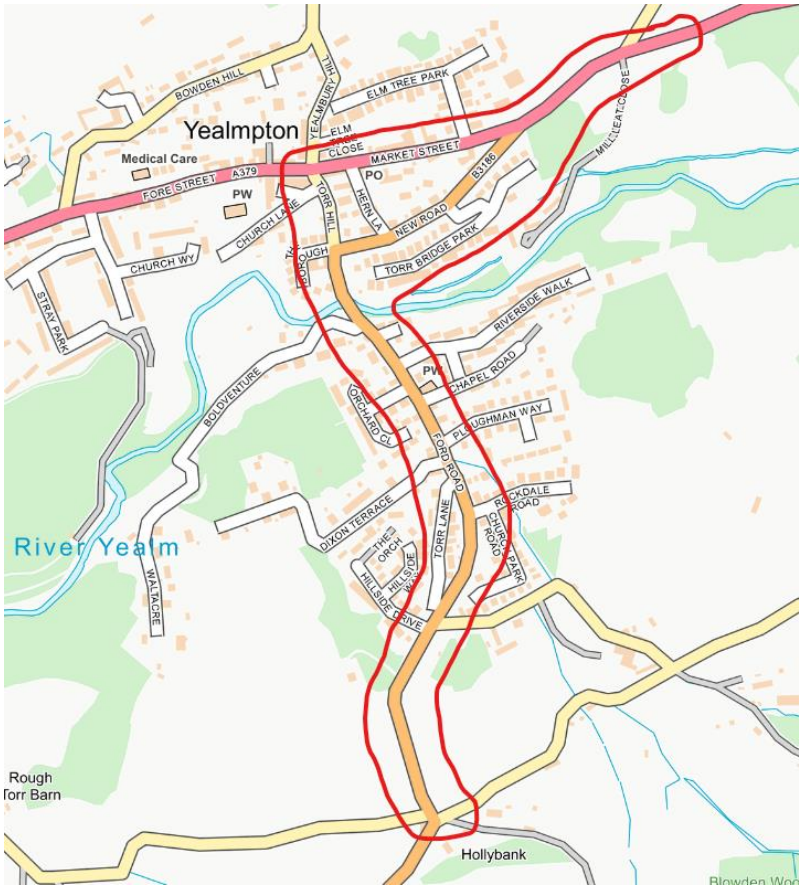


Figure I-1: Study Corridor (Map Source: OS)

¹ Yealmpton Parish Council ‘Yealmpton Village Survey 2022 Results’



Figure 1-2: Location of Yealmpton (source: OS)

Project Aim:

To undertake a traffic speed study, focusing on a potential 20mph speed limit, that will deliver a set of solution ideas to address the specific issues identified by the Parish Council that relate to transport and movement, especially in relation to the road safety of vulnerable road users along New Road and Ford Road in Yealmpton.

2 BASELINE DATA

2.1 Introduction

2.1.1 This section of the report describes the data that has been collected as part of the study. Primary traffic data has been collected for the study and this has been augmented with other data obtained from the Parish Council, the County Council and other sources.

2.1.2 The primary data collection consisted of two Automatic Traffic Counters (ATCs) that were laid at the following two locations between Friday 22nd March and Thursday 28th March 2024:

- Site 1: New Road (lat 50.348345 lon -3.995764)
- Site 2: Ford Road (lat 50.344388 lon -3.995613)

2.1.3 The ATC locations are shown in Figure 2-7. The counters provide traffic volume data that is classified by vehicles type, and also traffic speed. These are reported on in the following two sections.

2.2 Traffic Volumes

2.2.1 Figure 2-1 and Figure 2-2 shows the traffic volumes by day.

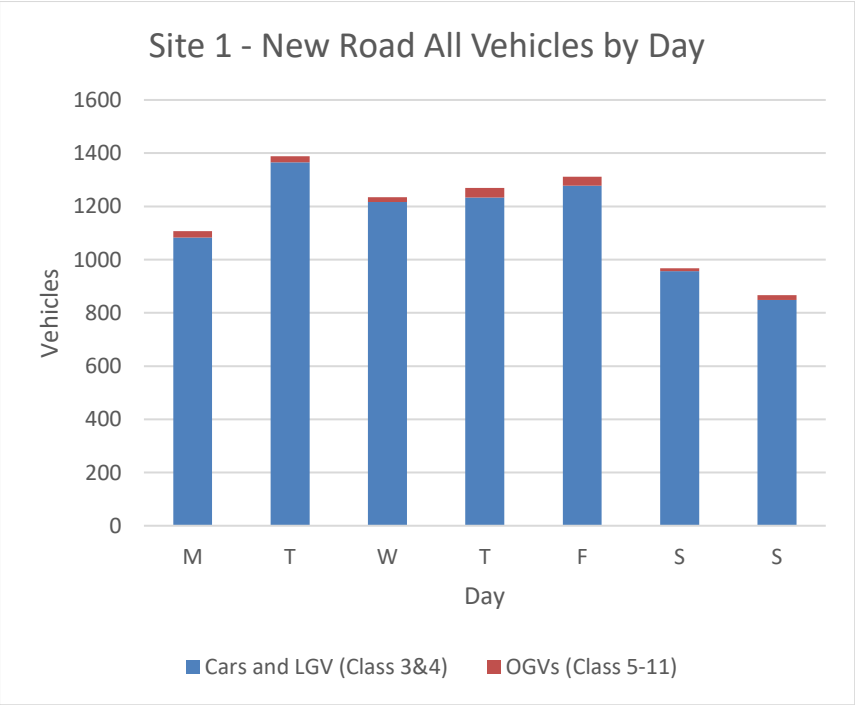


Figure 2-1: Site 1 – New Road traffic volumes by day

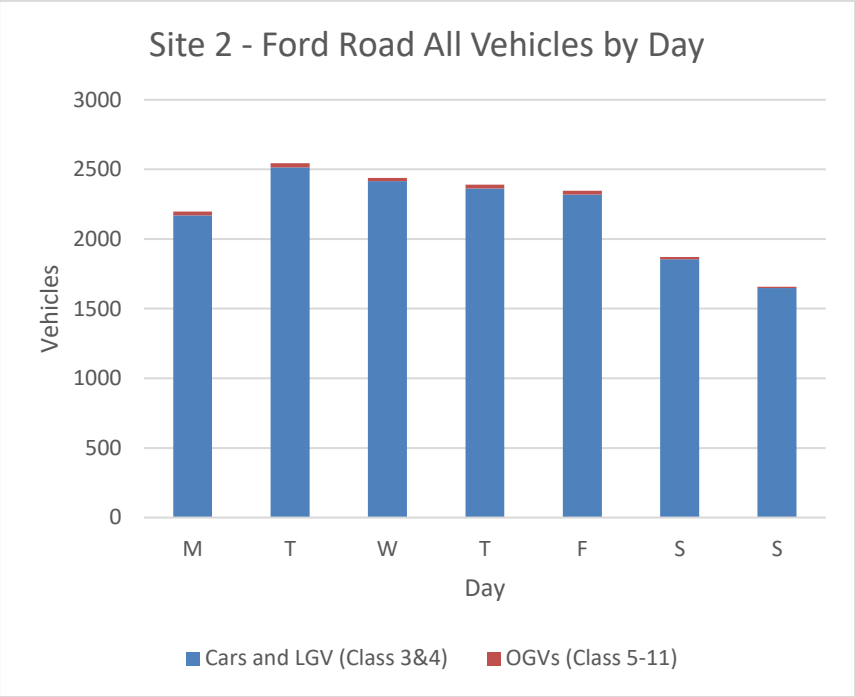


Figure 2-2: Site 2 – Ford Road traffic volumes by day

2.2.2 The charts shows that a Tuesday is the busiest day of the week for traffic for both New Road and Ford Road. Ford Road is the busier of the two roads with over 2,500 vehicles two-way on a Tuesday. On New Road, there are just under 1,400 vehicles two-way on a Tuesday.

2.2.3 The traffic data showed that the traffic on Ford Road was about equal between the north and the south movements. However, on New Road, the traffic flow eastbound was about 25% higher than the traffic flow westbound. This was consistent across most days of the week. The reasons for this difference are not clear.

2.2.4 Traffic volumes by hours of the day, taken from the busiest day which is a Tuesday, are shown in Figure 2-3 and Figure 2-4. This shows that the traffic volume by hour for New Road is consistently higher eastbound than the westbound flow except after 1800 in the evening. Ford Road has more traffic northbound in the morning and more traffic southbound in the afternoon.

2.2.5 Ford Road has higher hourly flows than New Road. New Road has peak periods between 0800-0900 and 1500-1600, whilst

Ford Road has longer peak periods between 0800-1000 and 1500-1800.

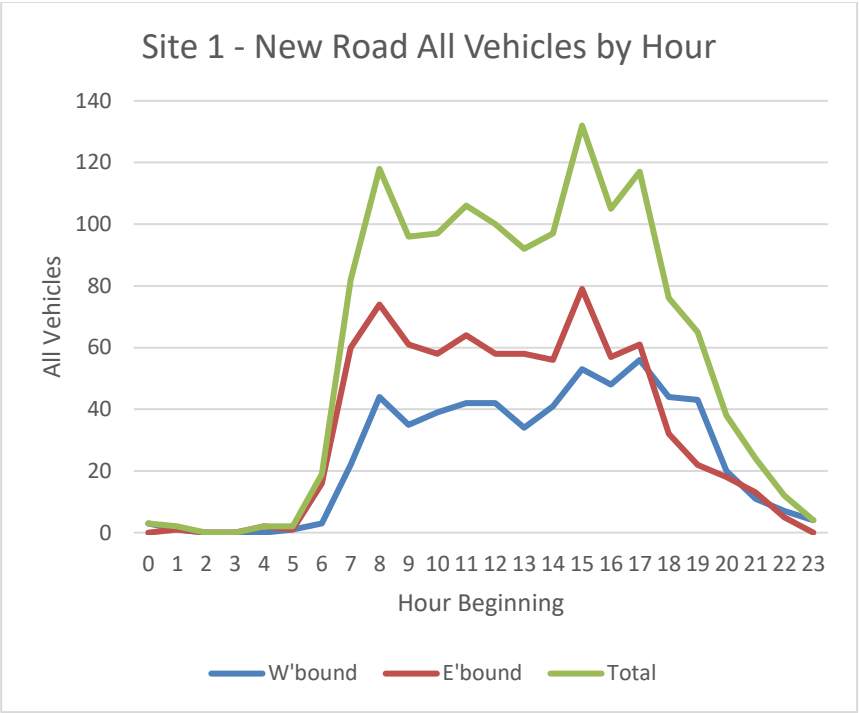


Figure 2-3: Site 1 – New Road traffic volumes by hour

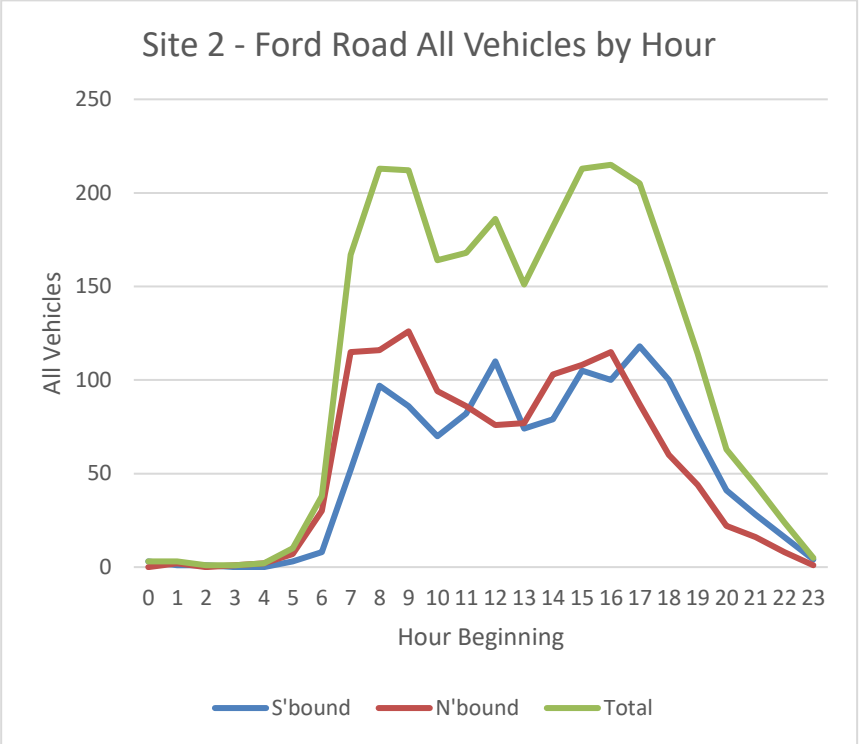


Figure 2-4: Site 2 – Ford Road traffic volumes by hour

2.2.6 The SLAT tool reported on later in this study uses Annual Average Daily Traffic (AADT) data as input. For New Road, the AADT volume was 2,327 vehicles (1,414 eastbound and 913

westbound). For Ford Road, the AADT volume was 4,207 vehicles (2,245 northbound and 1,962 southbound).

2.3 Traffic Speeds

2.3.1 The existing speed limit through much of the built-up area of Yealmpton is currently 30mph. The start of the speed limit from the south is on Ford Road and is located just south of the junction of Ford Road with Hillside Drive. The speed limit is indicated by terminal signs, the locations of which are shown in Figure 2-5.



Figure 2-5: Existing 30mph Signs in Yealmpton

2.3.2 Traffic speed information has been obtained from the ATCs at sites 1 and 2. In addition, traffic speed data has been provided for the study by the Parish Council from a speed monitoring/display sign located on Ford Road. Both are reported on here.

2.3.3 The 85th percentile speed (the speed at or below which 85 percent of the drivers travel on the section of road) and average mean speeds for New Road and Ford Road obtained from the ATCs are shown on in Table 2-3. This is for the 7-day period over which the ATCs were operating.

Location	Direction	Section Length (km)	85 th ile Speed (mph)	Average Mean Speed (mph)
New Road (Site 1)	Eastbound	0.30	32.9	27.2
	Westbound	0.30	30.6	25.4
Ford Road (Site 2)	Northbound	0.52	34	28.5
	Southbound	0.52	33.5	28.2

Table 2-1: Mean Vehicle Speeds

2.3.4 The table shows that by taking the average mean speed, vehicles are travelling less than the 30mph speed limit. However, the 85th percentile speed indicates that for Ford Road, the speeds are in excess of the speed limit. For New Road, the 85th percentile speed is close to the speed limit.

2.3.5 The data provided by Parish Council from the speed monitoring/display sign is shown in Table 2-2. This is for Ford Road only and is taken for the period 01/01/23 to 31/12/23. It is for traffic northbound.

Percentile	MPH
30 th	26.5
50 th	28.7
85 th	33.1
95 th	35.7
Average	28.7
Highest	53.2
Total Vehicles	116877

Table 2-2: Monitoring/ display sign (source: Parish Council)

2.3.6 The data from the monitoring/ display sign is consistent with that of the ATC data.

2.4 Local Highway Authority

Highway Boundary

2.4.1 The LHA is DCC. They are responsible for all of the roads in and around the Yealmpton area which are Public Highway. This

includes New Road and Ford Road.

2.4.2 Figure 2-6 shows those roads that are public highway (hatched in brown). Any works to those roads would need to be undertaken under a highway legal Agreement with the LHA unless they are undertaken by the LHA.

Previous DCC 20mph Application

2.4.3 Yealmpton Parish Council applied to DCC for the implementation of a 20mph speed limit on Bowden Hill, Yealmbury Hill, New Road and Ford Road in July 2022. The application was unsuccessful.

2.4.4 The main reasons for the low score (10 and under) were that the collision data was low and the roads did not lend themselves to 20mph². It was considered that there were insufficient visual cues to indicate to drivers that it would be appropriate to travel at 20mph.

2.4.5 A review of the scoring system used by DCC also indicates that roads which have 85th percentile speeds in excess of 31mph score poorly in the DCC assessment.

2.5 Road Safety

2.5.1 Personal Injury Accident (PIA) data has been obtained using the online service CrashMap and also data from DCC's Vision Zero Public Map. Data for the most recent 5-year period (between 2018 and 2022) has been obtained. The information is summarised in Table 2-3. The locations of the accidents are shown in Figure 2-8.

2.5.2 Pedestrians, cyclists and motorcyclists can be classified as vulnerable road users. In terms of severity, there was only one accident recorded and this was classified as 'slight'.

2.5.3 Given the reasonable level of traffic in the local area, the number

² DCC 20mph projects prioritised for delivery in 2022/23

of accidents recorded can be considered to be low. The roads and junctions in the local area do not appear to display any of the characteristics associated with a road safety problem.

Date	Location	Severity	Casualties	Vehicles
31/07/2019	Tor Hill (B3186) 29 meters from the junction with Boldventure	Slight (PIA 1)	1	1

Table 2-3: Road Accident Data for the most recent 5 year period (Source: CrashMap)

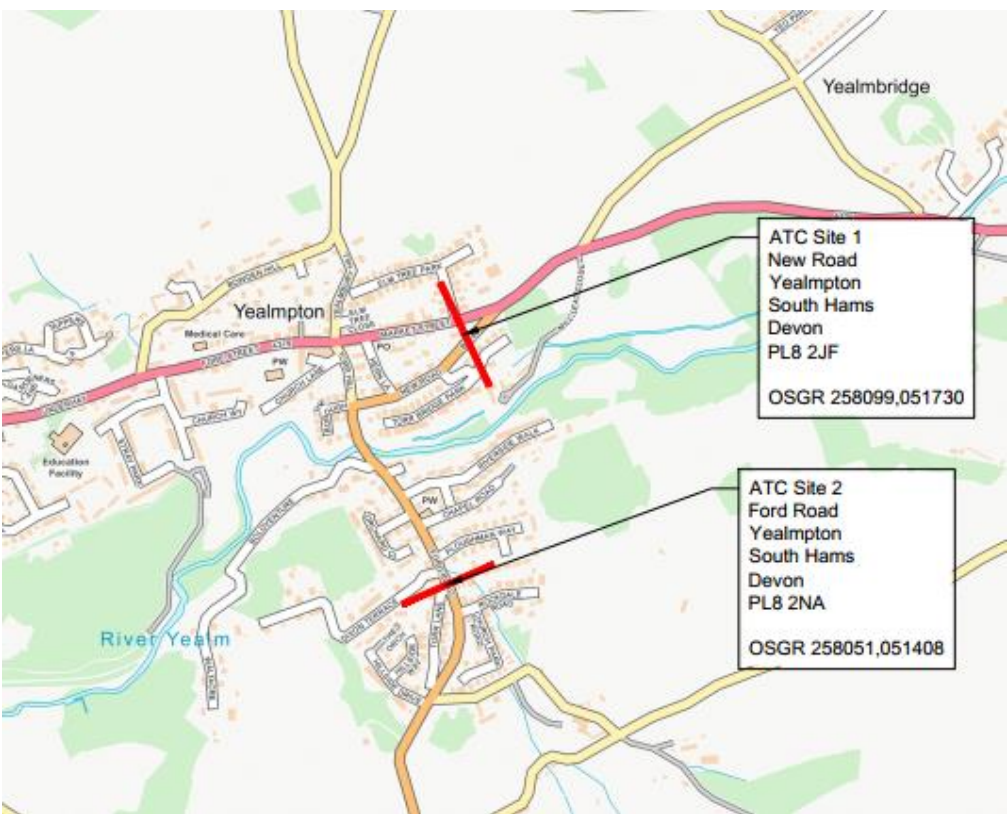


Figure 2-7: ATC locations

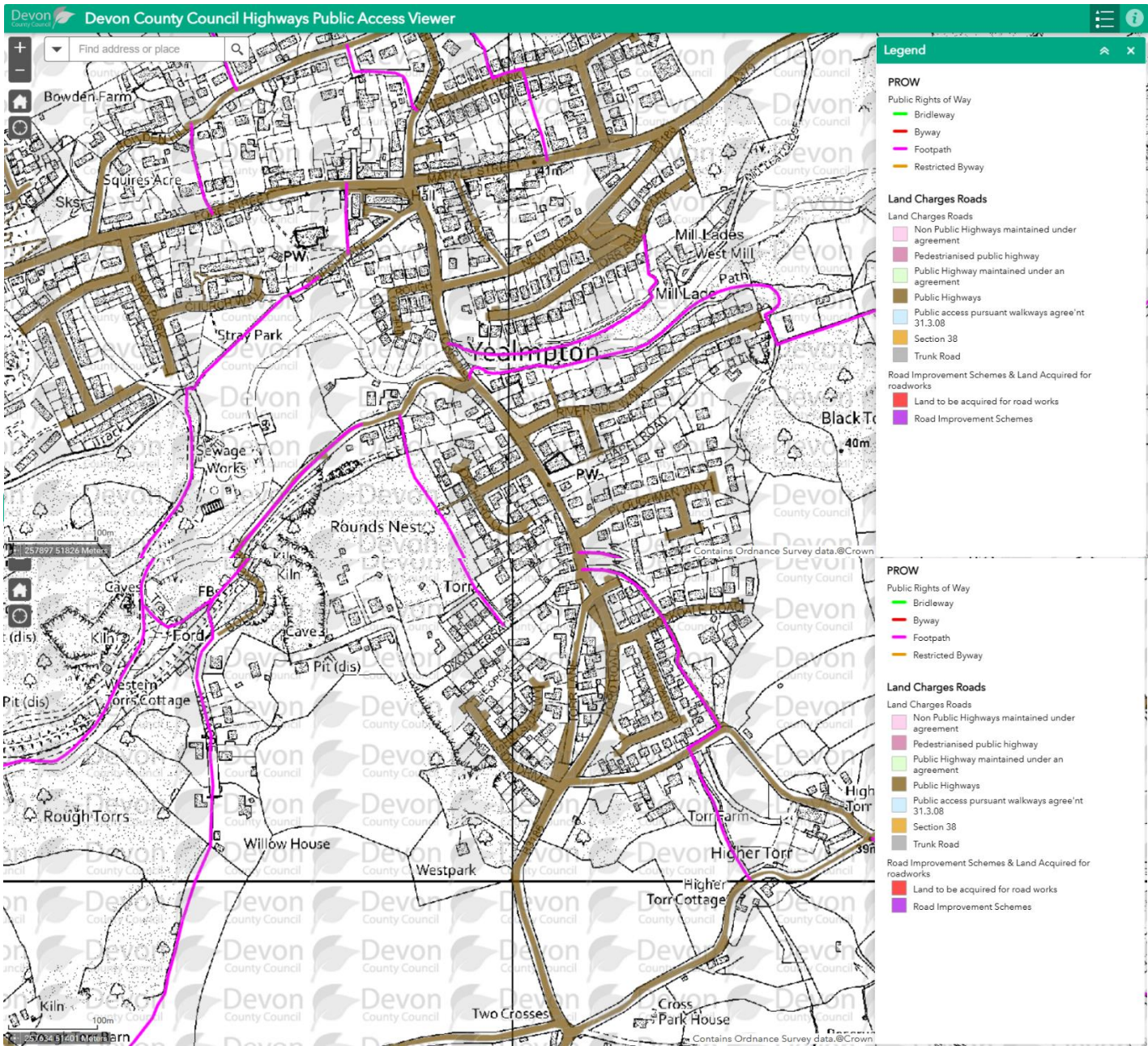


Figure 2-6: Public Highway Boundary (Source: DCC)

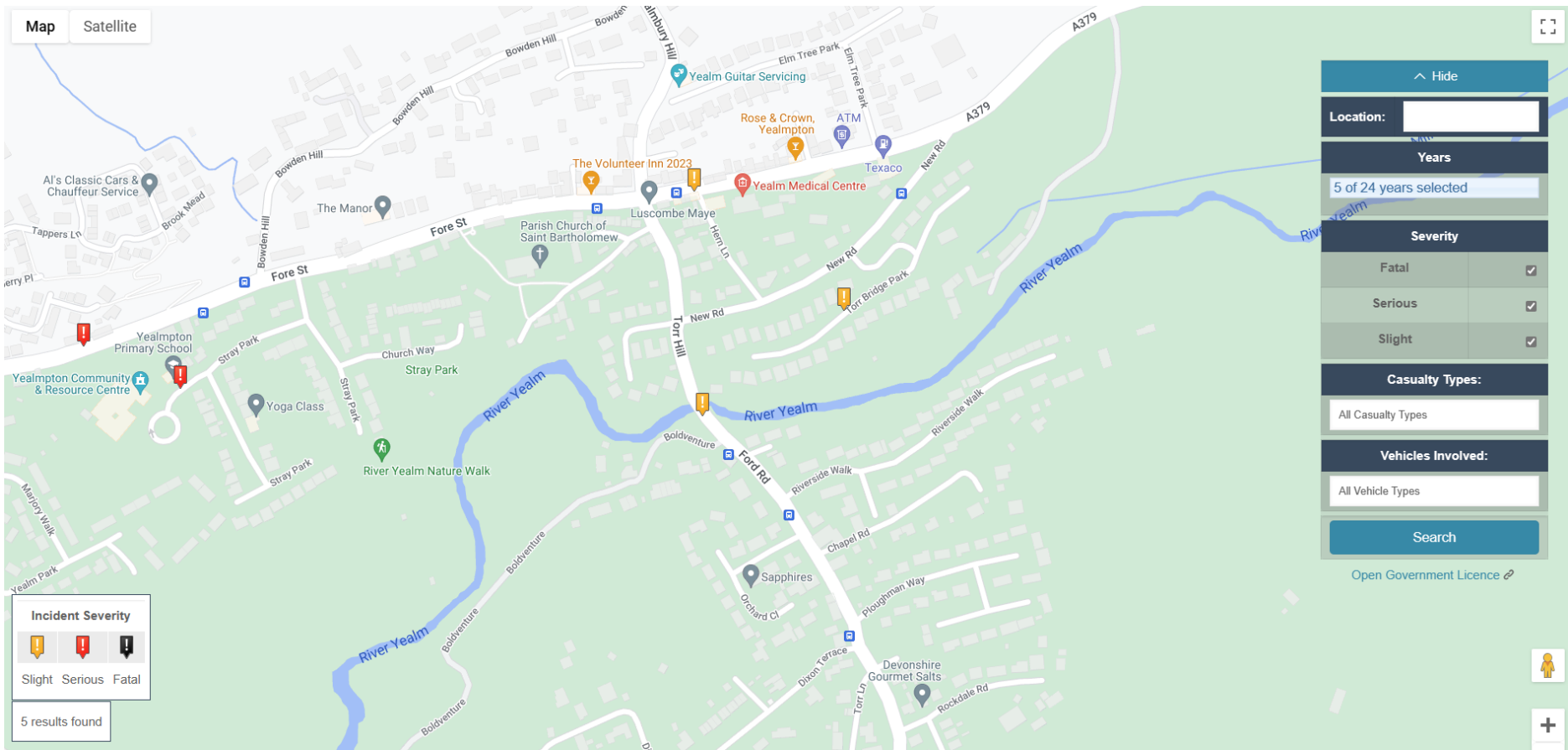


Figure 2-8: Collision Results for New Road and Ford Road Area (source: CrashMap)

2.6 Collaton Park Development

- 2.6.1 A proposed housing development to the south of Yealmpton has been submitted to South Hams District Council. The site is known as Land West of Collaton Park, Newton Ferrers.
- 2.6.2 Pillar Land Securities and Coln Signature Homes have submitted a Full Planning Application (ref: 3335/21/FUL) for the ‘Construction of 125 dwellings (to include 46% affordable), commercial business units, landscaped parkland, community boat storage/parking, allotments, improvements to existing permissive pathway and public footway, enhancement of vehicular access and associated infrastructure and landscaping’. The site is a former RAF base, comprising brownfield and greenfield land.
- 2.6.3 The planning application was approved by the committee in September 2023. The following transport and highways matters were raised in the planning committee report:

- Traffic movements represent only an additional 17

movements at peak hours compared to the previous consented scheme.

- There have been no objections from DCC Highways.
- There is a permissive footway from Collaton to Newton Green, which isolates pedestrians from road traffic and this will be improved.
- There is already a pathway that provides a link to Newton Ferrers with its playing field, school and shops.
- Footpath to access / close proximity to village facilities to avoid reliance on cars.
- The bus stop will be moved from out on the road into the site entrance and will increase the uptake of bus services as well as provide more buses.
- There will be an increase in the bus service offered, doubling its current offering to 10 trips per day.
- Improvements to the Collaton cycle path provide sustainable transport to and from the villages.
- The speed limit on B3186 will be reduced from 60mph to 40mph which will improve safety, reduce road noise and reduce emissions.
- All spoil will be retained on-site, limiting or stopping the need for HGVs to travel through Yealmpton.

2.6.4 As part of the highway works, improvements to pedestrian safety and in consultation with the Highway Authority a speed restriction order is to be improved outside of the site on the main B road of 40mph. This speed restriction will start to the east of the site entrance and carry on to the point of the 30mph speed restriction at Butts Park.

2.6.5 A review of a Transport Technical Note of March 2022 (by Pegasus Transport Consultants) for the development indicates

that 85 two-way vehicle trips are forecast to travel on the B3186 in the direction to/ from Yealmpton in the AM Peak Hour. A corresponding 82 two-way vehicle trips are forecast to travel on the B3186 in the direction to/ from Yealmpton.

2.7 Benefits and Wider Considerations

- 2.7.1 Before considering the relevant policy and guidance about the implementation of 20mph speed limits, this section considers some of the benefits and the wider considerations associated with their implementation, based upon research which has been undertaken elsewhere.
- 2.7.2 This includes reference to the potential impact on journey times as well as the environmental considerations.

Journey Time

- 2.7.3 Whilst the introduction of 20mph speed limits can lead to longer journey times in some instances, consideration needs to be given to the existing recorded speeds of a road network to understand what, if any, impact a reduction in the speed limit is likely to have.
- 2.7.4 In many urban areas, average speeds are already at or below 20mph, especially at peak times, and therefore the introduction of a 20mph speed limit is unlikely to lead to an increase in journey times. However, the signing and any other measures associated with a 20mph speed limit can be expected to reinforce the message to drivers to keep their speeds low.
- 2.7.5 Information presented in a ‘20mph Research Study’ undertaken by Atkins, AECOM and UCL for the DfT in November 2018 includes evidence from the analysis of journey-based speed data. This has shown that median³ speeds have reduced by 0.7 mph in residential areas and 0.9 mph in city centre areas. This equated to a reduction in journey speeds of 3% in residential areas and

5% in city centre areas. On this basis, the report concluded that there was a minimal impact on journey times, with speed limit reductions adding less than half of a minute to a 2-mile trip and less than a minute to a 5-mile trip.

- 2.7.6 It is worth acknowledging that every road network is different, and urban road networks in particular have several features which can influence average journey time, irrespective of the speed limit. Such features include junctions, traffic signals and pedestrian crossings and the time taken to negotiate such features as part of a journey is likely to be longer at peak times.
- 2.7.7 Concerning this, there is also an argument to be made that, even though recorded average speeds may already be at or below 20mph, the introduction of a 20mph limit can encourage drivers to travel at a more consistent speed with less acceleration and deceleration between junctions and signals, but with there being no overall impact on the time taken to travel between one junction and another. This factor can also have environmental benefits, as discussed in further detail below.

Environmental Impact

- 2.7.8 There are several factors to take into consideration in terms of the environmental impact of introducing a 20mph limit. Firstly, there is the change in vehicle speeds to consider, whilst the potential for mode shift away from cars, such that more walking and cycling trips are undertaken, is also a factor. As an additional consideration, there is the potential for vehicles to change route which may benefit some localised areas whilst adversely affecting other localised areas, although with no overall change in emissions across a wider area.
- 2.7.9 The previous section touched on the reduced levels of acceleration and deceleration in 20mph areas. This is considered

to result in a smoother driving style, which in itself is acknowledged as reducing particulate emissions from tyre and brake wear.

- 2.7.10 The ‘20mph Research Study’ includes information which concludes that it would be incorrect to assume a 20mph speed restriction would be detrimental to ambient local air quality. The assessment by Williams (2013) is based on the estimated impact of a 20mph speed restriction on vehicle emissions on six routes in central London. Table 2-4 summarises the modelled change in emissions of 20mph zones when compared to 30mph speed limits.

	NO _x	PM ₁₀	CO ₂
Petrol Cars	+7.9%	-8.3%	+2.1%
Diesel Cars	-8.2%	-8.2%	-0.9%

Table 2-4: Change in Emissions in 20mph Zones when compared to 30mph

- 2.7.11 The Table confirms that in most cases, a reduction in emissions can be expected with the introduction of 20mph zones although this needs to be weighted in favour of the higher number of petrol cars on the road.
- 2.7.12 Added to this, is the recognition that speed restrictions are a way of increasing physical activity because faster-moving vehicles in residential areas discourage people from walking and cycling. Any switch from car-based to walking/cycling-based trips has added potential to reduce emissions.
- 2.7.13 Having considered both the journey time and environmental implications of 20mph zones, it is considered that there are additional benefits beyond simply reducing speeds and the severity of collisions. These can be seen in the context of a wider package of benefits in promoting the concept to Yealmpton residents, beyond simply reducing traffic speeds.

³ A median is a value separating the higher half from the lower half of a data sample

3 POLICY GUIDANCE AND BACKGROUND

3.1 Introduction

3.1.1 This section of the report discusses the policy and guidance on speed limits. As previously mentioned, there is a difference between the implementation of a 20mph speed limit and a 20mph zone. In this case, a 20mph speed limit is proposed as it will be specific to New Road and Ford Road.

3.1.2 Following recently politicised 20mph schemes, the UK Government's Policy Paper 'The Plan for Drivers' (October 2023) stated 'We will make it clear that 20mph speed limit in England must be used appropriately where people want them – not as unwarranted blanket measures. We will take steps to stop councils profiting from moving traffic enforcement'.

3.2 Key Legislation

3.2.1 Up until 1991, local authorities were not able to set speed limits below 20mph (according to the Road Traffic Regulation Act 1984). Subsequently, amendments to the Act and DfT Circulars have enabled reduced speeds to be applied where circumstances are appropriate.

3.2.2 These policy changes can be summarised as follows:

- **Amendment to Road Traffic Regulation Act 1984 (1999)** – allowing local authorities to designate 20mph speed limits without prior approval from the Secretary of State, enabling:
 - 20mph limits indicated by speed limit (and repeater signs only); and
 - 20mph zones, designed to be 'self-enforcing' through the introduction of traffic calming measures, such as speed humps and chicanes.

- **Circular Roads 4/90 (1990)** – requiring highway authorities to apply for consent from the Secretary of State to introduce a 20mph zone as part of a physical traffic calm 'zone' or on short sections of road with a proven crash record.
- **Circular 01/2006 Setting Local Speed Limits** – In this circular, it is stated that 'The Department encourages and supports 20mph limits and zones in situations where there is a particular risk to vulnerable road user'. However, it states that where speeds are significantly higher, it is unlikely that a 20mph speed limit will be complied with unless traffic calming measures are introduced.
- **Circular 01/2013 (revised March 2024)** – the most recent and current guidance which provides revised guidance on the setting of local speed limits, which is described in greater detail below.

3.3 DfT Circular 01/2013 (2024) Summary

- 3.3.1 It is set out in DfT Circular 01/2013 that 'Drivers are likely to expect and respect lower limits and be influenced when deciding on what is an appropriate speed, where they can see there are potential hazards, for example outside schools, in residential areas or villages and in shopping streets.'. The DfT states that a principal aim for determining appropriate speed limits should be to provide a consistent message between the speed limit and what the road looks like and for changes in speed limit to be reflective of changes in the road layout and character.
- 3.3.2 The following are important factors when considering what is an appropriate speed limit:

- History of collisions, including frequency, severity, types, and causes;
- Road geometry and engineering (width, sightlines, bends, junctions, accesses, safety barriers and so on);
- Road function (strategic, through traffic, local access etc.);
- Composition of road users (including existing and potential levels of vulnerable road users);
- Existing traffic speeds; and
- Road environment, including the level of roadside development and possible impacts on residents (e.g. severance, noise, or air quality).

3.3.3 It is recognised within the circular that different road users perceive risks and appropriate speeds differently, with drivers often not having the same perception of the hazards of speeds as people on foot, cycling, or horseback. Therefore, the needs of vulnerable road users must be taken into account.

3.3.4 The guidance does however also state 'Speed limits should not be used to attempt to solve the problem of isolated hazards, for example a single road junction or reduced forward visibility such as at a bend, since speed limits are difficult to enforce over such a short length. Other measures, such as warning signs including vehicle activated signs, carriageway markings, junction improvements, superelevation of bends and new or improved street lighting, are likely to be more effective in addressing such hazards. Similarly, crossings or, in rural areas, the provision of adequate footways can be a more effective means of improving pedestrian safety than lowering a speed limit over a short distance'.

3.3.5 The guidance also advises that if a speed limit is set unrealistically low for a particular road function and condition, it may be

ineffective and drivers may not comply with the speed limit. If many drivers continue to travel at unacceptable speeds, the risk of collisions and injuries would increase.

3.3.6 It may well be that a speed limit need not be changed if the collision rate can be improved or wider *quality of life* objectives can be achieved through other speed management measures. These alternative measures should always be considered before proceeding with a new speed limit.

3.3.7 The guidance includes the DfT's Speed Limit Appraisal Tool (SLAT) which is designed for Local Authority Officers and other professionals to appraise changes in speed limits. The SLAT has been used as part of this study and is reported on in Chapter 5.

3.4 20mph 'Zones'

3.4.1 The DfT has made significant changes to facilitate and reduce the cost of providing 20mph zones in England. Traffic authorities can now introduce any of the following features on a section of road in support of a 20mph speed limit:

- Speed repeater signs;
- Speed roundel road markings;
- A combination of both signs and markings; and
- Traffic calming features.

3.4.2 At least one traffic calming feature as defined in direction 16(2) TSRGD (Traffic Signs Regulation and General Directions) must be placed in a 20mph zone and the features and signing must still be placed at intervals not greater than 100 metres. Only where speeds are already constrained to be near the speed limit should local authorities consider placing the speed limit sign or a roundel marking, in addition to physical features within a zone.

3.4.3 Traffic authorities can now incorporate wider areas within a 20mph zone, by effectively signing 20mph speed limits on distributor roads where traffic calming features are not suitable, or for small individual roads or stretches of road, where average speeds are already at or below 24mph.

3.5 20mph 'Speed Limit'

3.5.1 Guidance advises that research into signed-only 20mph speed limits shows that they generally lead to only small reductions in traffic speeds. As such, they are therefore considered to be most appropriate for areas where vehicle speeds are already low. If the average speed is already at or below 24mph on a road, introducing a 20mph speed limit through signing alone is likely to lead to general compliance with the new speed limit.

3.5.2 The implementation of 20 mph limits over many roads, which the previous Speed Limit Circular (01/2006) advised against, should be considered where average speeds at or below 24 mph are already achieved over several roads. Traffic authorities are already free to use additional measures in 20mph limits to achieve compliance, such as some traffic calming measures and vehicle activated signs, or safety cameras.

3.5.3 Therefore, based on this guidance it is not necessary for all roads within the proposed 20mph limit to have an existing average speed of 24mph or below.

3.6 Case Study

3.6.1 To provide some background and guidance to the proposals for Yealmpton, reference has been made to the '20mph Research Study' undertaken by Atkins, AECOM and UCL for the DfT in November 2018.

3.6.2 Part of this study included looking at a range of examples of previous schemes which have been implemented in the UK. The study identified that all of the area-wide residential schemes exclude some roads, typically strategic routes but in some cases also key bus routes, distributor roads, streets with non-residential frontages and wider roads where compliance is expected to be low.

3.6.3 Some authorities have included streets which were less suited to a 20mph limit, to avoid isolated 30mph roads and to provide consistency in signage and road user perceptions. This includes

streets with higher average speeds before the introduction of the 20mph scheme.

3.7 Traffic Regulation Order (TRO) Process

3.7.1 Section 84 of the Road Traffic Regulation Act 1984 requires that local authorities are required to implement a TRO in order to make a new 20mph speed limit legally enforceable.

3.7.2 The TRO must be published in local newspapers and throughout the community, whilst statutory consultees, relevant stakeholders and the public must be consulted. A period of at least 21 days must be allowed for proposals to be given consideration and formal objections to be made, although early community engagement will usually help to minimise objections and delays in this process.

3.7.3 Although objections can lead to lengthy delays, a TRO can be delivered within 6-8 weeks. However, it should be noted that in the case of Yealmpton, initial consultation with DCC Highways has indicated that an existing high volume and backlog of TRO schemes currently means timescales for implementation are somewhat longer than would normally be expected.

3.8 Summary

3.8.1 In summary, whilst 20mph zones and speed limits have become politicised in recent times, they still have the support of the Government and DfT. They are not confined to traffic-calmed streets but benefit from being in areas where the speed is already low. For New Road and Ford Road in Yealmpton, it seems likely that the introduction of a 20mph speed limit will be most effective if supported by physical measures to reduce the currently recorded traffic speeds.

4 PROPOSED SUPPORTING SCHEMES

4.1 Introduction

- 4.1.1 This section of the report describes the measures required to introduce the 20mph scheme for New Road and Ford Road. In addition, and reflecting on the summary comments of the previous section, it also looks at the physical traffic calming measures that could be introduced in order to reduce current traffic speeds. These schemes and options include mini roundabouts, sheltered parking, raised junctions, cycle lanes and priority workings.
- 4.1.2 The schemes are presented in ‘concept’ form at this stage. Should they be progressed further then they would be required to go through a process of detailed design, consultation, Technical Approval by the LHA and be Road Safety Audited.
- 4.1.3 The full scheme and options for New Road and Ford Road can be seen in Appendix A, drawing nos. YLT-CAL-VI-ZZ-SK-D-0100 & 0101 respectively.
- 4.2 20mph Speed Limit Scheme Requirements (signed-only scheme)
- 4.2.1 For a ‘signed-only’ 20mph scheme, only the following measures are required:
 - Back-to-back speed limit terminal signs (450 to 600mm dia to TSRGD diag. 670) located at either ends of the scheme and on any connecting road with a different speed limit.
 - Repeater signs for 20mph speed limit (300mm dia) and with a maximum spacing of 200m.
 - Traffic Regulation Order (TRO).
- 4.2.2 Whilst the introduction of the above measures will be relatively inexpensive, evidence suggests that their effectiveness at

enforcing the lower speed limit is unlikely to be entirely successful. Therefore, the following section considers the physical traffic calming measures that could be introduced instead of, or in addition to, the 20mph speed limit.

4.3 Scheme Requirements (with traffic calming measures)

New Road (see Figure 4-2)

- 4.3.1 Vehicle speeds on New Road were recorded as mostly complying with the speed limit. However, the road is reasonably straight and traffic can enter the road from the A379 Market Street at speed. In order to reduce speeds to closer to 20mph, some traffic calming features are proposed that utilise many of the existing characteristics of the road. These include the following:
 - Using the exiting parked vehicles to formalise the narrowing of the road using sheltered parking bays.
 - Highlighting the presence of the bus stops by adding bus cage road markings.
 - Installing raised tables at the two minor junctions and narrowing the junction radii.
 - Installing a mini-roundabout to aid traffic flow but to also slow traffic.
- 4.3.2 The aim of the scheme is to give the appearance of a narrower road and to provide a traffic calming features at approximately every 100m spacing. The key features of the scheme are described as follows:
 - i. Mini roundabout at the junction of New Road/ Torr Hill/ The Borough (see Figure 4-1) - This is a 4-arm mini roundabout with an approximate diameter (ICD – inscribed circle diameter) of 18m. The 4-arm entries and exits have radii of approximately 6m.

The south east quadrant of the roundabout has a widened footway to enable pedestrians to more easily cross Torr Hill.

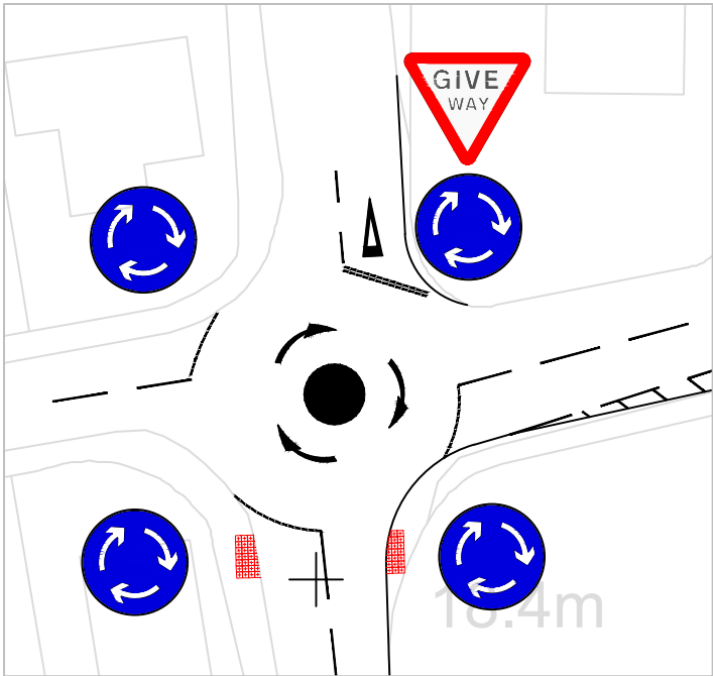


Figure 4-1: Mini Roundabout junction with New Road (E) / Torr Road (N and S) / The Borough (W)



- ii. Sheltered parking – along New Road is proposed and these have 3 sets of sheltered parking of 30m (approx. 5 car lengths), 64m (approx. 10 car lengths) and 60m (approx. 10 car lengths) lengths respectively. These are measured as 2m deep. The total sheltered parking measurement of 154m would provide space for approximately 25 cars along New Road.
- iii. Junction speed tables – at the junction of New Road with Hern Lane and with Torr Bridge Park, raised speed tables are proposed. These provide a vertical deflection (typically 75mm) which will help to reduce vehicle speed. They also provide a level platform over which pedestrians can cross when combined with a dropped kerb of 50mm. The raised table at the junction with Torr Bridge Park also includes narrowing of the junction radii to lower speeds of turning traffic and to reduce the distances for pedestrians to cross.
- iv. Bus stops – there are two bus stops located at the east end of New Road. The one for eastbound buses is not clearly apparent as there is no footway waiting space. It is proposed that a short length of footway is extended on the north side of New Road near to its junction with the A379 Market Street. The extent of the public highway is limited here with the verge not part of the public highway. Therefore,

the footway would provide some space for waiting bus users. As a result, the positions of the east and westbound bus stops have been marginally changed. Bus cage road markings help to enhance the presence of the bus stops and also act as a visual cue to drivers to slow down.



- 4.3.3 Options to keep costs down could include:
- Replace build-outs with hatched markings.
 - Finish junction speed tables with tarmac instead of blocks.
 - Limit the kerb works associated with the mini-roundabout scheme.



Example: Ivybridge speed tables, sheltered parking and 20mph speed limit

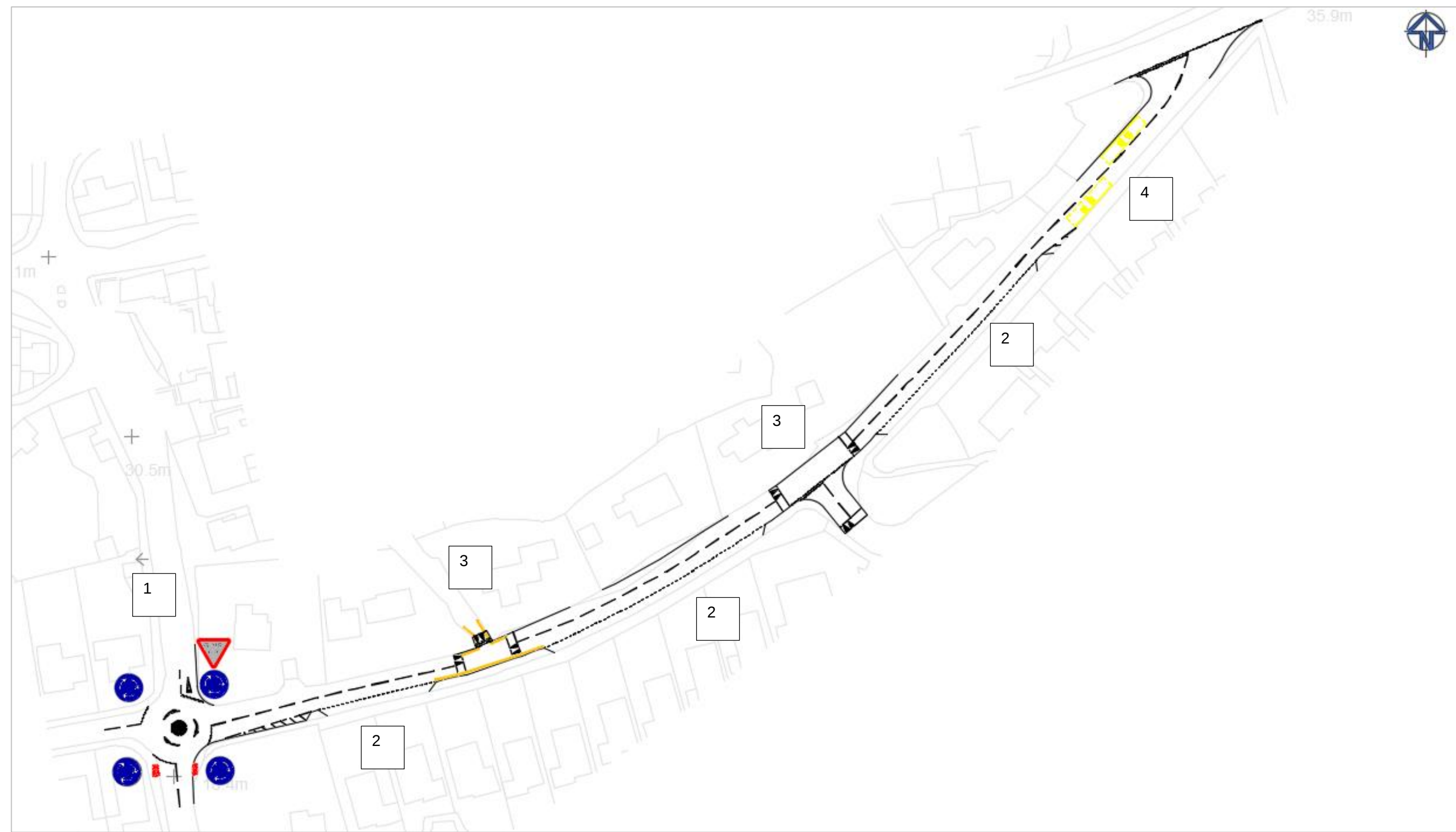


Figure 4-2: New Road proposed traffic calming measures (NTS)

Ford Road (see Figure 4-4)

4.3.4 Vehicle speeds on Ford Road were recorded as higher than the speed limit. From observation, this seemed to be especially the case for the southern section of Ford Road between Hillside Drive and Rockdale Road where the road, which replaced the old section of Torr Lane, has been designed to a higher design speed standard than is necessary for a 30mph speed limited road.

4.3.5 In order to reduce speeds to closer to 20mph, some traffic calming features are proposed that include the following:

- Visually narrowing of the road for the section between Hillside Drive and Rockdale Road and make use of the reduced-width carriageway for either sheltered parking bays or for cyclists.
- Highlighting the presence of the bus stops by adding bus cage road markings.
- Re-position the start of the speed limit to a position further south.
- Formalise the single-way priority working.
- Install speed cushions.

4.3.6 The aim of the scheme is to give the appearance of a narrower road on the southern sections of the road. Traffic calming features at approximately every 100m spacing will help to reduce speeds. The key features of the scheme are described as follows:

- i. Speed limit repositioned – the proposal is to move the speed limit further south so that it starts immediately prior to the bend on the B3186. The bend itself acts as a speed-reducing feature and slower speeds on the bend will be a safety enhancement. The speed limit terminal signs could

be supported with a gateway feature e.g. contrasting road surface, white gateways, 'Welcome to Yealmpton' sign etc (See Figure 4-3).

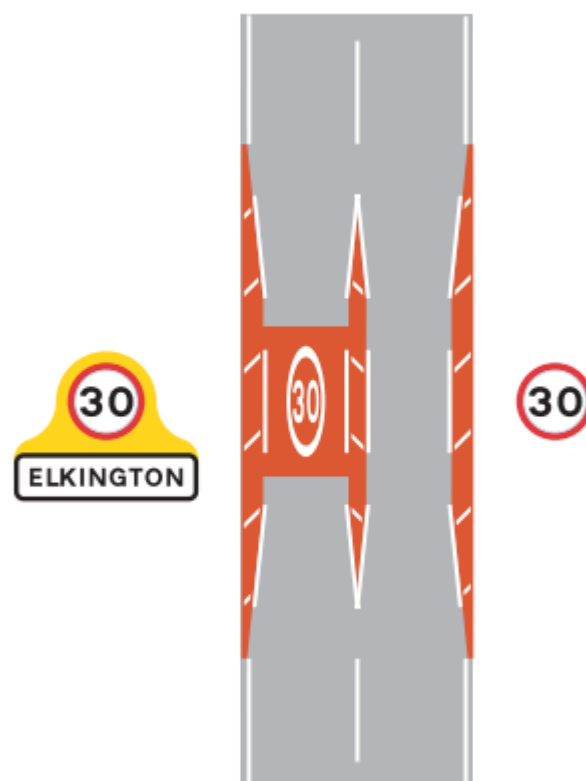


Figure 4-3: Village gateway example (source: Know Your Signs)

- ii. Mini-roundabout at junction New Road/ Hill Side Drive – this is proposed as a traffic calming feature and will provide horizontal and potential vertical deflection if the central island is raised. Some verge area is required to support the scheme which is all within the public highway. A splitter island northbound will help to increase deflection.
- iii. Bus stops – bus stop cage markings should be added to the road surface to highlight the presence of the bus stops and also to provide a visual cue to slow traffic down.

iv. Carriageway narrowing between Hillside Drive and Rockdale Road – this section of road measures about 7.3m in width, which is a standard single carriageway road width for a major road. It is proposed that the width is visually reduced by introducing one of the following:

- a. Cycle lane for southbound cyclists who are travelling slowly as they climb the hill. Cycle lane would be 1.5m to 2.0m wide giving a corresponding carriageway width of 5.8m to 5.3m; OR;
 - b. Sheltered parking bays of width 2.0m giving a corresponding carriageway width of 5.3m.
- v. Priority working – the existing priority working is laid out incorrectly with give-way lines operating in both directions. Priority should be for just one direction so it is proposed to make the priority southbound with the northbound traffic giving way. It is also proposed that the give-way line for northbound traffic be moved slightly further south adjacent to the bus stop. This gives more room to manoeuvre and also to place the required signing.
- vi. Speed cushions – vertical deflections are proposed in the form of speed cushions where sections of the road are straight and vehicle speeds may be high. Speed cushions are favoured over speed humps where there are bus routes as the buses can straddle

the speed cushions. This is also the case for ambulances and fire appliances.

- 4.3.7 Options to keep costs down could include:
- Using ‘dragon teeth’ road markings at the gateway instead of contrasting surfaces.
 - Cycle lane options will probably be cheaper than sheltered parking bays.
 - Limit the kerbs works associated with the mini-roundabout scheme.
 - Reduce the number of locations with road cushions.

Additional requirements

- 4.3.8 Both the schemes for New Road and Ford Road will require the following:
- Detailed design and Technical Approval by the LHA. This should also include a Road Safety Audit.
 - Utility searches should be undertaken for any intrusive highway works and works on the verge.
 - Traffic Regulation Orders (TROs) will be required for traffic calming measures, bus stop clearways/ cages, mini-roundabouts, cycle lanes, speed limit repositioning and any changes to double yellow lines (TROs can be combined).
 - Consultation on the schemes should be undertaken prior to any schemes being agreed.



Example: Priority working in accordance with TSRGD, St Austell



Example: Cycle lanes, bus stops and sheltered parking bays make road look narrower (Upper Bristol Road, Bath - source: Google)



Example: Tarmac road humps and speed cushions are hard wearing and relatively low cost

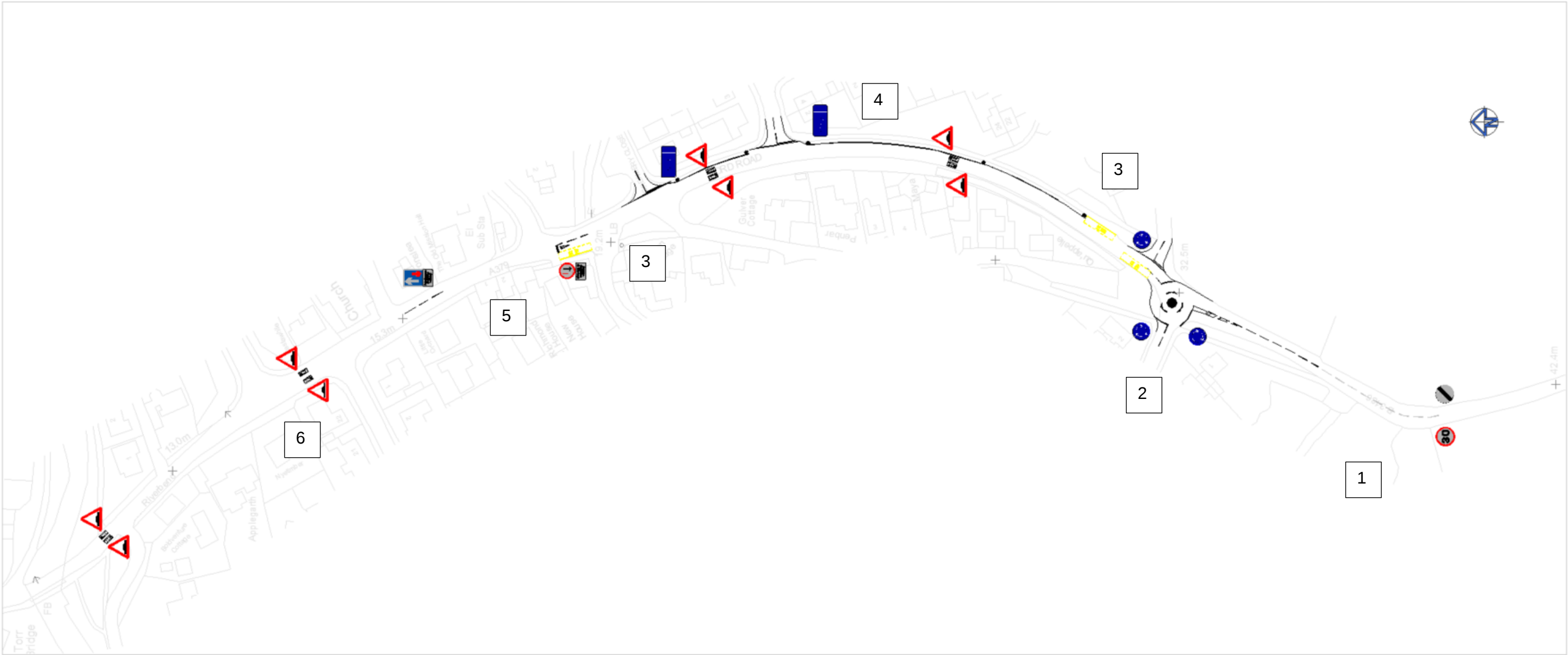


Figure 4-4: Ford Road proposed traffic calming measures (NTS)

5 SPEED LIMIT APPRAISAL TOOL ANALYSIS

5.1 Introduction

5.1.1 In order to provide a quantitative appraisal of the speed limit change to 20mph, this study has used the DfT's Speed Appraisal Tool (SLAT). The tool is recommended for use by local authorities and other professionals. It was developed in 2013 but remains part of Circular 01/2013 as revised in March 2024.

5.2 Setting Local Speed Limits

5.2.1 The DfT Circular 01/13 Setting Local Speed Limits sets out guidance as a basis for assessments of local speed limits. Speed limits should be evidence-led, self-explanatory and seek to reinforce people's assessment of what is a safe speed to travel.

5.2.2 The underlying aim should be to achieve a 'safe' distribution of speeds. The key factors that should be considered in any decisions on local speed limits are:

- History of collisions;
- Road geometry and engineering;
- Road function;
- Composition of road users;
- Existing traffic speeds; and
- Road environment.

5.2.3 While these factors need to be considered for all road types, then may be weighted differences in urban or rural areas. The impact on community and environmental outcomes should also be considered. Circular 01/2013 Setting Local Speed Limits states that while traffic authorities should continue to routinely collect and assess both mean and 85th percentile speeds, mean

averages should be used as the basis for determining local speed limits.

5.2.4 For clarity, the distinction between the mean and 85th percentile value is:

- Mean speeds are the average speeds that vehicles travel at.
- 85th percentile speeds are the speeds at or below which 85% of vehicles are observed to travel under free-flowing conditions. This is a nationally recognised method of assessing traffic speeds⁴.

5.3 Methodology

5.3.1 The DfT's SLAT uses traffic flow, speed, accidents, and cost data to assess the benefits of the scheme. From the analysis, the benefits of the scheme will be evidenced.

5.3.2 The SLAT has been designed to enable local highway authority officers and other professionals to:

- forecast mean and 85th percentile speeds for speed limit changes;
- forecast changes to journey times separately for business and personal users, vehicle operating costs including fuel, collisions by severity, carbon dioxide (CO₂) emissions and nitrogen oxide emissions; and
- appraise changes in speed limits to 20mph, 30mph, 40mph, 50mph, 60mph and, on dual carriageways, 70mph.

5.3.3 Whilst it is preferred that the speed observations are made by journey times measurements, due to the limited budget available to this project, speed has been assessed using point speed data

taken from the ATCs.

5.3.4 The outputs produced by the tool are quantitative and are presented in four formats:

- Transport Economic Efficient (TEE) tables;
- An Appraisal Summary Table (AST);
- An Objective Analysis Table (OA); and
- A Link Impacts Table.

5.3.5 The road network has been divided into the two links for which data is available i.e. New Road and Ford Road. The scheme has been estimated to cost £100k to introduce and is appraised over a 10 year period. It should be noted that the SLAT does not know the effects on speed of individual traffic calming measures.

5.4 Results

5.4.1 The outputs from the SLAT are contained in Appendix B. The headline results are presented below:

- Mean speed before and after:
 - New Road:
 - Before: 26.3mph
 - After: 24.7mph
 - Ford Road:
 - Before: 28.4mph
 - After: 26.4mph
- Injury accidents saved over 10 years:
 - New Road: 0.8
 - Ford Road: 1.0

⁴ Setting Local Speed Limits, 2024

5.4.2 The scheme has been appraised over a 10 year period and the results are shown in the table below. This shows that the benefits of accident cost savings don't offset the costs associated with the scheme. As a result, the scheme records a negative net present value (NPV). However, this is not by very much and a lower scheme cost would probably result in a positive NPV.

Appraisal over 10 years	Benefit	Cost
Accident saving (PIA and damage only)	£ 121,418	
Journey times & operating costs (motorised traffic)		-£ 263,823
Cost of scheme		£ 92,042
Green house gas and local air quality		-£ 1,917
TOTAL	£ 121,418	-£ 173,698
NPV	-£ 52,280	

Table 5-1: Appraisal Summary (over 10 year period)

5.4.3 The SLAT method used is not the same as the scoring sheet used by DCC when assessing competing 20mph proposals. Therefore, the low NPV need not mean that the scheme should not be implemented. It is noted that the DCC scoring sheet is heavily weighted towards existing traffic speeds. If the traffic speeds can be demonstrated to be lower than they are currently, e.g. through the introduction of traffic measures, then the likelihood of having a 20mph speed limit, or zone, accepted will be much higher.

6 SUMMARY AND RECOMMENDATIONS

6.1 Summary

- 6.1.1 Callidus Transport and Engineering (the consultant) have been commissioned by Yealmpton Parish Council (the client) to undertake a study to look at traffic speeds, and in particular proposals to implement a 20mph speed limit on New Road and Ford Road, Yealmpton.
- 6.1.2 The report also considers physical measures that could be implemented in order to reduce traffic speeds on New Road and Ford Road.
- 6.1.3 A survey undertaken by the Parish Council has shown that 79% of those who responded were in favour of 20mph speed limit. However, an application to DCC for a 20mph project was turned down due to the proposal scoring lower than competing projects from other Parish and Town Councils.
- 6.1.4 Baseline data was collected on traffic volumes and vehicle speeds on New Road and Ford Road in March 2024. The data showed that Ford Road was the busier of the two roads. Ford Road also had higher vehicle speeds. The section of Ford Road to the south of its junction with Rockdale Road, which replaced the old Torr Lane, is constructed to a higher standard than is necessary for the speed required of it. Therefore, traffic speeds were observed to be highest at this location.
- 6.1.5 Collision data describing personal injury accidents (PIAs), has shown that only one accident has occurred in the last five years and the severity of the accident was classified as 'slight'. As a result, there does not appear to be an accident problem along New Road and Ford Road although the perception might be that it is a dangerous road for vulnerable road users.
- 6.1.6 A review of transport policy has been undertaken. The policy on setting of speed limits is set out in Government Circular 01/2013, which was updated in March 2024. The update is partly

in response to the recent politicisation of 20mph speed limits. However, the Circular is clear that the Government remains supportive of them.

- 6.1.7 Guidance in the Circular requires that in order to implement 20mph schemes, it needs to be demonstrated that traffic speeds are already low. The baseline data collected in this report shows that the traffic speeds are reasonably low but could be made lower.
- 6.1.8 A set of traffic calming measures has been identified for New Road and Ford Road that are aimed at reducing traffic speeds to less than 30mph. These are physical measures that help to reinforce lower driving speeds. They are not dependent on there being a 20mph speed limit but would help to support one, or a 20mph zone.
- 6.1.9 The scheme for New Road consists of measures to visually narrow the road, make improvements to the bus stops and provide raised tables at two junction locations. In addition, a mini-roundabout is proposed for the junction of New Road/ Torr Hill/ The Borough. This includes some improvements to the footway to improve pedestrian crossing safety.
- 6.1.10 The scheme for Ford Road also consists of measures to visually narrow the road on the southern section by implementing either a cycle lane or sheltered parking bays. It is proposed to move the start of the speed limit further south and place a mini-roundabout at the junction of New Road with Hill Side Drive. The current single-way priority working arrangement is proposed to be formalised with priority for traffic leaving the village southbound. Road cushions are also proposed along the road to further reduce traffic speeds.
- 6.1.11 The schemes identified are based on the consultant's professional judgement of the types of transport and movement solutions that could be implemented. However, there may be other factors that could affect how successful the schemes are.

The ideas are not exhaustive and variants or permutations of the same schemes could be identified.

- 6.1.12 The DfT's SLAT has been used to objectively assess the implementation of a 20mph speed limit on New Road and Ford Road. This has shown that the costs e.g. scheme costs, journey time, emissions, economy etc. are not outweighed by the benefits e.g. accident savings, and as a result, the appraisal value (Net Present Value) is negative. However, this is only marginally so and in our opinion should not be a reason to dismiss a 20mph speed limit or zone. The scoring sheet used by DCC is different to the SLAT and by physically reducing speeds on New Road and Ford Road through traffic calming measures, the proposal to introduce a 20mph speed limit is likely to be more acceptable to DCC.

6.2 Recommendations

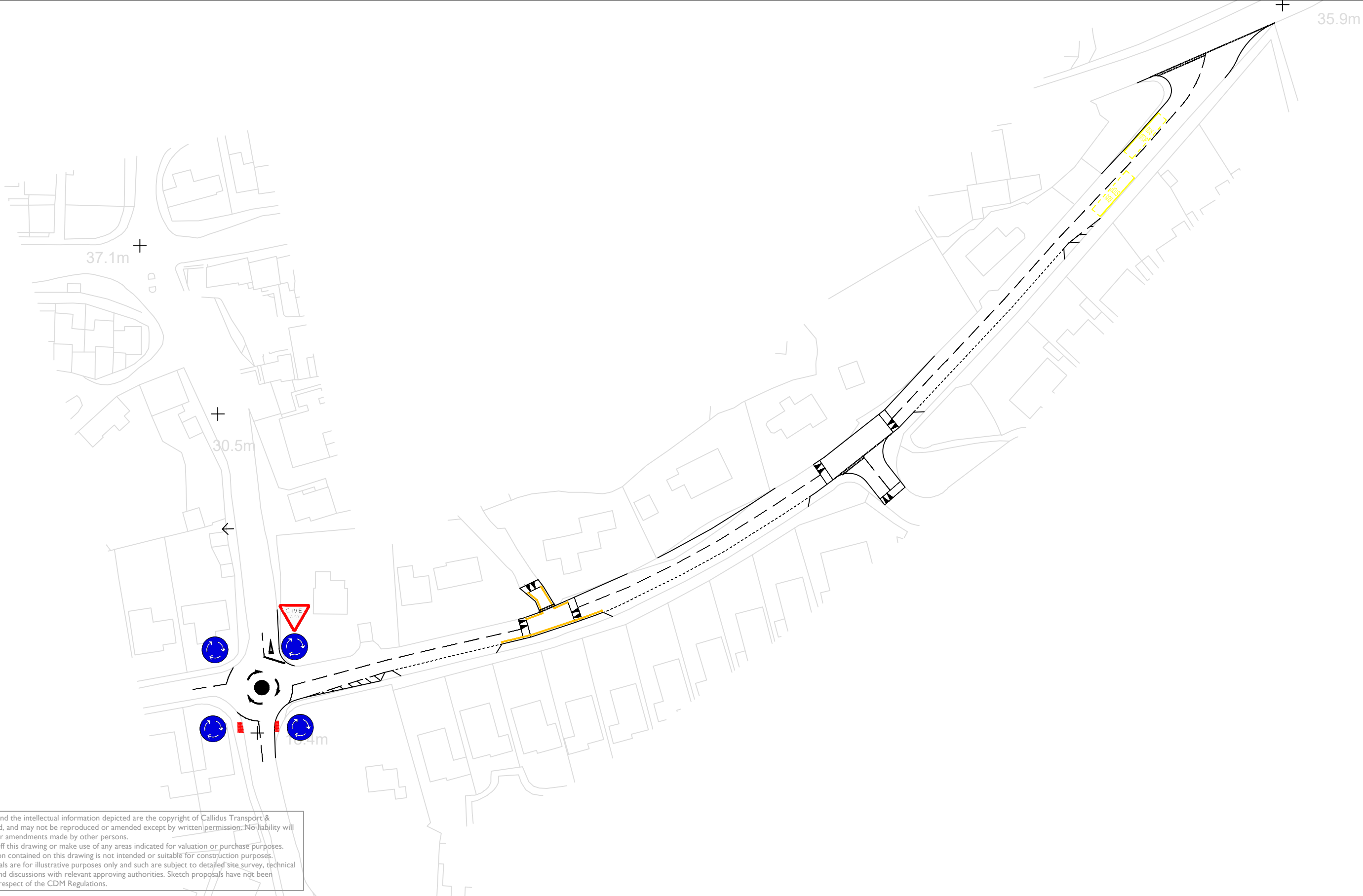
- 6.2.1 Further work would take the preferred concept schemes identified in this report and refine them as developed schemes or potential schemes for tender and construction. However, the following would be necessary to develop the scheme further:
- Topographic survey of the area to be designed.
 - Usage surveys including vehicles and pedestrian movements.
 - Constraints such as utilities and other services.
 - LHA approval is required for all scheme options.
 - Any schemes should be subject to consultation prior to full development and delivery.
 - A cost estimate by a qualified estimator e.g. a Quantity Surveyor, should be undertaken to determine costs constraints and value for money.
 - All schemes should be subject to a Road Safety Audit.

APPENDIX A

DRAWINGS

File Path: c:\Users\Ben\OneDrive\Callidus Transport & Engineering Ltd Team Site - Callidus Projects\1635c Yealmpton\ Project\3 Dwg\ Sketch\YLT-CAL-VI-ZZ-SK-D-0100 P01 New Road 20mph Speed Limit Options.dwg

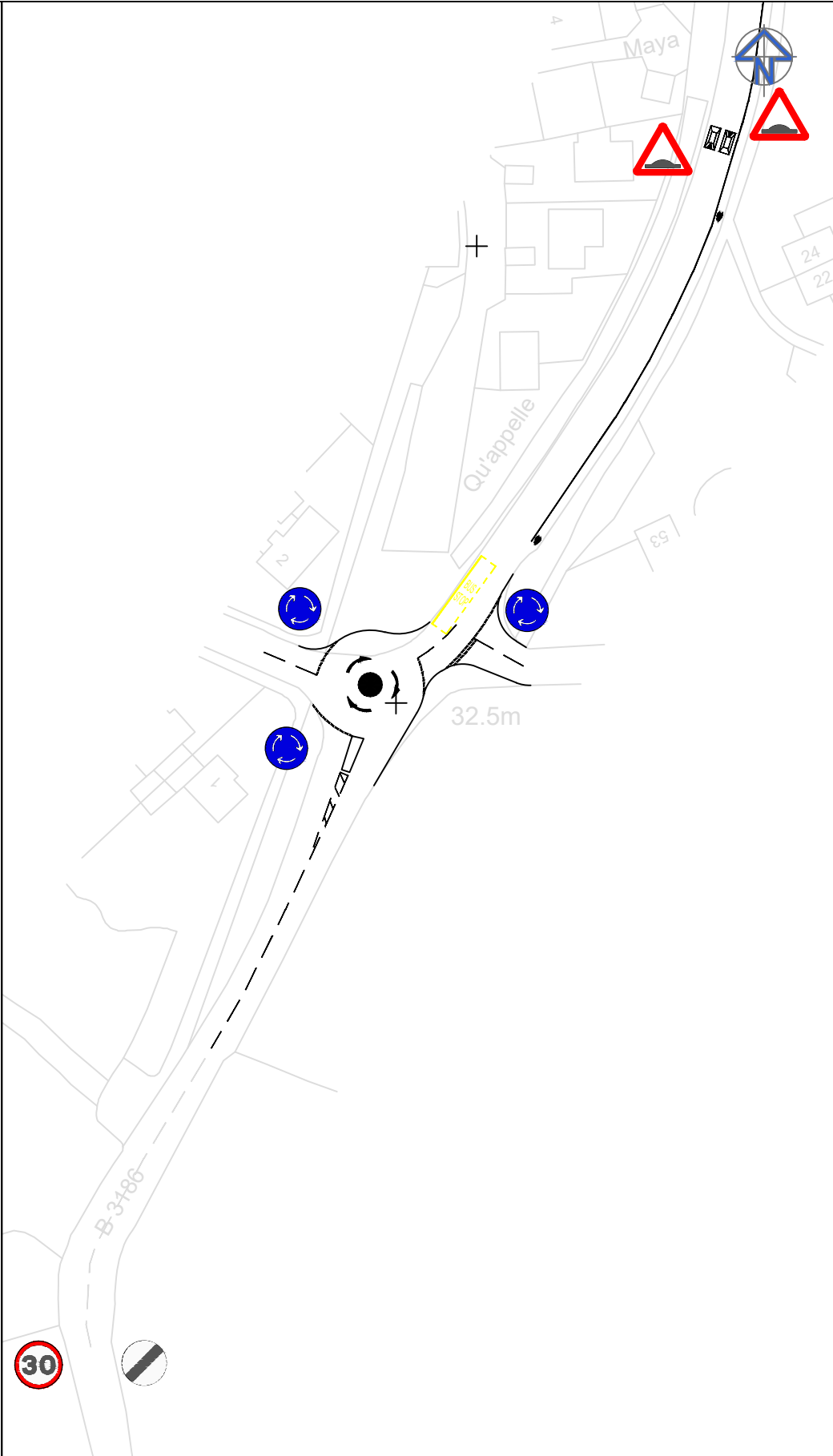
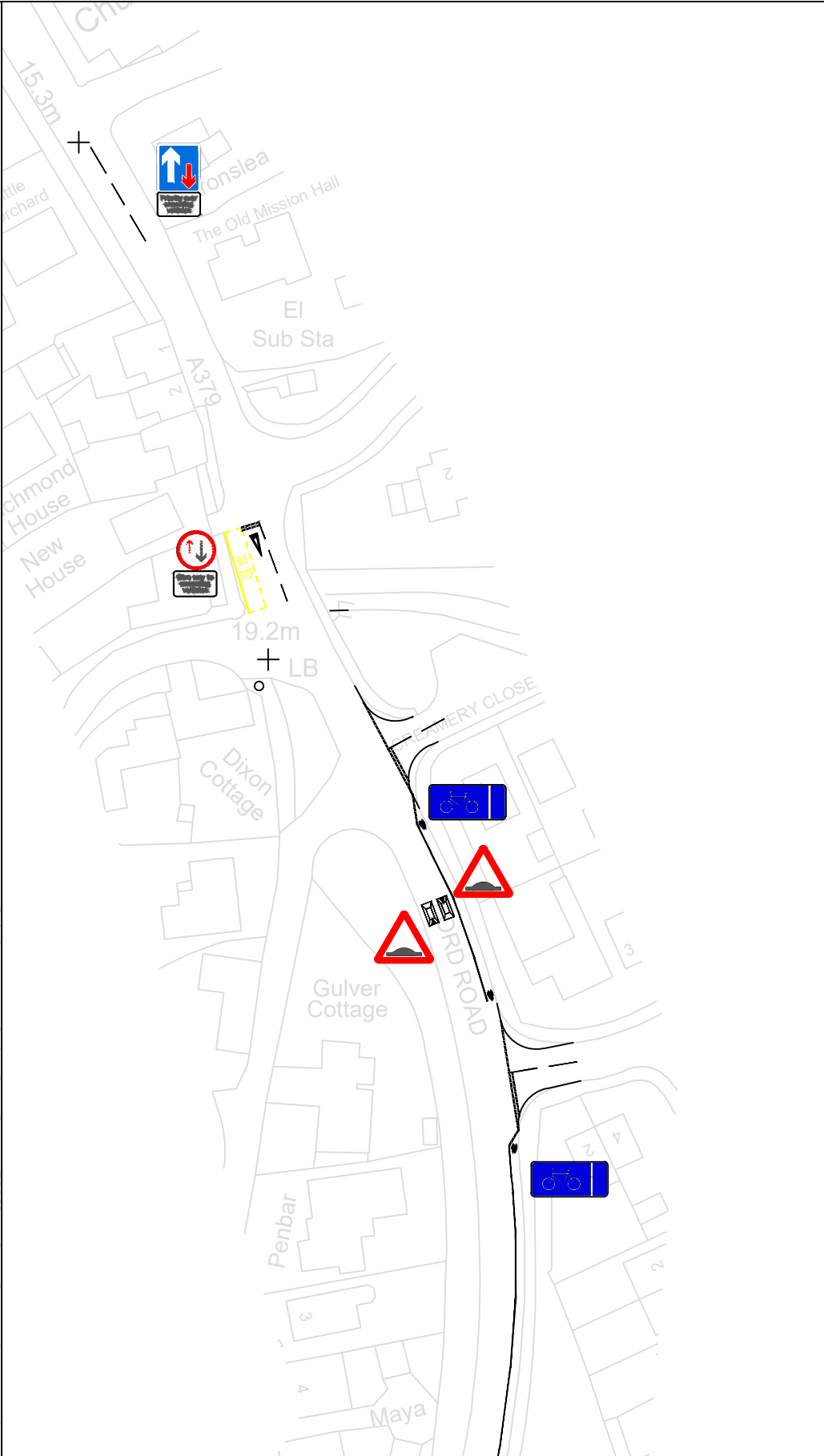
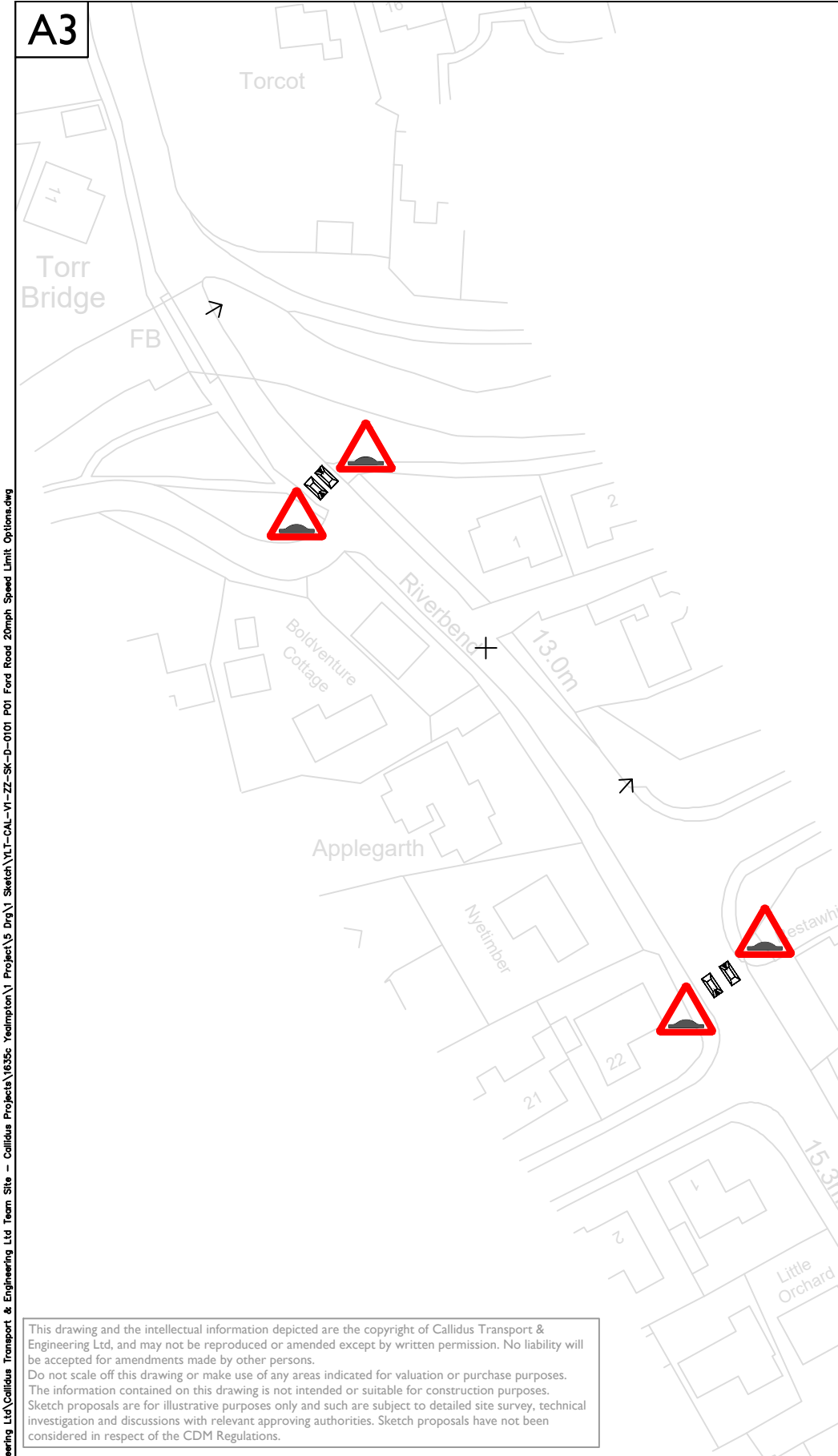
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					T 01225 303 523 E info@callidusgroup.co.uk W www.callidusgroup.co.uk			
					Registered in England & Wales No. 6719513	Dwg. No:	YLT-CAL-VI-ZZ-SK-D-0100	Rev: P01
P01	BJ	RS	30/04/24	Drawing Created	STATUS:	PRELIMINARY	Project Title:	New Road and Ford Road, Yealmpton
REV	NAME	CHECK	DATE	NATURE OF REVISION	SCALE:	1:1000	Drawing Title:	New Road 20mph Speed Limit Options
REVISIONS					PAPER SIZE:	@ A3	Client:	Yealmpton Parish Council

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P01

Project Title:

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Drawing Title:

Ford Road 20mph Speed Limit Options

Client:

Yealmpton Parish Council

P01

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REVISIONS

Callidus

Transport & Engineering

APPENDIX B

SLAT OUTPUTS

Appraisal Summary Table				Date				8524			Contact:	
Name of scheme:		New Road and Ford RoadYealmpton									Name	RS (Callidus)
Description of scheme:		20mph speed limit proposal									Organisation	For Parish
											Role	Consultant
Impacts		Summary of key impacts				Assessment						
						Quantitative			Qualitative		Monetary £(NPV)	
Economy	TEE Consumers - PVB										-£132,258	
	TEE Business - PVB										-£131,565	
	Public Accounts - PVC										£92,042	
Environmental	Noise											
	Local Air Quality - Tonnes of Nox					0.1					-£43	
	Greenhouse gases - Tonnes and NPV of CO2					Change in non-traded carbon over 10y (CO2e)		42.3			-£1,874	
						Change in traded carbon over 10y (CO2e)		0.0				
	Landscape											
	Townscape											
	Heritage of Historic resources											
	Biodiversity											
Water Environment												
Social	Reliability impact on Commuting and Other											
	Physical activity											
	Journey quality											
	Accidents					43.5					£121,418	
	Security											
	Access to services											
	Affordability											
	Severance											
Option values												
Public Accounts	Cost to Broad Transport Budget										-£52,281	
Notes Study VOT Multiplier = 1.0 Speed Change Constraint = False Vehicle Type Shares by Purpose: Default WebTAG values used Purpose Shares by Vehicle Type: Default WebTAG values used Growth Indices by Vehicle Type: Default WebTAG values used Vehicle Occupancy by Purpose and Vehicle Type: Default WebTAG values used												

Transport Economic Efficiency Table (TEE)

Consumers				
<i>User benefits</i>	Private Cars and LGVs	PSV		
	Travel time	-£111,949	-£11,247	
	Vehicle operating costs	-£9,062		
	User charges	£0		
	During Construction & Maintenance	£0		
NET CONSUMER BENEFITS		-£132,258	(1)	
Business				
<i>User benefits</i>	Total	Goods Vehicles	Business Cars & LGVs	PSV
	Travel time	-£115,895	-£13,010	-£99,200
	Vehicle operating costs	-£15,670	-£8,637	-£4,939
	User charges	0		
	During Construction & Maintenance	0		
Subtotal		-£131,565	-£21,647	-£104,139
Private sector provider impacts				
	Revenue	0		
	Operating costs	0		
	Investment costs	0		
	Grant/subsidy	0		
Subtotal		0	(3)	
Other business impacts				
	Developer contributions	0	(4)	
NET BUSINESS IMPACT		-£131,565	(5) = (2) + (3) + (4)	
TOTAL				
Present Value of Transport Economic Efficiency Benefits		-£263,823	(6) = (1) + (5)	

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are discounted present values, in 2010 prices and values

(2)

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