

## [ABSL-0260] Feasibility Appraisal – Rotherfield Speed Reduction and Traffic Calming Project

PREPARED FOR:	Rotherfield Parish Council
PREPARED BY:	Stuart Beale
DATE:	09 November 2017
REVISION NO.:	P02
REVIEWED BY:	James Vaks
APPROVED BY:	James Vaks

### 1. Introduction

- 1.1. Rotherfield Parish Council (RPC), through the East Sussex Highways (ESH) Community Highways programme, has submitted an application for funding to reduce the existing 30 mph speed limit through the village, to a 20 mph speed limit.
- 1.2. RPC have already undertaken speed counts at several locations in the village to assist in the investigation into introducing a lower speed limit.
- 1.3. The purpose of this report is to review the information submitted by RPC, assess the feasibility of introducing the lower speed limit and provide an indication of potential costs to implement such measures as well as risks to the delivery of a future scheme. This will help RPC decide whether to make a formal application for Community Match funding at a later date.

### 2. Objective of Scheme

- 2.1. RPC would like to reduce the existing 30 mph speed limit through the village to 20 mph. The extent of the 20 mph speed restriction RPC wish to introduce is detailed in Figure 1 overleaf.
- 2.2. The key aims RPC wish to achieve through the introduction of a 20 mph village speed restriction includes:
  - Reduce traffic speed through the Village for the benefit and safety of those who live, work and visit;
  - Slowing the traffic to allow safe crossing of the road in the Village centre;
  - Reduce danger to school children and residents walking to school and the village via the B2100 Church Road where there is no pavement.



Figure 1 – Proposed extent for the 20 mph speed limit

### 3. Existing Situation

#### 3.1. The Village centre

Rotherfield is located to the east of Crowborough. The B2100, which connects Crowborough to Mark Cross and Wadhurst is a busy through route, taking on average nearly 8,000 vehicles per day. The centre of the village, as highlighted in Figure 1, is a mix of business and residential properties. The speed limit is 30 mph and there is a limited amount of street lighting. Due to the presence of two busy junctions and several areas of on-street parking, which in places reduces the carriageway to a single lane, it is considered that traffic speeds in the central area are not as high as those recorded on the approaches to the village. Refer to Figure 2 for details.



Figure 2 – Plan of village centre with traffic issues highlighted

### 3.2. Approach Roads

#### - Eridge Lane/North Street

This is a single carriageway road with a 30 mph speed limit and limited street lighting. The speed limit in Eridge Lane changes to 60 mph at the northern extent of the village. There are narrow footways in North Street, with only a single footway in Eridge Lane. There is a school in North Street as well as the village hall. There is on-street parking in North Street which reduces the road to a single lane.

#### - B2100 Station Road

This is a single carriageway road with a 30 mph speed limit. Street lighting is provided but, in keeping with the rural feel of the road setting, provides a varying level of illumination. There is only one footway in Station Road. Millennium Green and its car park are located along Station Road. As this is a straight road with little on-street parking, the average recorded approach speeds into the village are above 30 mph.

#### - B2101 Mayfield Road

This is a single carriageway road with a 30 mph speed limit and limited street lighting. As this is a straight road with little on-street parking, the average recorded approach speeds into the village are above 30 mph. Speeds are likely to lower nearer the village centre due to long sections of on-street parking.

- B2100 Church Road

This is a single carriageway road with a 30 mph speed limit. Street lighting is provided but, in keeping with the rural feel of the road setting, provides a varying level of illumination. There are some areas of on-street parking within the village centre area, however there are limited footways in the more rural section on the approach to the village. Speed data shows that average traffic speeds at the proposed gateway location are around 30 mph.

- New Road

This is a quiet residential road with a 30 mph speed limit and no street lighting. It connects to the B2101 South Street/Mayfield Road. It is not intended to include this within the proposed 20 mph speed limit, however careful consideration will need to be given as to where terminal signs can be located given narrow verge/footway widths.

### 3.3. Accident Data

There has been two slight and one serious personal injury crashes recorded within the village over the last three years. One of these crashes occurred on Church Road, and involved a pedestrian being hit by a car's wing mirror. Another accident was in Station Road, again involving a pedestrian hit by a vehicle wing mirror. The serious crash injury occurred in South Road at the junction with Station Road. A vehicle mounted the footway hitting a pedestrian.

Improving the environment for pedestrians is a key aim RPC wish to achieve. There is insufficient detail from the accident records to suggest that a reduced speed limit would have prevented these incidents from occurring but it is hoped that introducing a slower speed limit, such as a 20mph speed restriction, would encourage a change in driver behaviour towards more vulnerable road users.

### 3.4. Speed Data

ESCC have three permanent traffic speed counters located within the existing 30 mph limit. In addition, RPC have also undertaken further traffic speed surveys along Eridge Lane/North Street and Church Road.

With reference to Figure 1 and Table 1 below, speed data shows the average speeds recorded are generally above the current 30 mph speed limit. 85th %-ile speeds (the speed in which 85% of vehicles are not exceeding) also shows recorded speeds of 37 mph and above at three of the five approaches to the Village.

Table 1 – Recorded Traffic Speeds

Site	Average Speed		85%ile Speed		Remark
	Eastbound	Westbound	Eastbound	Westbound	
A	37mph	36mph	43mph	42mph	Recorded from ESCC Speed Counter
B	Northbound 33mph	Southbound 35mph	Northbound 39mph	Southbound 41mph	Recorded from ESCC Speed Counter
C	Eastbound 31mph	Westbound 32mph	Eastbound 37mph	Westbound 39mph	Recorded from ESCC Speed Counter
D	Southbound 28mph	Northbound N/A	Southbound 34mph	Northbound N/A	Data collected by RPC
E	Eastbound 25mph	Westbound 27mph	Eastbound 32mph	Westbound 30 mph	Data collected by RPC

- 3.5. Whilst most of these speed counts were taken outside the extents of the proposed 20 mph scheme, it should be noted that they are all within the existing 30 mph areas. The figures do suggest that approach speeds to the village are particularly high, however whilst no speed survey figures are available in the centre of the village, it is considered that traffic speeds in the centre of the village will be lower. This along with the sharp bend at the junction with North Street and the busy junctions with North Street and Station Road, can often make navigating the village difficult which in turn would control traffic speed.

## 4. Scheme Options

4.1. There are several options when considering introducing a 20 mph speed restriction. These include:

- Variable and part time 20 mph limits;
- 20 mph limits;
- 20 mph zones.

### Variable and part time 20 mph limits

4.2. Traffic authorities have powers to introduce 20 mph speed limits that apply only at certain times of day. These variable limits may be particularly relevant where for example a school is located on a road that is not suitable for a full-time 20 mph zone or limit, such as a major through road. To indicate these limits, variable message signs are available. Given that RPC are looking to introduce a village wide 20 mph speed limit restriction it is not considered this type of limit be appropriate.

### 20 mph limits

4.3. 20 mph limits are most appropriate for roads where average speeds are already low, below 24 mph. The layout and use of the road must also give the clear impression that a 20 mph speed or below is the most appropriate. For a 20 mph speed limit to be introduced, no physical traffic calming measures are needed and drivers are alerted to the speed limit with 20 mph speed limit repeater signs. If it was only the village centre being considered for a 20 mph speed limit restriction, then a speed limit enforced with signing and lining alone may be considered appropriate, although further speed surveys would be needed to verify that speeds within the centre of the village are below 24 mph.

4.4. However, RPC have expressed they would like the 20 mph speed restriction to include sections of the approach roads in to the Village centre. As the speed surveys demonstrate, speeds are in excess of 24 mph so signing and lining alone would not be sufficient to reduce traffic speeds to the extent where a 20 mph speed limit will be self-enforcing. Therefore, traffic calming at the approaches to the Village to encourage slower vehicle speeds will be needed.

### 20 mph zones

4.5. 20 mph zones use traffic calming measures to reduce the adverse impact of vehicles on built up areas. The principle is that the traffic calming slows vehicles down to speeds below the limit, and in this way the zone becomes 'self-enforcing'. Speed humps, chicanes, road narrowing, planting and other measures can be introduced to both physically and visually reinforce the nature of the road.

4.6. The benefits of 20 mph zones are that the amount of signing is reduced. 'Zone' signage is erected at each end of the zone only as the individual features within the 20 mph zone do not need to be individually signed. This has the effect of reducing street clutter. Furthermore, 20 mph zones do not require the addition of street lighting, owing to the low speeds. However, to ensure a scheme is self-enforcing traffic calming measures need to be installed at very frequent intervals (ideally 50-60 metres) to ensure low traffic speeds are maintained throughout, with motorists encouraged to adopt a smooth style of driving. Given the presence of private accesses combined with on street parking, finding suitable locations to introduced traffic calming features may not be achievable. Creating locations to site traffic calming features may be at the detriment of the removal of on street parking. This is particularly

relevant in Eridge Lane, where the parking layby and other on and off-street parking areas make the introduction of new features extremely difficult.

- 4.7. In terms of the entry points to 20 mph zones, these need to be located where vehicle speeds are already reduced, such as at a junction. As discussed previously the speeds experienced at the approaches to the Village would prevent a gateway to a 20 mph zone being introduced in isolation. In advance of these gateways further traffic calming and speed reduction measures would be required to bring traffic speeds down to the appropriate level. This degree of traffic calming is unlikely to be supported by Sussex Police nor the ESCC Traffic and Safety Team given the rural nature of the road. It is also worth highlighting that the entry point in Church Road may also be dictated by the ability to install the terminal signs at an appropriate location. The lack of footway and areas of privately owned verge on the north side of Church Road will make locating the gateway difficult. Subject to further consultation it may be necessary to use some third-party land to install the terminal sign.

#### Feasible scheme option

- 4.8. The need for the introduction of traffic calming measures is a result of the requirement to extend the 20 mph restriction away from the Village centre onto the approach roads where traffic speed has been recorded above 24 mph. A feasible option could be to focus a 20 mph speed restriction to the Village centre (as shown in Figure 1) given the vehicle speeds are low and may allow a 20 mph speed limit with signing and lining alone to be implemented. To confirm the viability of this, further speed surveys within the Village centre will need to be carried out.
- 4.9. In addition, further measures should be considered on the approaches to the Village to reinforce the existing speed limits. ESH are aware that ESCC have previously looked to introduced measures to reinforce the existing 30 mph speed limit, such as along Mayfield Road, but the conclusions from this exercise found there were limited opportunities to do so. With this said, some measure that may be consider include:

#### Eridge Lane

- Introduce of a 40 mph ‘buffer zone’ in advance of the existing 30 mph terminal signs for southbound traffic.
- If a 40 mph speed limit is not considered acceptable by ESCC or Sussex Police, reinforce the visual aspect of the existing 30 mph speed limit gateways by improving signage and laying coloured surfacing and roundels at this location.

#### B2100 Station Road, B2101 Mayfield Road and B2100 Church Road

- Reinforcing the visual aspect of the existing 30 mph gateways by improving signage and laying coloured surfacing and roundels at these locations.
- Within the existing 30 mph speed limit (between the existing 30 mph gateway and proposed 20 mph speed limit) consider a change to the existing road markings. The removal of the central road markings and provision of edge of carriageway markings may assist in changing driver psychology, giving the impression of a narrow carriageway, which may lead to a reduction of vehicle speed. Ideally the introduction of 30 mph repeater signs would be of benefit but given the presence of street lighting this is not an option available for this location.
- It is noted that the Parish has installed a semi-permanent VAS on the Church Road approach. This seems to be effective and to compliment any permanent measures the Parish should continue to deploy this but rotate it between each of the approach roads in accordance with the licence terms.

- 4.10. Any measures that are proposed would be subject to a safety audit which could result in the elements of the proposals being amended or even removed. In addition, Sussex Police must be consulted over proposed changes to existing speed limits as they would remain responsible for enforcement.

## 5. Scheme Costs

### Construction Cost

- 5.1. The estimated cost of delivering a scheme of this nature would be in the region of £20,000 to £25,000. This assumes that a 40 mph 'buffer zone' on Eridge Lane would be acceptable.
- 5.2. It is unlikely that any diversionary costs for utilities would be necessary given that the proposals are generally for the introduction of signing and lining.
- 5.1 Implementation of a scheme is likely to require a road closure given that existing carriageway widths may prevent construction activities taking place whilst safely providing a route for traffic to pass. This will also contribute to the cost of the works. Other elements that will influence scheme cost include: -
- Whether additional street lighting is required;
  - The type of material to be used;
  - The level/type of enhancements introduced at 30 mph gateways;
  - If third party land is required to install new 20 mph gateway signs (refer para 4.7)

### Design and Supervision Cost

- 5.4 These costs will cover the development of the design from concept through to implementation of a scheme and post construction. Typical activities will include:
- i. Stakeholder consultation during design development;
  - ii. Preparation of design;
  - iii. Undertake Environmental Review/Assessment;
  - iv. Undertake Road Safety Audit or Low Impact Review;
  - v. Provide support to Parish during consultation process (assumed to be led by RPC)
  - vi. Conduct Traffic Regulation Order consultation to support the changes in speed limit;
  - vii. Preparation of contract documents (drawings and specification)
  - viii. Preparation of health and safety package to support construction phase;
  - ix. Site supervision during construction phase;
  - x. Undertake stage 3 road safety audit or post construction review;
  - xi. Update health and safety documents and asset register post construction.
- 5.5 The level of design support will vary depending on the scale and complexity of the project. It is assumed the local community will be in support of the project. Previous experience has shown that schemes where the communities have not been supportive of the proposals result in longer design processes as further consultation and re-iteration of the designs are required.
- 5.6 It is envisaged that the cost for design and supervision will be in the region of £10,000. This cost includes ESCC legal costs for processing Traffic Regulation Orders (TRO) in support of the change in speed limit as well as County Council cost to undertake a Road Safety Audit/Review. It has been assumed that no objections to TRO will be made and no significant alterations to



the design will follow the TRO process given that the community are supportive of this scheme.

- 5.7 Should the Parish wish to progress with a scheme an itemised design and supervision cost will be provided.

## 6. Risks to delivering scheme

- 6.1 The following table summarises the risks identified in delivering the project.

Risks	Mitigation Measures
Capital Cost to implement scheme considered too high for County Council to part fund	Early engagement with County Council Offices through Community Match Application process
Scheme not supported by the community leading to increased design time and cost to address objections to the project.	Parish to conduct earlier stakeholder engagement before application stage to ensure there is support to the project.
Scheme not supported by Statutory bodies and stakeholder groups, including ESCC Road Safety Team and Sussex Police, leading to abortive design costs or protracted design phase to re-develop options or address objections to the project.	Early engagement with stakeholder groups is required to establish if the principals of the scheme are acceptable, preferably before application stage.
Land availability within public highway to implement new features.	Early engagement with ESCC Highway Land Team to confirm highway extents and if necessary hold discussions with third party land owner(s).
Insufficient details of the site, such as underground apparatus and base mapping data to sufficiently develop a design to give confidence in scheme costs	Appropriate risk/contingency made. This will be reviewed at each stage of the scheme.

## 7. Summary and Conclusions

- 7.1 RPC would like to reduce the existing 30 mph speed limit through Rotherfield to 20 mph to improve the environment for pedestrians, equestrians and cyclists.
- 7.2 Traffic speed surveys support their view that traffic speeds in this area are too high, although it is likely that speeds are much lower in the central area of the village.
- 7.3 Subject to further speed surveys the introduction of 20 mph speed limit with in the Village centre using signs and road markings alone could be taken forward for consideration.
- 7.4 Extending the 20 mph limit beyond the Village centre, as proposed by RPC, would mean that traffic calming measures are needed to reduce traffic speeds. Given the traffic speeds recorded at the approaches to the Village, the level of traffic calming required to ensure vehicle speeds are reduced below 20 mph is unlikely to be supported by Sussex Police nor the ESCC Traffic and Safety Team.
- 7.5 As an alternative, it is recommended that a package of measures is introduced to reinforce the existing speed limit on the roads approaching the Village.

- 7.6 In conjunction, the Parish shall continue to deploy the semi-permanent VAS on each of the approach roads.
- 7.7 Further consultation shall be carried out by RPC to ensure that the community are fully in support of a scheme and of any potential future works, and that key stakeholder groups are accepting of the proposals prior to making a formal Community Match application.