Transport for Buckinghamshire

West Wycombe High Street Footway Incursion

Feasibility Study Report

Revision No: 1

Date: **10th March 2022**

Prepared by:	Guillaume Guesne	
Checked by:	David Cairney	
Approved by:	John Pateman	

CONTENTS

1 Introduction

1.1 West Wycombe Parish Council (WWPC) commissioned Transport for Buckinghamshire (TfB) to conduct a feasibility study for the prevention of footway incursions by motorists ensuring the safety of pedestrians. A site visit took place on 14th of July 2021 between engineers from TfB and the WWPC to identify possible options following initial observations.

2 Background

2.1 West Wycombe is a small village situated on the A40 three miles west of High Wycombe in the Chiltern Hills of Buckinghamshire and is the central point of the Civil Parish of West Wycombe. The Parish extends from Chapel Lane in the East to the boundary of Bradenham Parish on the A4010 and the boundary of Piddington Parish on the A40. West Wycombe pre-dates nearby High Wycombe and developed as an important 18th century staging post along the old coaching route from London to Oxford. It is mainly owned by the National Trust and is within a designated conservation area. The A40 is no longer a trunk road but it is a diversion route if there are incidents on the M40 to the south – motorists would make their way north exiting at Junction 5 from Stokenchurch.

3 Current Commission

3.1 On the 21st July 2020, Buckinghamshire Council's Community Board Coordinator submitted a Scheme Request Brief to Transport for Buckinghamshire (TfB) with the following – *'Vehicles travelling westbound through West Wycombe village frequently mount the pavement in order to allow oncoming (eastbound) vehicles to pass – sometimes through necessity, but far more often simply because they are not prepared to give way. When they do so, rather than coming to a halt they frequently continue to drive along the pavement; pedestrians are under threat and have even had car horns blasted at them if they are on the pavement when the car wants to travel along it.'*

3.2 In support of its application, WWPC proposed the following*; 'We are looking at the possibility of placing bollards or other street furniture along the length of the High Street to ensure that vehicles that mount the pavement have to come to a halt. As the pavement varies considerably in width along the High Street, we need to arrange with Transport for Bucks for a site visit to take place in order to ascertain what is feasible: we have to ensure that people with pushchairs and wheelchair users have access; that the neds of our residents and businesses whose homes and premises – some whose front doors open directly onto the pavement – line of the High St; that emergency vehicle access is not impeded in any way; and take into account the fact we are the escape route for the M40 between Junction 5 & 4. A feasibility study needs to be undertaken to work out what is legal and possible in this very busy Conservation Area High Street'*

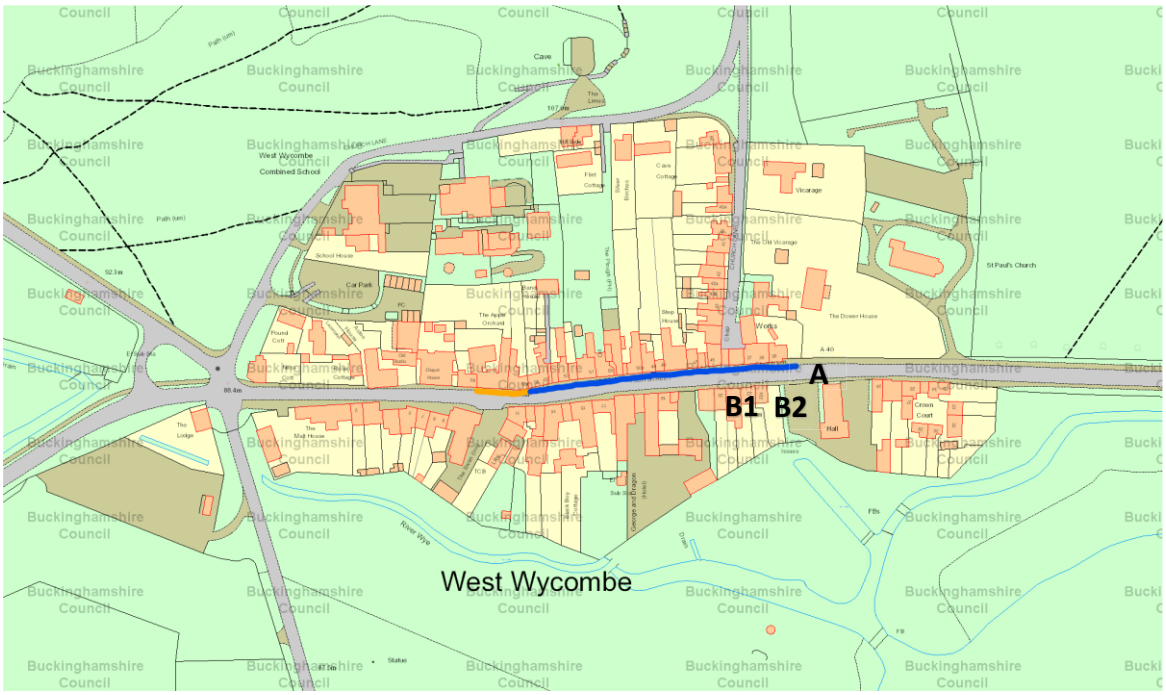
4 Temporary Parking Suspension / Observations

4.1 Initial Site Assessment

4.1.1 From initial site visits, it was identified that the footway incursions took place on the southern footway between the Village Hall car park and No. 11 High Street (opposite the Apple Orchard).

4.1.2 In the initial site visits, the following problems were noted;

- Parking density appeared to have led to an extended narrow section of carriageway (See figure 1 – orange and blue sections)
- Parking on bends leads to motorists committing to the section without full visibility of what approaching the other way (Orange section in Figure 1)
- At point A indicated in Figure 1, westbound traffic is given a false sense of space by centre line markings.



Key to Figure 1	Description
Orange line	Bend / reduced inter-visibility between motorists in each direction / narrow section of carriageway.
Blue line	Area with parking present, creates approx. 120m of narrow carriageway
Location A	Westbound traffic is given false sense of space by centre line markings
Locations B1 & B2	A small number of bollards at these locations may assist reducing footway incursion.

Figure 1: *Overview plan showing initial findings from first site visit*

4.1.3 TfB and WWPC also spoke to businesses and identified a space for motorists to move into may need to be free. It was identified whether adding additional space for HGVs ahead of the bend would alleviate any footway incursions. This was then discussed and agreed with the Apple Orchard ensuring the parking suspension was temporary.

4.2 Methodology

4.2.1 The suggested solution from the initial site visit was to implement a small stretch of double yellow lines (no waiting at any time) on the bend and narrowest section of the High Street (indicated by the orange line in Figure 1).

4.2.2 The idea was to have a temporary parking suspension for a variety of spaces to confirm its effectiveness. First phase being for a total of 20 metres (approximately 4 parking spaces), second phase with a total of 10 metres (approximately 2 parking spaces) and then lift the parking suspension to compare the results among the three.

4.2.3 It was believed that having the parking suspension in place would improve inter-visibility between motorists and allow space for an HGV or motorist travelling eastbound to wait before committing themselves to the narrow section (marked blue in Figure 1).

4.3 Parking suspension Phase One

4.3.1 The parking suspension was for 20 metres (4 parking spaces) as shown in Figure 2 overleaf. This parking suspension was effective from the 11th January 2022 – 25th January 2022.

4.3.2 Observations

4.3.2.1 The 20 metre (4 spaces) parking suspension went ahead from the 11th January 2022. TfB attended site to take photos and video footage for a period of two/three hours during the peak hours of 08:00-11:00 where it was evident the traffic was alleviated, and the motorists had a refuge to allow oncoming traffic to pass due to the nature of the carriageway width not being wide enough for two wide vehicles to pass as there are cars parked on the north side. The 4-space parking suspension was observed for a period of 4 days at different times; 08:00 -11:00, 12:00 – 14:00 and 14:30 - 17:00.

4.3.2.2 During the early hours of 08:00 – 11:00, the traffic was busy, as shown on Table 1.1. Although the traffic was running smoothly and the instances of motorists driving on the footway was minimal, there was still an instance where due to drivers having little patience and assuming there is enough carriageway width, a motorist heading westbound towards the A40 Oxford Road decided to drive on the footway to allow for the opposing traffic to pass. Throughout the assessment, only one occasion of footway incursion was recorded which was due to a vehicle being forced to drive on the footway to allow oncoming traffic.

4.3.2.3 During the hours of 12:00 – 14:00, incoming traffic were coming in groups in both directions, a few cars at the same time, then a period of no vehicles shortly followed with a few drivers passing one another.

4.3.2.4 During the hours of 14:30 – 17:00, the traffic began to slowly increase. There was additional forward visibility due to the parking suspension in place, and motorists approaching the bend by the Apple Orchard slowed down and were more cautious due to the carriageway width. There was an instance of footway incursion by an HGV and a large SUV. This appeared to be due to an SUV driver assuming there was another location they would be able to move into past the Apple Orchard.

4.3.2.5 Traffic counts including pedestrian flows were taken for a period of 5 minutes every 10 minutes for one hour as shown in Table 1.1.

4.3.2.6 There were instances where eastbound vehicle speeds were seen to increase just before the bend and slow down when visibility was clearer.

Figure 2: *Temporary parking suspension between Nos. 58a & 59 High Street 'The Apple Orchard'.*

Traffic count including footway incursions – 20 metres (4 parking spaces)				
Hours	**Vehicular Count inc motorcycles**	**Pedestrian Count along south footway**	**HGVs**	**Footway Incursions**
18.01.2022				
08:00 – 08:05	53	3	3	0
08:15 – 08:20	61	0	1	0
08:30 – 08:35	58	1	3	0
08:45 – 08:50	71	1	2	0
09:00 – 09:05	65	0	2	1
Total	**308**	**5**	**11**	**1**
13.01.2022				
12:00 – 12:05	81	0	2	0
12:15 – 12:20	72	1	1	0
12:30 – 12:35	79	0	2	0
12:45 – 12:50	83	1	1	1
13:00 – 13:05	81	0	3	0
Total	**396**	**2**	**9**	**1**
17.01.2022				
14:30 – 14:35	63	2	3	1
14:45 – 14:50	81	1	3	0
15:00 – 15:05	76	0	1	0
15:15 – 15:20	73	3	1	0
15:30 – 15:35	82	2	2	0
Total	**375**	**7**	**10**	**1**

Table 1.1: *Traffic Count for the period of 1 hour in 10-minute intervals (Phase One – 16 metres).*

4.4 **Parking suspension Phase Two.**

4.4.1 The parking suspension was then reduced to 8 metres (two parking spaces) from the 25th January 2022 to the 2nd February 2022. This was to determine the need for the additional two parking spaces.

4.4.2 Observations

4.4.2.1 The 8 metres (two-space parking) suspension on the north side (Apple Orchard) of the carriageway was effective from the 25th January 2022. TfB attended site for a period of 4 days at different times; 07:45 - 10:30, 12:00 – 14:00 and 14:30 - 17:00. These times were selected to compare the level of traffic along the board as well as observe any instances of footway incursions during these times. Traffic counts were taken at 08:00 – 09:05, 12:00 – 13:05 and 14:30 – 15:35. The data is shown in Table 1.2.

4.4.2.2 TfB observed more parked vehicles and traffic in the early morning (school runs) & 14:30 - 17:00. The increased parking appeared to be due to the parents dropping their children off or picking them up from the nearby school (West Wycombe Pre-School & West Wycombe Combined School). Although the parking suspension was in place, motorists were not parking outside – perhaps due to the previous suspension being 4 spaces.

4.4.2.3 The parking suspension helped motorists move in to allow for the traffic heading westwards towards the A40 Oxford Road. The traffic arriving from the A40 Oxford Road & Chorley Road had two places to stop. One place being outside the Aston House/Chapel House, the other one being outside The Apple Orchard.

4.4.2.4 On the 25th January 2022 TfB attended site from 7:45 – 10:30. At 09:30 a motorist drove on the footway very close to the TfB observer. This motorist travelling eastbound was forced to take action to avoid colliding with an opposing vehicle due to the motorist being impatient and pushing their way through. Image of the vehicle driving on the footway is shown in Figure 3. The observer was uninjured as they were recording from a safe location.

4.4.2.5 The site was assessed from the hours of 14:30 – 17:00 where the traffic was at its peak in the pm. The number of instances of footway incursions was also higher than anticipated, having three instances where some motorists drove on the footway. One instance was captured where an HGV driver drove on the footway to allow for a bus to pass, this image is shown in Figure 4.

Figure 3: *Footway Incursion incident on the 25th January 2022.*

Traffic count including footway incursions – 8 metres (2 parking spaces)				
Hours	**Vehicular Count inc motorcycles**	**Pedestrian Count along south footway**	**HGVs**	**Footway Incursions**
25.01.2022				
08:00 – 08:05	53	3	3	0
08:15 – 08:20	61	2	1	0
08:30 – 08:35	58	1	3	0
08:45 – 08:50	71	1	2	0
09:00 – 09:05	65	0	2	1
Total	**308**	**7**	**11**	**1**
27.01.2022				
14:30 – 14:35	81	2	2	0
14:45 – 14:50	72	1	1	0
15:00 – 15:05	79	0	2	0
15:15 – 15:20	83	0	1	1
15:30 – 15:35	81	2	3	0
Total	**396**	**5**	**9**	**1**
28.01.2022				
12:00 – 12:05	58	0	1	0
12:15 – 12:20	61	0	2	0
12:30 – 12:35	68	2	2	0
12:45 – 12:50	71	1	3	1
13:00 – 13:05	66	0	2	0
Total	**324**	**3**	**10**	**1**

Table 1.2: *Traffic Count for the period of 1 hour in 10-minute intervals (Phase Two – 8 metres)*

***Figure 4**: HGV Footway Incursion.*

4.5 **No Parking suspension**

4.5.1 The parking suspension was removed on the 2nd February 2022. This was completed to compare the results from the two phases.

4.5.2 Observations

4.5.3 Although the parking suspensions were removed, the parking between 58a & 59 (The Apple Orchard) was still vacant and there were a few spaces available which were used by vehicles as a safe place to stop and allow to pass opposing traffic. There were no footway incursions during the observation periods, as shown in Table 1.3. Traffic counts and assessment was undertaken during am peak times – 08:00am – 11:00am and pm peak times 15:30pm – 17:30pm.

4.5.4 Traffic was observed during the early hours of 7:45am – 09:45am on the 4th February 2022. During these times, motorists were a lot more cautious when driving due to the wet weather. As there was less vehicles parked outside frontages and homes, motorists had enough carriageway width to manoeuvre and pass each other without having to drive on the footway. There were no instances of footway incursions during these times and traffic was lighter than usual.

4.5.5 A traffic count was undertaken on the 3rd February 2022 from 15:30 – 17:30. Traffic was observed to be busy but due to the vacant parking spaces, no congestion was witnessed as motorists had a safe place to manoeuvre to and out of when oncoming traffic was present. Enough carriageway was available. No instances of footway incursions were present.

4.5.6 Although no footway incursions occurred during these two days, this was due to the vacant parking spaces which increased the capacity of the carriageway width thus allowing motorists to pass one another with ease and without the need to be forced to drive on the footway.

4.5.7 TfB produced a map of where the instances of footway incursions occurred along the High Street. This map is shown in Figure 5. This map shows the areas which have been affected, there is a pattern on where most of the incursions occur – it tends to be close to the bend by The George & Dragon hotel opposite the Post Office (outside Nos. 12-15 High Street). There were three instances in this area and two before the bus-stop outside number 12 High Street. No footway incursions were observed by the Village Hall where bollards were proposed.

Traffic/pedestrian count including footway incursions (no parking suspensions)				
Hours	**Vehicular Count inc motorcycles**	**Pedestrian Count along south footway**	**HGVs**	**Footway Incursions**
04.02.2022				
08:00 – 08:05	76	1	3	0
08:15 – 08:20	74	0	1	0
08:30 – 08:35	83	1	3	0
08:45 – 08:50	77	2	1	0
09:00 – 09:05	64	1	1	0
Total	**374**	**7**	**9**	**0**
03.02.2022				
16:00 – 16:05	81	2	4	0
16:15 – 16:20	76	0	2	0
16:30 – 16:35	83	0	2	0
15:45 – 15:50	72	3	1	0
17:00 – 17:05	79	1	3	0
Total	**391**	**6**	**12**	**0**

Table 1.3: *Traffic Count for the period of 1 hour in 10-minute intervals (No Parking Suspension)*

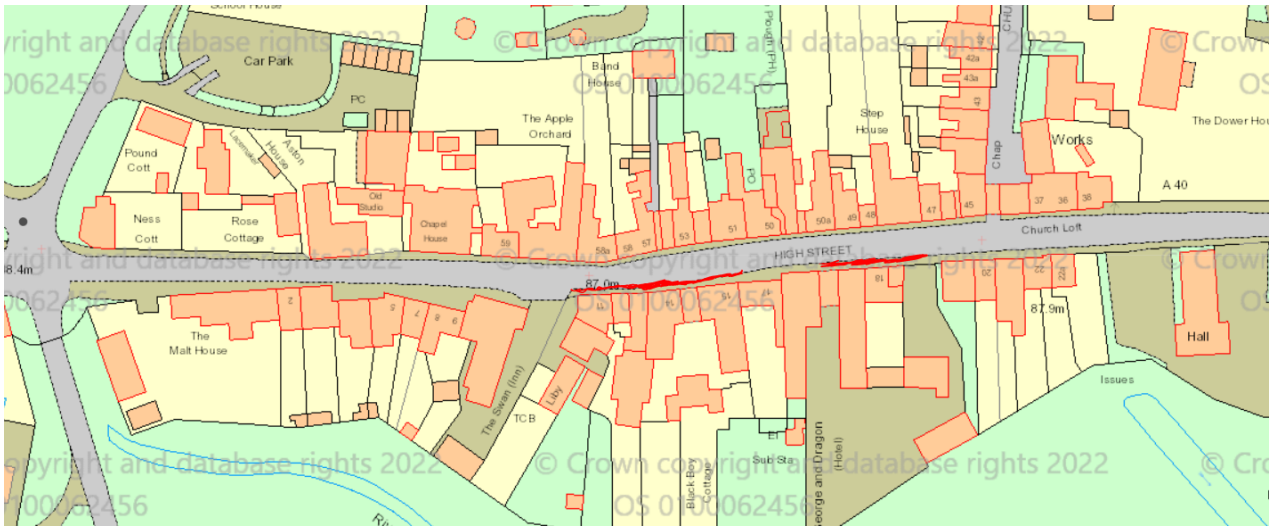


Figure 5*: Areas of observed Incursions (marked in red).*

5 Casualty Data

5.1 Collision history data for the last 5 years (01/12/2016 – 30/11/2021) show that there have been a total of three slight injury collisions. Two of which were on the High Street and one on the junction between Chorley Road & the A40 Oxford Road. Figure 8 indicates the approximate locations of the injury collisions and the dates on which they occurred.

5.1.1 Of these three injury collisions:

- A slight injury occurred on the High Street outside No. 57 High Street involved a distracted motorist car losing control and hitting parked vehicles resulting in the car overturning).
- Slight injury occurred on High Street opposite the Swan Pub (involving a pedestrian walking out between parked vehicles and being struck).
- Slight injury occurred at Chorley Road/West Wycombe Junction with Church Lane (involving a pedestrian walking out between parked vehicles and being struck).

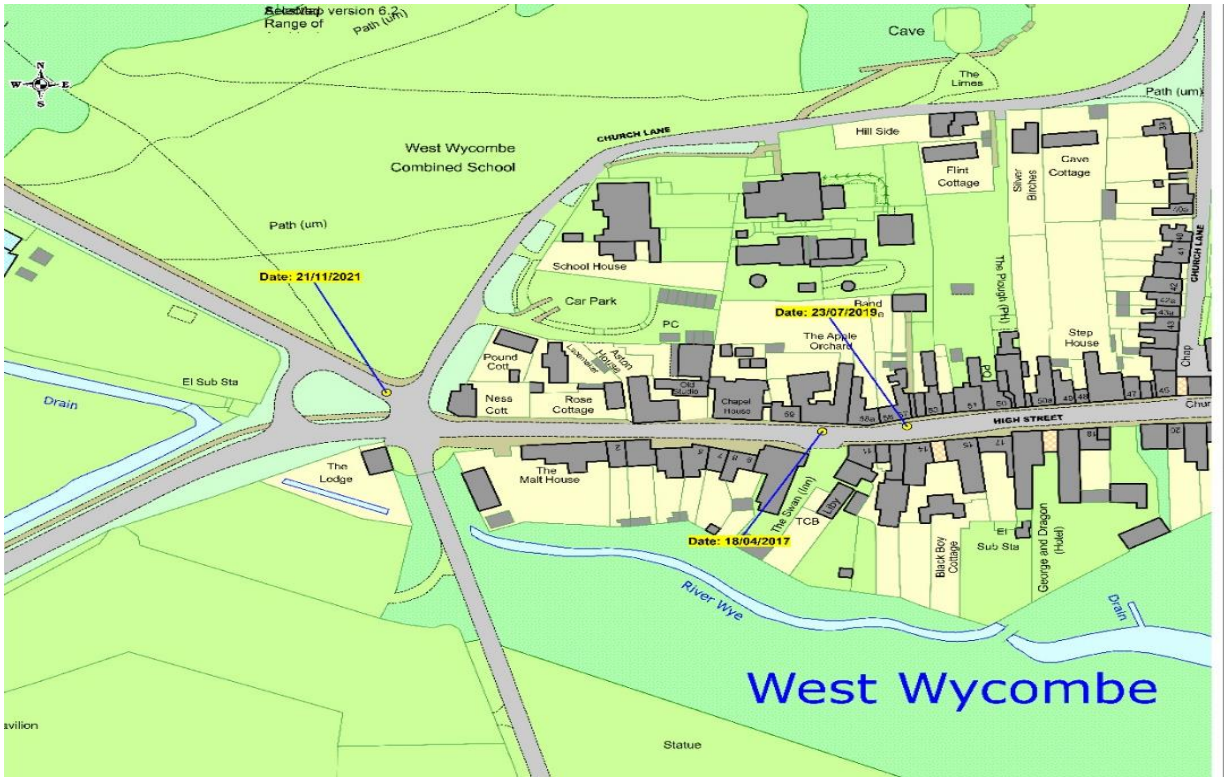


Figure 6: *Injury collision locations and associated dates*

6 Options Brief

6.1 Footways should be designed so that they provide safety for pedestrians from traffic. The Department for Transport Manual for Streets (2007) confirms that there is no minimum width for footways. It suggests that in lightly used streets, the minimum unobstructed width for pedestrians should generally be 2 metres, and that is areas of higher pedestrian flow the quality of the walking experience can deteriorate unless sufficient width is provided.

6.2 Inclusive Mobility (2002) advises that ideally the width of the footway should be 2 metres to facilitate two people in wheelchairs to pass each other comfortably. Where this width is not possible, a clear width of 1.5metres should be provided, with an absolute clear minimum width of 1 metre in exceptional cases. The phrase 'clear' refers to the effective width considering permanent obstacles on the footway such as street lamp standards, trees, telegraph poles, bus shelters for example.

6.3 TfB and WWPC have discussed several options which were considered during the feasibility. Figure 7 shows an overview map with the list of proposed options highlighted that were discussed during the initial site meeting.

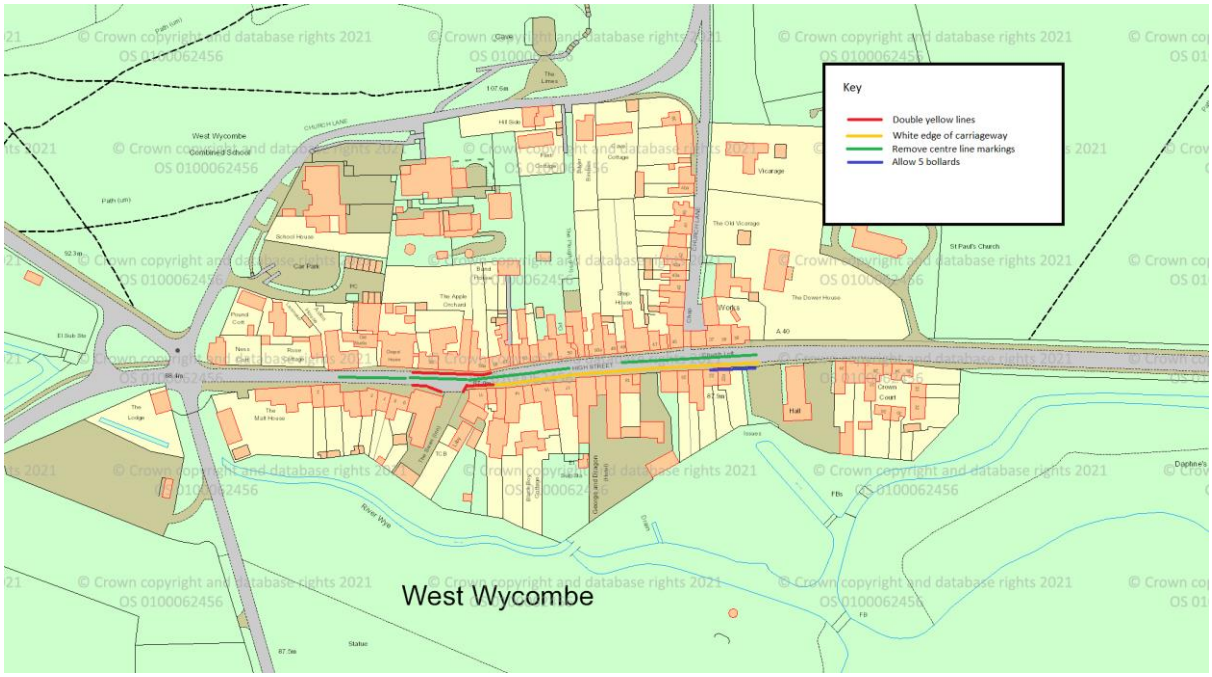


Figure 7: *Proposed options from 16th December 2021.*

7 Option 1: Bollards

7.1 Initially, WWPC proposed the installation of approximately 5 Bollards by the Village Hall. Prior to the feasibility, this was perceived as a feasible option which could alleviate or eliminate the instances of footway incursions as this was perceived to be the main area of concern. This was then assessed and although the footway in this vicinity does show signs of incursions, no incursions were observed during the site visits.

7.2 The main points where incursions occurred were further in the village by the bend outside the Steps House and outside Nos. 12-17 High Street which are very limited in footway width (Figure 7 shows areas of incursions observed). Bollards were assessed to not be feasible due to the minimum footway width requirement to have bollards installed.

7.3 There were a couple of locations where bollards could be installed, however, these locations were observed to not be affected by the incursions. The main areas of concern have very limited footway width (less than 1.2 metres).

7.4 Underground utility searches were carried out and the footway appeared to have a few underground utilities including BT Mains, SSEN LV Mains and Service Cables present. As these were present, installing bollards would be impossible. Typically, bollards need to be installed at a minimum of 300-450mm below ground with an offset of 600mm from edge of carriageway. As the footways in the affected areas are below 1.2 metres this would leave less than roughly 300mm on the footway which would not allow comfortable access if pedestrians need to pass.

7.5 TfB also noticed the footway being used by pedestrians travelling with a pram (some even with a double pram – See Figure 8). This not only shows a safety concern, it also shows the lack of formal crossing facilities in the area to facilitate for residents exiting their homes on that side of the footway.

	isadvantages
	Will only help one specific area (Village all), will not eliminate any incursions urther along the High Street. Will need to be installed avoiding approximate locations of any underground utilities present. Not enough footway width further along the High Street to install any physical restraints in frequently affected areas.

***Figure 8**: Footway width not facilitating for pedestrian with a pram.*

8 Option 2: Waiting Restrictions (Double Yellow Lines)/Parking

8.1 Parking is a key function of many streets, although it is not always a requirement. A well-designed arrangement of on-street parking provides convenient access to frontages and can add to the vitality of a street. Conversely, poorly designed parking can create safety problems and reduce the visual quality of a street.

8.2 The level of parking provision and its location has a key influence on the form and quality of a development, and the choices people make in how they travel. The way cars are parked is a key factor for many issues, such as visual quality, street activity, interaction between residents, and safety.

8.3 TfB and WWPC decided to explore the option of having double yellow lines outside Nos. 59-58a High Street (The Apple Orchard). This was trialled with a series of temporary parking suspensions of various lengths to allow for vehicles to have a safe place to move in allowing the opposing traffic to pass.

8.4 Yellow lines are provided to give lawful effect, by the promotion of a Traffic Regulation Order (TRO) and place restrictions on parking and / or loading. Many of these restrictions are required to maintain the safe and efficient use of the road network. In conservation areas, yellow lines are provided in a paler colour and laid in a narrower width to reduce any negative visual intrusion on the street scene.

8.5 Overall, the parking suspensions worked well, and the flow of traffic was observed to have a very positive impact which was voiced by residents and WWPC members.

8.6 Although the parking suspensions had positive feedback and visible improvements, there were still instances where drivers showed little patience whilst waiting for the opposing traffic to move before manoeuvring, thus resulting in the other motorists driving on the footway.

8.7 If the double yellow lines and parking restrictions were to be enforced, it would have to be for a marginally longer part of the carriageway as highlighted in Figure 9.1. TfB observed a great improvement and no signs of footway incursions whilst the parking outside the post office leading to the Steps House was vacant.

8.8 Parking is a very vital function on the High Street, as the streets are quite narrow due to the parked vehicles, this does impose a pedestrian safety concern on the opposite footway. TfB recommends the introduction of new parking restrictions on the north side of the High Street.

8.9 The proposed new parking restrictions (Essential & Desirable) are shown in Figure 9.1 and 9.2. These will need to be reviewed by Buckinghamshire Councils Parking Services team & key stakeholders.

8.10 Any parking restrictions would need to go through an informal and a subsequent statutory consultation.

8.11 During the school run times (8:15-9:00 & 14:30-16:00) parents/caretakers would park on the High Street for the period of 25+ minutes with the engine running to ensure they have a parking space to drop/pick up their children to/from the school. This not only has a detrimental environmental impact, it also severely reduces the remaining carriageway width which in turn results in motorists driving on the footway to pass another vehicle.

8.12 Figure 9.1 shows the proposed essential double yellow lines encouraging compliance with highway Code Rule 243 which states no vehicles shall park opposite or within 10 metres (32 feet) of a junction. Currently, no lines are present, and this would drastically change the dynamic of the carriageway, allowing more visibility for pedestrians by the pedestrian desire lines as there has been a previous pedestrian injury collision at this location. This would also improve visibility for motorists approaching the bend.

8.13 Figure 9.2 shows additional desirable proposed sections of double yellow lines, which may in turn eliminate any instances of footway incursions as this was observed to be a pinch-point for motorists. Currently, there is insufficient space for motorists to safely move into due to the lack of carriageway width when cars are parked between Nos. 46-49 (The Steps House).

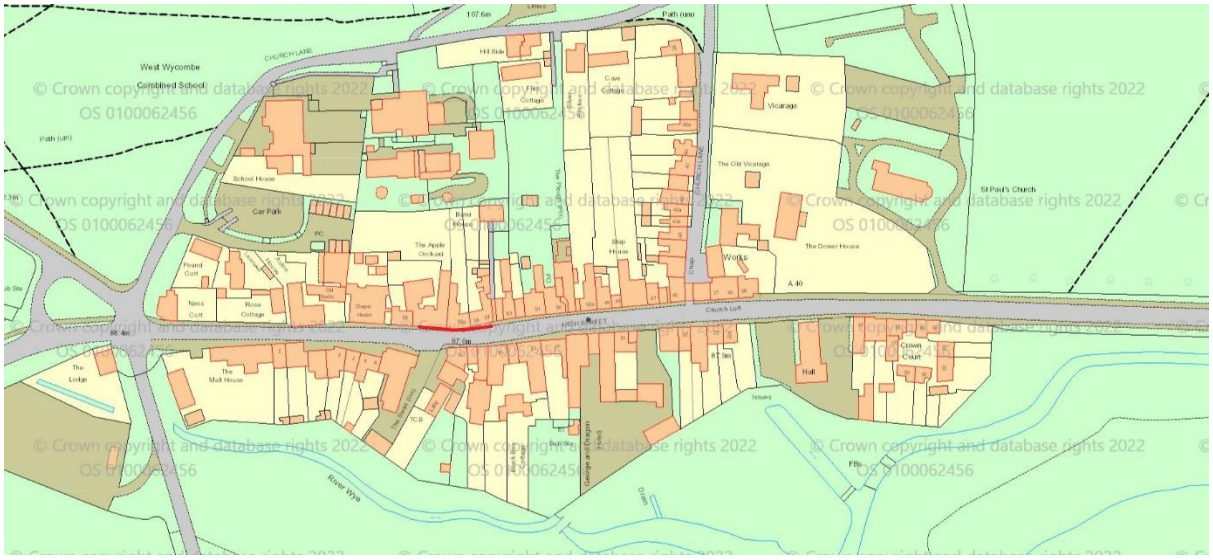


***Figure 9.1**: Essential section of proposed 'no waiting at any time' restriction.*

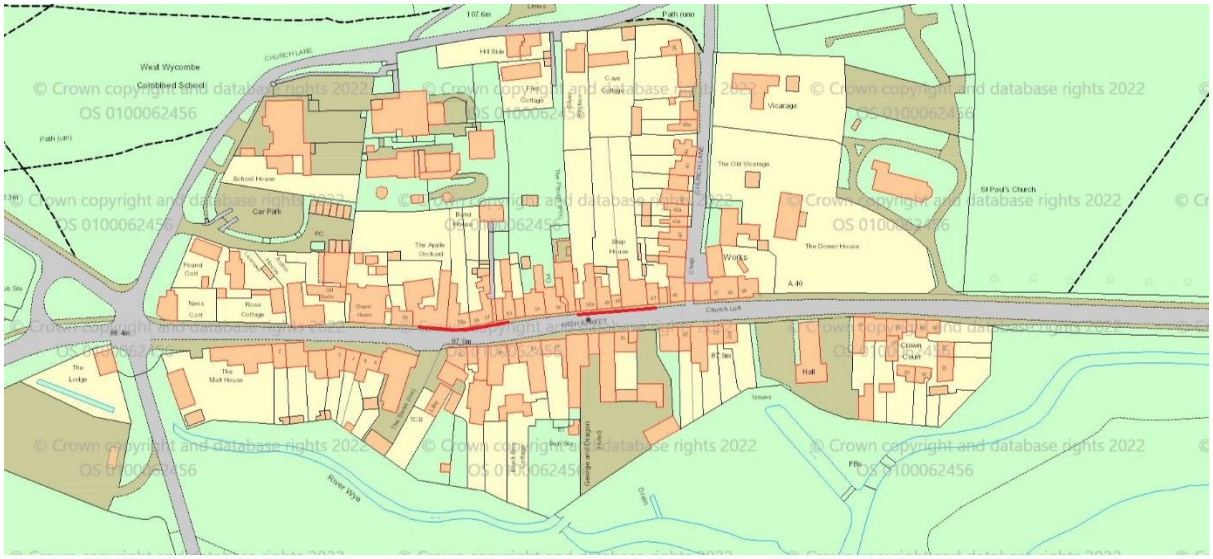


***Figure 9.2**: Essential & Desirable sections of proposed 'no waiting at any time' restriction.*

Advantages	Disadvantages
Will help eliminate any footway incursions on the narrow footway. Visibility will be increased at pinch point by the bend where the carriageway narrows slightly. This will also benefit pedestrians needing to cross or exit vehicles in parking bays. Will allow for two HGVs to pass without having to cause any traffic due to parked vehicles. Village will look less cluttered with double yellow lines/decreased on-street parking. Eliminates indiscriminate or obstructive parking. Supports Highway Code & Increases pedestrian safety noting there is a collision involving a pedestrian. If desirable passing place is also implemented, this is likely to remove all footway incursions.	Residents & businesses may strongly disagree to the proposed parking layout Due to the street being on the A40, there could be an increase in speeding as drivers will have less obstructions and more visibility. The cost to undertake an informal consultation and statutory consultation. Removing parking may affect frontages and business operations (although it is noted there is still underutilised parking in other wider parts of the High Street).

9 Option 3: Removing Centre Line Marking

9.1 WWPC and TfB also considered removing the carriageway centre line which had previously shown to be effective by increasing the driver's awareness and ensuring more caution was taken.

9.2 Several surveys show that the clearer the road marking layout, the more positive drivers are in their accounts and general behaviour.

9.3 This approach has been successful in before in Buckinghamshire, but considerable judgement is required to minimise any risks resulting from removing signs and road markings. Consideration must be given to the traffic flows, existing speed, location, and numbers of vehicles using the road. Currently, this is still being trialled according to the TfB traffic calming booklet.

9.4 The preferred methodology for removing the road markings is to blast the road markings off the road surfacing using high pressured water jets, called Hydroblasting, providing the road surface is in sound condition. Should the road surface not be suitable for high pressured jetting, it may be necessary to resurface the top layer.

9.5 The environmental and safety advantages of hydroblasting include;

- No chemicals, additives or abrasive materials are used
- No fumes, smoke or dust is generated
- Noise levels are considerably lower than other road marking removal methods.

9.6 Although the hire of hydroblasting equipment is expensive – and not usually as cost effective when used on the same scale as other methods – it is, for the above reasons, the preferred method of road marking removal in Buckinghamshire. To increase the cost effectiveness of using this preferred method, a package of works requiring hydroblasting should be put together.

9.7 During the site visits it was noted that the existing carriageway may not be suitable for high pressure jetting.

9.8 An assessment of the carriageway would need to be undertaken to confirm the state of the carriageway before works. The main works of jetting will also require a lane closure for the extents of the delineation which will mean a parking suspension along the entire extent would be put in place to allow traffic to travel through a single lane using temporary lights on either side.

9.9 Proposed length of centre line removal is shown in Figure 7 (page 16).

9.10 Removing the centre line may encourage drivers to be more cautious. Transport for London (TfL) conducted a trial removing centre lining on several roads. In its report, TfL addressed why drivers travel faster on roads with centre lines. They wrote ''Getting into the 'minds' of drivers is not easy. A theory is that centre lines and hatching can provide a psychological sense of confidence to drivers that no vehicles will encroach on 'their' side of the road. There can also be a tendency for some drivers to position their vehicles close to a white line regardless of the traffic conditions, believing it is their 'right' to be in this position. Centre line removal introduces an element of uncertainty which is reflected in lower speeds.''

9.11 Although removing the centre line may result in lower speeds, it does not eliminate the lack of carriageway width and visibility at the bend by the post office and outside the Steps House as shown in Figures 10.1 & 10.2.

Figure 10.1: *Outside Steps House, limited carriageway width.*

Figure 10.2: *Limited visibility around bend when cars are parked.*

Advantages	Disadvantages
Can encourage reduced speeds by removing lane delineation. Reduces road marking clutter. Can remove 'urbanising' effect within the High Street. Introduces a level of uncertainty to drivers ensuring caution is taken.	Line removal can be expensive. Jet blasting can damage existing road surface if not suitable. Removes guidance provided to motorists through the use of visual road markings. Slowing traffic does not eliminate the instances of footway incursions.

10 Option 4: White edge of carriageway lining

10.1 Edge markings have merit as a safety measure despite their efficiency sometimes being impaired by dirt because of their location near the edge of the carriageway. They can also help to protect verges on narrow rural roads.

10.2 These lines delineate the edge of the carriageway and act as a useful guide to maintain a safe, lateral position on the road.

10.3 The edge line ensures drivers stay on their lane while avoiding the kerb due to the offset of 225mm as mentioned in the Traffic Signs Manual – Chapter 5. Where the carriageway is less than 5.5 metres in width, the centre line should be omitted but the edge lines, where used should be continued.

10.4 Having the edge of carriageway lines present will provide drivers heading west on the High Street with a clear indication of any upcoming bends allowing them to slow down and proceed with caution.

10.5 The provision of edge lines has been proven to be most effective when paired with the centre line removal. The edge lines provide motorists with a clear indication of the edge limits extent of the carriageway, but the absence of centre lines introduces a level of uncertainty as to whether there is sufficient space for opposing motorists to pass. This has been proven to reduce speeds.

10.6 As the carriageway width varies, there are sections that would only allow for one HGV to pass - this would not eliminate the risks of footway incursions.

10.7 Team responsible for conservation may object any new lining as this lies in the West Wycombe Conservation Area. Unless legally required, this may be negated as the Aylesbury Vale Highway Protocol mentions '*white lines are a negative visual intrusion on the street scene and should be avoided*.'

Advantages	Disadvantages
Great guide for drivers to maintain a safe, lateral position on the road. Lining may help alleviate motorists driving too close to the kerb. Relatively cheap to install.	Depending on the carriageway surface, resurfacing may need to be undertaken to ensure the lining is effective. As it is not a physical constraint, motorists may still choose to drive on the footway. Team responsible for conservation may object any new lining as this lies in the West Wycombe Conservation Area.

11 Conclusions and Recommendations

11.1 The aim of this feasibility report was to investigate the available options and make recommendations to improve the safety of pedestrians and residents walking along the footway. This feasibility report specified the options and estimate costings for each available option.

11.2 It is apparent that there is no one solution to address the issues – Options 1, 3 and 4 offer several alternatives that could, to varying degrees, reduce the number of footway incursions along the High Street. However, as there are still physical constraints in place and limited visibility due to parked cars, the incursions may still occur.

11.3 Options 3 and 4 would cost more to implement but there would be more benefits in having both options in place that is, removing the centre line and adding the edge of carriageway lining. This has been proven through reports to have a positive impact in ensuring drivers are more cautious and it also gives them an outline of where their vehicles should be.

11.4 Option 2 has been proven to be the most effective and worthwhile option. The proposed parking restrictions shown in Figures 9.1 & 9.2 will need to be reviewed by Buckinghamshire Councils Parking Services team & key stakeholders to determine their suitability. Any agreed parking restrictions would then need to go through an appropriate consultation exercise.

11.5 The collision history shows that there is an element of pedestrian safety at play. Ensuring the footway is safe for pedestrians to use has been an ongoing issue and WWPC have previously funded uncontrolled crossing points which have shown to be beneficial, these are however, uncontrolled.

11.6 In conclusion, the most viable option to eliminate or significantly reduce any footway incursions would be to manage the parking along the high street. The trialled parking suspensions have shown a positive outcome throughout and TfB recommends a new parking/waiting restriction arrangement to be applied and explored.

12 Cost estimates

12.1 All budget cost estimates within this report are initial budget estimates based upon recent TfB experience, recent similar schemes, and brief discussions with contractors.

12.2 The cost estimates – which include TfB fees associated with the design, procurement, supervision, and progression of the schemes – are indicative costs only and any variations to the outlined proposals could cause the cost to increase or decrease.

12.3 In addition to the double yellow lines and new waiting restrictions, cost estimates for the TRO option also include informal consultation (if necessary), formal consultation, legal notices and newspaper adverts, decision reporting and implementation.

Numbers	Options	Costs
1	x5 Bollards (Heritage/Conservation Area)	**£6,000 - £7,500**
2	Double Yellows/Parking bays	**£14,000 - £18,000**
3	Removing centre line	**£5,500**
4	Edge of carriageway line	**£5,000**
3 and 4	Remove centre line & implement edge of carriageway line	**£8,500**
2, 3 and 4	Double Yellows/Parking bays, remove centre line and introduce edge of carriageway line	**£17,500 - £21,500**

***Table 2**: Cost Estimates*