



Cuddington Parish Council

Cuddington, Buckinghamshire

20mph Feasibility Report

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I Introduction

I.1 Overview

- 1.1.1 PJA has been commissioned by Cuddington Parish Council to prepare a feasibility study for the implementation of a 20mph zone in the village.
- 1.1.2 This report also includes a review of potential options for traffic calming in the village to help reduce vehicle speeds and improve road safety.

I.2 Purpose of this report

- 1.2.1 This report has been prepared to summarise the work undertaken by the team and to provide an overview of the outcomes and next steps required.
- 1.2.2 The remainder of the report is structured as follows:
- **Chapter 2:** Policy and Guidance
 - **Chapter 3:** Local Context
 - **Chapter 4:** Average Speed Analysis
 - **Chapter 5:** Potential Extents of 20mph Limit
 - **Chapter 6:** Traffic Calming
 - **Chapter 7:** Conclusions and Next Steps



2 Policy and Guidance

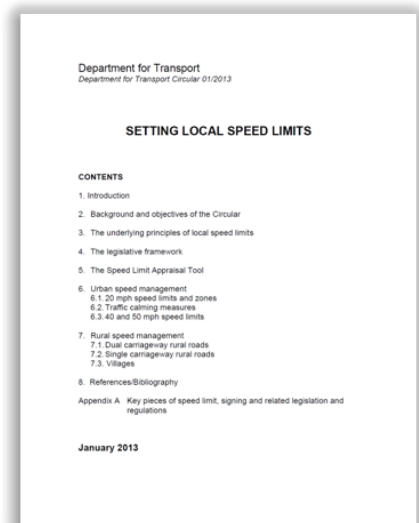
2.1 Overview

- 2.1.1 This section sets out the relevant Government guidance for implementing or reviewing speed limits.

2.2 National Policy and Guidance

Department for Transport (DfT) Circular 1/2013

- 2.2.1 When implementing or reviewing speed limits, councils in England must 'have regard' to the relevant Government guidance: Department for Transport circular 1/2013, Setting Local Speed Limits, published in January 2013. Buckinghamshire Council Highways Department currently follows this guidance when setting local speed limits.
- 2.2.2 The Circular explains that 20mph limits may be introduced which are sign-only and do not require traffic calming. Such limits are increasingly being applied to large areas and provide a cost-efficient method of encouraging lower and safer vehicle speeds. In contrast, 20mph zones require traffic calming measures at regular intervals and usually cover 'a number of roads' although only one of these measures needs to be a physical feature - the rest can be road signs or markings.
- 2.2.3 Examples of sign-only 20mph limits introduced elsewhere have resulted in small but worthwhile reductions in driver speeds overall, including on streets where the after speed remains above 20mph, and where the reductions in speed have been greatest. They have also been associated with an improvement in highway safety and increases in walking and cycling, with examples outlined in the document.
- 2.2.4 The DfT's current advice on setting 20mph limits over a larger area is given in Para 97 of the Circular, which states:



*"The implementation of 20 mph limits over a larger number of roads, which the previous Speed Limit Circular (01/2006) advised against, should be considered where mean speeds at or below 24 mph are already achieved **over a number of roads**. Traffic authorities are already free to use additional measures in 20 mph limits to achieve compliance, such as some traffic calming measures and vehicle activated signs, or safety cameras. Average speed cameras may provide a useful tool for enforcing compliance with urban speed limits."*



2.2.5 As noted in the quoted paragraph, this represents a significant change from the previous DfT advice, published in 2006, which stated that 20mph limits should be used for individual roads, or for a small number of roads. **Current Government guidance is therefore that it is not necessary for all roads within the proposed 20mph limit to have an existing mean speed of 24mph or below.**

2.2.6 The Circular also recommends paying regard to the function of a street when determining the suitability of a 20mph speed limit:

“20 mph zones are predominantly used in urban areas, both town centres and residential areas, and in the vicinity of schools. They should also be used around shops, markets, playgrounds and other areas with high pedestrian or cyclist traffic, though they should not include roads where motor vehicle movement is the primary function. It is generally recommended that they are imposed over an area consisting of several roads.”

2.2.7 The majority of streets within the built up extent of Cuddington are residential uses, however there are some streets through the centre of the village such as Aylesbury Road that serve a mixture of both residential and commercial uses. The roads on the approach to the village are more rural in character, however it is important to note that the western extent of Bridgeway serves a number of residential dwellings and the eastern extent of Aylesbury Road serves Brookfield Farm.

2.3 Local Policy

Buckinghamshire Council

Policy Position

2.3.1 The Council’s current position with regards to speed limit changes is outlined on the Buckinghamshire Council website¹.

2.3.2 This states that Buckinghamshire Highways follow the DfT Circular 1/2013 guidance when settling local speed limits. The website states that:

“20mph speed restrictions may be suitable for streets that are primarily residential and in either town or city streets where pedestrian and cyclist movements are high, such as around schools, shops, markets, playgrounds and other areas, where motor vehicle movement is not the primary function.

Successful 20mph zones and 20mph speed limits generally should be self-enforcing, i.e. the existing conditions of the road lead to a mean traffic speed broadly compliant with the desired speed limit. To achieve compliance there should be no expectation on the police to provide additional enforcement beyond their routine activity, unless this has been explicitly agreed.”

¹ [Change a speed limit | Buckinghamshire Council](#)



- 2.3.3 Buckinghamshire Council and Thames Valley Police currently only support 20mph speed limits where mean speeds are at or below 24mph. Where average speeds are higher than 24mph, then traffic calming would likely to be required by Buckinghamshire Council as part of any 20mph scheme.

Dollicott 20mph Limit

- 2.3.4 There are examples of 20mph limits and trial schemes being implemented in Buckinghamshire in the neighbouring village of Haddenham.
- 2.3.5 A 20mph speed limit was implemented over a series of roads in Dollicott, Haddenham in 2020. Three ATC surveys were undertaken to assess the impact of the new 20mph speed limit being implemented along this link:
- Pre-introduction of 20mph limit: 07/02/20 – 13/02/20
 - Following introduction of 20mph limit: 30/11/20 – 06/12/20
 - One-year after introduction of 20mph limit: 18/10/21 – 24/10/21
- 2.3.6 The average 24 hour, 7-day speeds recorded in each survey have been summarised in Table 2-1 for ease of reference.

Table 2-1: ATC Speeds – Dollicott Lane and Rudd's Lane

Survey Dates	Dollicott Lane Average Speed	Rudd's Lane Average Speed
07/02/20 – 13/02/20	21.3mph	19.7mph
30/11/20 – 06/12/20	19.2mph	18.7mph
18/10/21 – 24/10/21	20.0mph	18.3mph

- 2.3.7 Table 2-1 demonstrates that the implementation of a 20mph speed limit along this link reduced average speeds by 1.3-1.4mph within a one year period.

Thame Road Temporary 20mph Limit

- 2.3.8 In October 2020, a trial scheme was implemented in Haddenham, through the government's Emergency Active Travel Fund. This included an advisory eastbound cycleway on Thame Road and an advisory 20mph speed limit from Haddenham and Thame Parkway Station to the Woodways and Stanbridge Road junction. The TTRO was in place throughout the COVID-19 period and was removed in March 2022.
- 2.3.9 ATC data for Thame Road was collected by Buckinghamshire County Council for a 7-day period in 2021 and 2022, between 30/11/21 – 06/12/21 and then between 14/10/22 – 20/10/22. The 2021 survey was undertaken during the temporary 20mph speed limit in place in December, whereas the 2022 survey was undertaken with the usual 30mph speed limit in place.



- 2.3.10 The average speed from each survey has been calculated as a 24 hour, 7-day mean average. Interestingly, this shows that the average speed during the 2021 survey was 26.3mph, compared to 25.4mph during the 2022 survey. This equates to a decrease of 0.9mph, showing that the average ATC speeds were in fact higher while the temporary advisory 20mph speed limit was in place.

2.4 Other Examples of Local Policy and Guidance

- 2.4.1 There are examples of other Councils in the UK that are departing from the current DfT guidance and setting their own policies for changing speed limits.

Oxfordshire County Council

- 2.4.2 The Oxfordshire County Council policy on 20mph was set in October 2021 in its Speed Restriction Policy Statement². The policy has a more progressive view than the DfT Circular 1/2013, recognising the suitability of 20mph as the default speed limit for areas that are primarily residential, villages or retail. The policy states:

- SLP1 - Oxfordshire County Council will promote 20mph as the **default limit** for roads through residential, villages and retail areas to ensure speeds are appropriate for the nature of the road, environment and location.
- SLP2 - Oxfordshire County Council will permit sign only 20mph schemes to be implemented **regardless of the existing speeds travelled**.

Surrey County Council

- 2.4.3 Surrey County Council's 20mph policy is included within its Vision Zero Road Safety Strategy (2024-2035). This strategy recognises the important role of speed limit reduction in reducing road danger³.
- 2.4.4 This review includes a new and more flexible policy approach to implementing 20mph schemes in residential areas, town centres and near schools. The requirements for setting a 20mph limit are:
- New 20mph speed limits using signs alone are allowed if existing mean average speeds are below 24mph or less
 - If average speeds are between 25 and 28mph, then **"light touch" supporting measures** will be required. This could include additional roundels, electronic activated signs and enhanced speed limit gateways
 - If average speeds are above 28mph, then physical engineering measures would be required to successfully reduce vehicle speeds

² [PLOOCT1321R10- 20mph Cabinet Report Annex A.pdf \(oxfordshire.gov.uk\)](#)

³ [Annex 1 Vision Zero Strategy Nov 2023 ver 13.pdf \(surreycc.gov.uk\)](#)



- 2.4.5 With regards to the length of new speed limits, the policy also states that shorter stretches of 20 mph limit or 30 mph limit (to a minimum of 300m long), will be allowed because these changes in speed limit will be more obvious to motorists when travelling at lower speeds. This is a departure from the DfT policy and provides greater flexibility to introduce shorter stretches of 20 mph or shorter “buffers” of 30 mph on the approach to new 20 mph limits from higher speed limits.

Cornwall Council

- 2.4.6 Cornwall has recently become one of the first rural areas to reduce speed limits from 30mph to 20mph on residential roads and in built up areas. As part of this programme, all 30mph roads in the county are being reviewed by the council with the intention of reducing the speed limit to 20mph. There may be some exceptions to this, which will generally be major roads where vehicles are the primary function.⁴
- 2.4.7 After successful trials in 2022 in Camelford, Falmouth and Penryn, the council is now rolling out the scheme across the rest of Cornwall in order of priority, looking ahead to 2026/27 for the lower priority locations.

Cambridgeshire County Council

- 2.4.8 Cambridgeshire County Council has created an annual funding programme than enables applications for funding to install either 20mph zones or limits countywide. This enables the delivery of up to around eight individual schemes per year.⁵
- 2.4.9 The programme states that a new 20mph limit should be in an area where there is a justification for a lower speed limit, for example an area that has:
- evidence of traffic incidents or **potential dangers** within an existing 30/40mph
 - vulnerable road users e.g. pedestrians (of all ability), cyclists, equestrian users and motorcyclists
 - visible homes, shops, and business frontages
 - a school or a school route
 - a cycling route
 - a quiet lane designation
 - an area that would benefit from more active travel such as cycling and walking

⁴ [20mph speed limits - Cornwall Council](#)

⁵ [20mph Funding - Cambridgeshire County Council](#)



- 2.4.10 The wording of point one is important, as it does not limit the implementation of 20mph limits on roads where there is an existing issue with traffic collisions, but instead emphasises a proactive approach to reducing vehicle speeds in order to prevent collisions from occurring in the first place.

2.5 Enforcement

- 2.5.1 The current speed enforcement policy guidelines for the Police are set out in the ACPO Speed Enforcement Policy Guidelines (May 2013).

- 2.5.2 This policy guidance states that enforcement will be considered in clearly posted limits, given other priorities, and this will be by:

- 1 *“Targeted enforcement where there is deliberate offending/disregarding and the limits are clear;*
- 2 *Where limits are not clear (that is they don’t feel like/look like the limit or are on inappropriate roads), they will not be routinely enforced (routinely means regular planned attendance where there isn’t intelligence of deliberate offending) only targeted where there is intelligence of obvious deliberate disregard”*

- 2.5.3 The current police guidance is therefore clear that 20mph speed limits are enforceable, so long as they are clear and implemented on appropriate roads and/or with the appropriate traffic calming measures in place.

2.6 Road Danger

- 2.6.1 Paragraph 30 of the DfT Circular 1/13 states that the following factors are important when setting an appropriate speed limit:

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

- 2.6.2 In terms of road danger, the emphasis is placed on recorded collisions, however the guidance does go on to note in paragraph 33:

*“Different road users perceive risks and appropriate speeds differently, and drivers and riders of motor vehicles often do not have the same perception of the hazards of speed as do people on foot, on bicycles or on horseback. **Fear of traffic can affect peoples’ quality of life and the needs***



of vulnerable road users must be fully taken into account in order to further encourage these modes of travel and improve their safety. Speed management strategies should seek to protect local community life.”

- 2.6.3 There is therefore a recognition in the guidance that perception of safety should be a consideration when setting speed limits in order to protect local community life. This is particularly pertinent in a village setting such as Cuddington and research shows that perceptions of speed is more important than actual speeds in terms of walking and cycling levels⁶.
- 2.6.4 Moreover, a reliance on recorded collisions omits any unrecorded collisions (i.e. collisions where no injury occurred and therefore were not reported to the police) and any near misses that have occurred.

2.7 Summary

- 2.7.1 This policy review has summarised the current national guidance on setting speed limits, which is set out in the DfT Circular 01/13. At present, this policy is followed by Buckinghamshire Council.
- 2.7.2 As this document is now over 10 years old, there is an increasing number of examples from across the country where councils have created their own policy guidance on implementing 20mph speed limits or zones which often depart from the DfT guidance and enable a more flexible approach to setting 20mph speed limits. These policies recognise the key role that such schemes can play in reducing road danger.
- 2.7.3 The current Police policy guidelines have also been summarised, highlighting that 20mph limits are enforced by the Police, so long as they have the look and feel of a 20mph road.
- 2.7.4 This section has also highlighted the important distinction between perceived road danger and actual road danger, which should both be important considerations in lowering speed limits.

⁶ [20mph research study - process and impact evaluation: headline report \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/612222/20mph-research-study-process-and-impact-evaluation-headline-report.pdf)



3 Local Context

3.1 Highway Network

- 3.1.1 Cuddington is bisected by three roads which provide vehicular access to the village from the east (Aylesbury Road), south (Dadbrook) and west (Bridgeway/The Green). Further details on the character of each of these roads is provided in Chapter 5.
- 3.1.2 These roads carry the bulk of through traffic within the village and the existing footway provision alongside these roads is limited in terms of width and quality, with no formal pedestrian crossings provided. The highway network within the village therefore creates severance for pedestrian movement through the village, particularly for north-south pedestrian movements.
- 3.1.3 The table below indicates the average daily traffic flows on each of the roads based on ATC data collected by Buckinghamshire Council between 04/11/23 – 11/11/23.

Table 3-1: Existing Traffic Flows

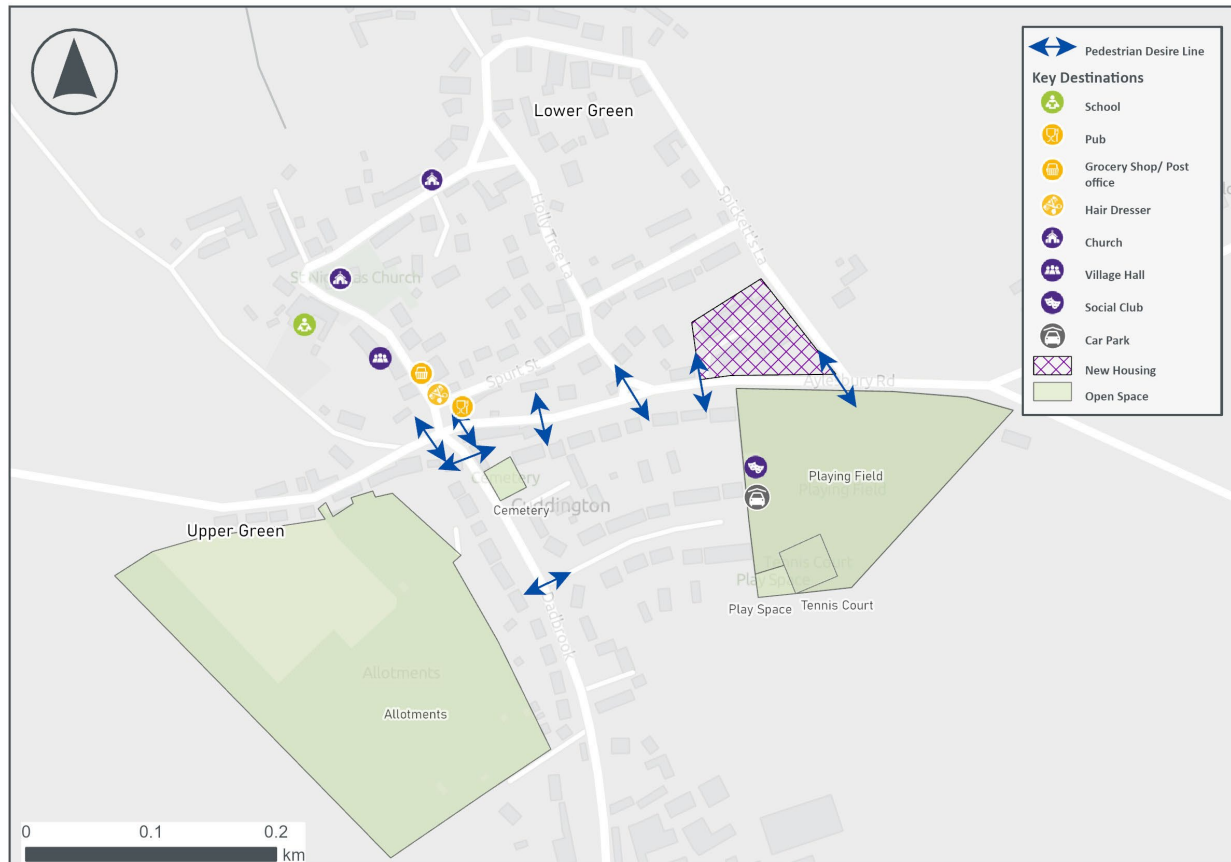
Road	Daily Volume (7 day average)
Aylesbury Road (south-west of Brookfield Farm)	1,690
Dadbrook (south of Dadbrook bridge)	3,282
Bridgeway (south-east of Cuddington Mill Road)	3,902

3.2 Trip Attractors

- 3.2.1 The key trip attractors in the village are highlighted on the plan in Figure 3-1. The plan demonstrates that the majority of the amenities within the village are located to the north of Aylesbury Road, including the village shop, hairdressers, school and pub. To the south of Aylesbury Road, there are some notable destinations including the playing fields, social club and allotments.
- 3.2.2 The key pedestrian desire lines are also highlighted in blue on the plan. As can be seen, there are multiple pedestrian desire lines across Aylesbury Road, in particular where residents are likely to walk to local trip attractors from the south of the village. This is particularly evident at the Aylesbury Road / Dadbrook / Bridgeway crossroads, where there are north-south desire lines on either side of the junction, as well as an east-west desire line for pedestrians crossing Dadbrook between Bridgeway and Aylesbury Road to access the open space at the eastern and western extents of the village.
- 3.2.3 Also worth noting is Brookfield Farm, located to the east of the village on Aylesbury Road. The location of this farm means that there are many equestrian road users who currently travel along Aylesbury Road towards the village and mix with fast-moving traffic.



Figure 3-1: Trip Attractors and Pedestrian Desire Lines



3.3 Summary

- 3.3.1 This chapter has illustrated the main pedestrian desire lines within the village and how these desire lines interface with the three main roads within the village. The existing infrastructure for pedestrians along these roads is poor, with narrow footways and limited crossing points.
- 3.3.2 Therefore, reducing vehicle speeds through traffic calming is crucial to improve the safety of pedestrians (perceived and actual) and enable residents to undertake short journeys on foot.



4 Average Speed Analysis

4.1 Overview

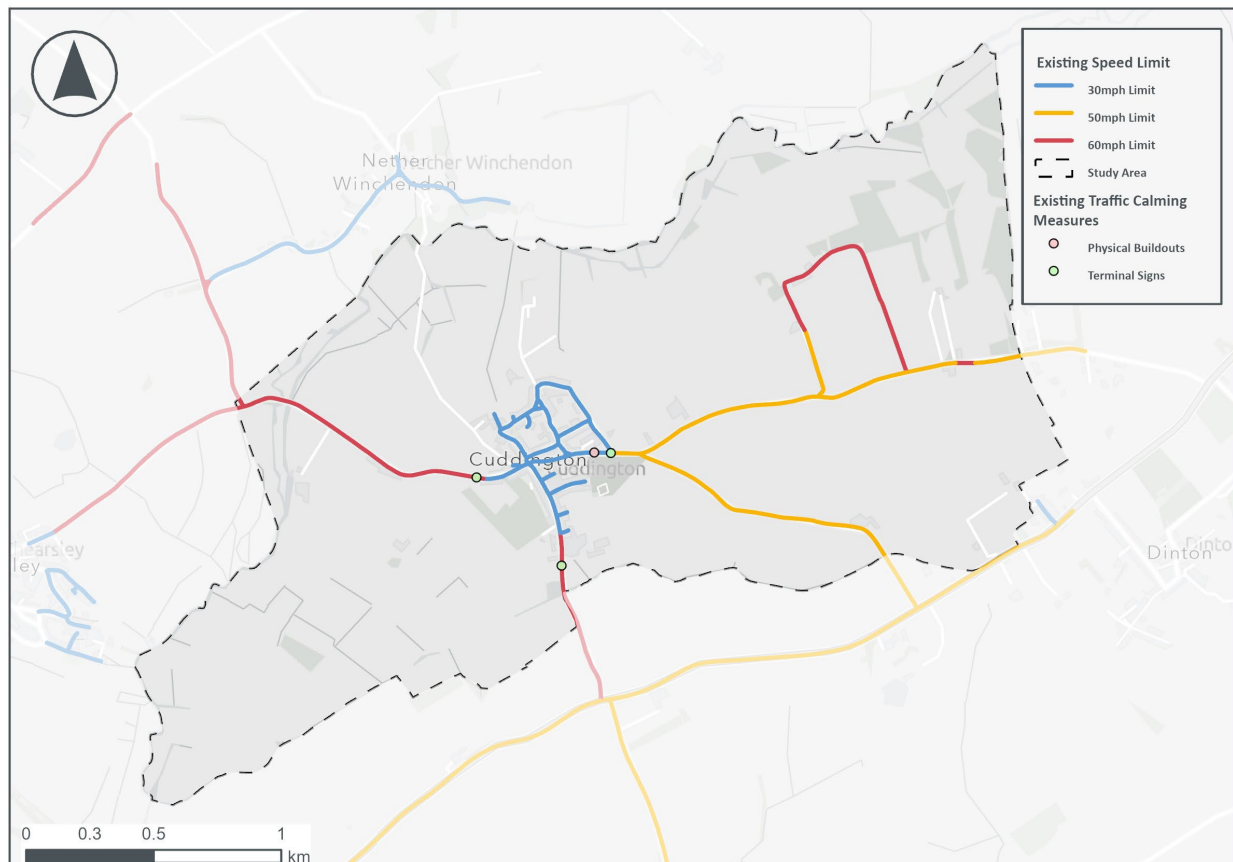
- 4.1.1 Whilst it is important to consider user needs as part of any decision on introducing a 20mph Limit in Cuddington – i.e. considering the function of the street and the likelihood of pedestrian and cyclist activity – it should also be recognised that where existing traffic speeds are too high, public acceptance of a 20mph Limit could be brought into question, both in terms of complaints about lack of compliance and people considering that maintaining excessively low speeds is onerous.
- 4.1.2 Therefore, it is sensible to have an understanding of traffic speeds in the village in respect of how significantly they differ from a target threshold of 24mph. This is the value cited in Circular 1/2013 - if mean speeds are above 24mph, it suggests that signage alone is less likely to engender compliance with the posted limit.
- 4.1.3 By looking at mean average speeds across Cuddington, it can be determined how close to compliance any streets are where average speeds are not currently below 24mph. If there are numerous streets where mean speeds are only slightly above 24mph, then there would be some confidence that a sign-only 20mph limit would result in greater compliance over time for these particular links.
- 4.1.4 On links that are closer to 30mph in terms of average speed, then additional measures might be considered to reduce vehicle speeds, including traffic calming for instance.

4.2 Existing Speed Limit

- 4.2.1 The existing speed limits in Cuddington, provided as part of the Ordnance Survey MasterMap dataset, are presented below in Figure 4-1.



Figure 4-1: Existing Speed Limits



Credits: Esri UK, Esri, TomTom, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS, Contains OS data © Crown Copyright and database right 2023

- 4.2.2 Figure 3-1 demonstrates that the village is subject to a 30mph speed limit at present. To the south and west of the village, the speed limit increases to 60mph on Dadbrook and Bridgeway. To the east, on Aylesbury Road, the speed limit increases to 50mph to the west of the junction with Spickett's Lane.

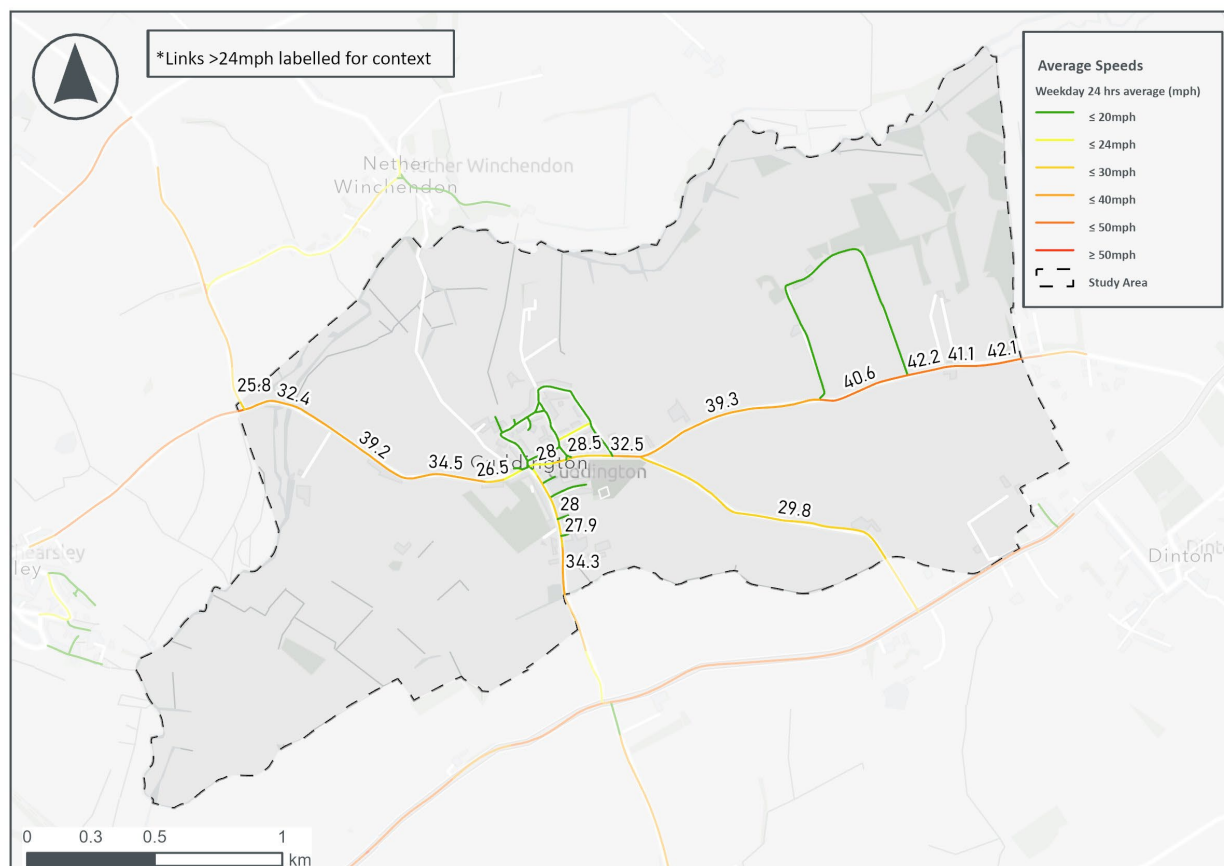
4.3 Average Speed Data

Ordnance Survey MasterMap Data

- 4.3.1 In order to understand the current situation in Cuddington, average speed data was obtained from Ordnance Survey's MasterMap dataset, which uses mobile phone and GPS tracking to provide a much more comprehensive picture, not only on every street in the village but also on multiple sections of longer streets. The weekday daily average speeds (mph) are presented in Figure 3-2.
- 4.3.2 Figure 3-2 demonstrates that there are some streets within the village are subject to average speeds **below the 24mph quoted in DfT Circular 1/13**, as indicated by the **green** and **yellow** links on the plan. These streets are closer to the centre of the village, near the Aylesbury Road /

Dadbrook / Upper Church Street / Bridgeway crossroads and also along the more residential streets in the village such as Lower Church Street and Holly Tree Lane.

Figure 4-2: OS Average Speed Data



- 4.3.3 Cases where speeds exceed 24mph are shown as **orange (24-30mph)** lines, with the average speed labelled next to the link. The plan demonstrates that, for the most part, these links are located on the main roads through the village where speeds vary between 26.5mph and 28.5mph within the existing 30mph extents.
- 4.3.4 Links exceeding 30mph are constrained to the periphery of the village and on the approaches to the village. Along Aylesbury Road, average speeds decrease from 39.3mph in the vicinity of Brookfield Farm, to 32.5mph closer to the existing 30mph gateway. Likewise, along Dadbrook, average speeds are 34.3mph close to the existing 30mph gateway. On Bridgeway, west of the 30mph gateway, average speeds are 34.5mph, increasing to 39.2mph in the vicinity of the residential dwellings near Cuddington Mill Lane.



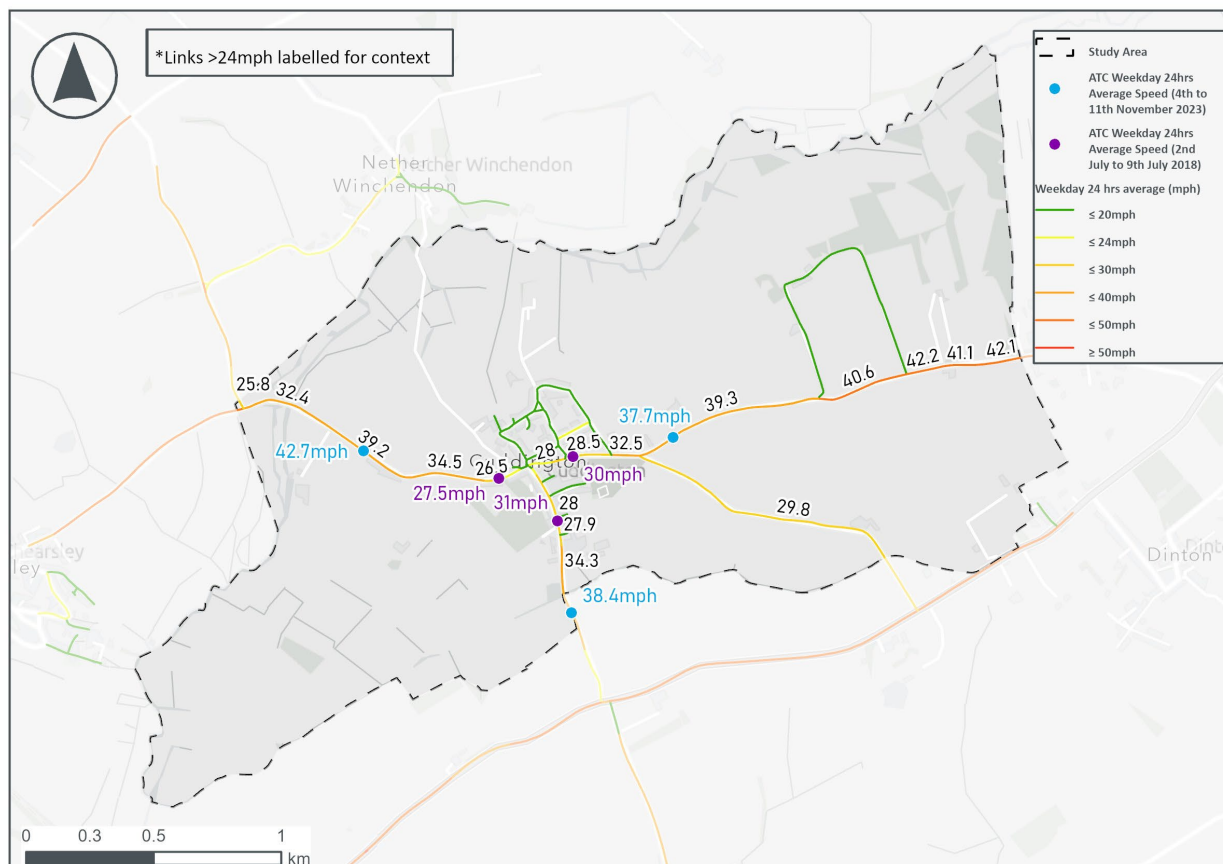
Automatic Traffic Count Data

- 4.3.5 Automatic Traffic County (ATC) data has also been provided by Cuddington Parish Council for Aylesbury Road, Dadbrook and Bridgeway originally collected as part of a Buckinghamshire Council traffic calming study undertaken in 2018.
- 4.3.6 More recently, Buckinghamshire Council has collected ATC data for Bridgeway, Aylesbury Road and Dadbrook on the approaches to the village, as part of an assessment looking into the feasibility of extending the existing 30mph limit.
- 4.3.7 This data provides a useful comparison against the OS MasterMap data. It should be noted that a drawback of ATC surveys is that they record speeds at a specific point in the road, and their placement away from junctions and pinch points mean they often reflect a maximum case rather than one that is representative of overall conditions along a road or section of road.

ATC and OS Average Speed Data Comparison

- 4.3.8 The plan below (Figure 4-3) shows the ATC locations compared against the OS MasterMap average speed data presented in Figure 4-2.

Figure 4-3: Comparison of OS and ATC Average Speed Data



Credits: Esri UK, Esri, TomTom, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS, Contains OS data © Crown

- 4.3.9 Figure 4-3 demonstrates that the Aylesbury Road ATC within the village recorded an average speed of 30mph. The closest OS MasterMap link shows an average speed of 28.5mph, a difference of 1.5mph. Therefore, the ATC data appears to show a slightly higher average speed than the OS MasterMap dataset. Likewise, the average speeds recorded by the ATCs within the village on Dadbrook and Bridgeway are 3mph and 1 mph higher than the corresponding OS MasterMap links respectively.
- 4.3.10 The blue labels on the plan show the average speeds recorded by the 2023 ATCs undertaken by Buckinghamshire Council on the approaches to the village. These ATCs show that average speeds exceed 40mph on Bridgeway and are in the vicinity of 38mph on the Dadbrook and Aylesbury Road approaches.
- 4.3.11 The plan demonstrates that the ATC data, in general, has recorded slightly higher average speeds than the speeds recorded by the OS MasterMap data. Again, while a useful comparison, a key drawback of ATCs is that they record speeds at a specific point in the road, and their placement away from junctions and pinch points mean they often reflect a maximum case rather than one that is representative of overall conditions along a road or section of road.



5 Potential Extents of 20mph Limit

5.1 Overview

- 5.1.1 Given the findings set out in Chapter 3, there is evidence to suggest that introducing a village-wide 20mph limit in Cuddington would be feasible, subject to determining a suitable boundary for the scheme and the implementation of some traffic calming features on links where average speeds are currently higher.
- 5.1.2 The majority of roads within Cuddington have average speeds of less than 24mph and in some cases less than 20mph. These roads are primarily the streets in the north of the village (such as Lower and Upper Church Street, shown below) and short sections of Aylesbury Road, Dadbrook and Bridgeway close to the crossroads in the centre of the village.



Figure 5-1: Upper Church Street (looking north)



5.1.3 DfT Circular 1/2013 recommends that *“the implementation of 20mph limits over a larger number of roads... should be considered where mean speeds at or below 24mph are already achieved over a number of roads”*. Therefore, the links listed areas outlined above would be suitable for a sign-only 20mph limit, with no traffic calming required.

5.1.4 There are however sections of Aylesbury Road, Dadbrook and Bridgeway within the village where average speeds are above 24mph and closer to 30mph. On these links, further consideration of additional measures to reduce speeds are required.

5.2 Potential Edge Cases

5.2.1 There are a few streets within the village where the average traffic speeds exceed 24mph over a significant length. These have been described as “edge cases”:

- Aylesbury Road
- Dadbrook
- Bridgeway

5.2.2 For these streets, it is recommended that a decision is made based on their function, typology, and the degree by which they exceed the 24mph average speed threshold.

Aylesbury Road

5.2.3 While the western-most section of Aylesbury Road has average speeds of less than 24mph, most of the road within the village experiences average speeds between 28-28.5mph. While this road performs a key movement function through the village, it is also residential in character, with many properties fronting the road. Close to the village crossroads, Aylesbury Road also provides access to The Crown public house. There is a footway which runs along the southern side of the road within the village and provides a connection to the playing fields and social club.



Figure 5-2: Aylesbury Road (looking west)

- 5.2.4 Despite having sections that exceed 24mph, the average speeds along Aylesbury Road are generally in the region of 28mph and therefore under the existing 30mph speed limit. Moreover, Aylesbury Road is a key pedestrian route providing access to the amenities in the centre of the village for the residents who live in the east. The western-most sections of the road are already narrow, with no centre line markings, which encourages slower driving, and this is reflected in the average speed data.
- 5.2.5 As noted in Chapter 2, other local authorities such as Surrey County Council are recommending that roads with similar characteristics and existing speeds are included within 20mph limits/zones, albeit with light touch traffic calming measures in place.
- 5.2.6 It is therefore recommended that Aylesbury Road is included within the 20mph zone with light touch traffic calming interventions included. Post-implementation monitoring can be undertaken to determine if compliance improves by the introduction of these light touch measures, or if other interventions could be developed to contribute.

Dadbrook

- 5.2.7 Dadbrook is the main vehicular route into Cuddington from the Aylesbury Road to the south, and it also provides access to a number of dwellings as well as the burial ground. There are footways on either side of the road which are used by residents accessing the facilities in the north of the village. Therefore, overall, it is considered to be residential in its character. The layout of Dadbrook lends itself to higher speeds at present, due to its width and centre line markings giving it a more “urban” feel compared to other streets in the village.



Figure 5-3: Dadbrook (looking north)

- 5.2.8 Generally, average speeds along Dadbrook road are in the region of 28mph, and less than 24mph close to the crossroads junction with Aylesbury Road. Further south, outside of the built-up extents of the village, where Dadbrook is more rural in character and there are no footways, average speeds rise to 34.3mph.



- 5.2.9 There is an allocated site in the Vale of Aylesbury Local Plan (ref: D-CDN003), which earmarks a site to the east of Dadbrook for the provision of 15 dwellings. This site would be accessed via the existing farm entrance on Dadbrook (Figure 5-4). This represents a funding opportunity for traffic calming measures to be implemented along Dadbrook and funded by the proposed development in order to mitigate any transport impacts of the development of the site.



Figure 5-4: Dadbrook Farm Site Allocation (Source: Vale of Aylesbury Local Plan)

- 5.2.10 In light of the above, the recommendation is to include Dadbrook within the 20mph zone, with traffic calming measures in place to reduce speeds, particularly on the approach to the village.

Bridgeway

- 5.2.11 Bridgeway is the main vehicular route into the village from the west. Although Bridgeway serves fewer dwellings than Aylesbury Road or Dadbrook, it feels residential in character due to the proximity of dwellings to the carriageway and the presence of on-street parking outside dwellings. Average speeds along this link are lower than Dadbrook or Aylesbury Road and in the region of 26-27mph.

5.2.12 Therefore, the recommendation for Bridgeway is to include within the 20mph zone and include some light touch interventions in order to calm traffic.



Figure 5-5: Bridgeway (looking east)

Aylesbury Road / Dadbrook / Bridgeway Crossroads

5.2.13 The Aylesbury Road / Dadbrook / Bridgeway Crossroads are a key focal point of the village and is where the three main roads into the village meet. The crossroads are also located along a number of key pedestrian desire lines, particularly from the south of the village towards The Crown public house and the amenities located along Upper Church Street, including the school. At present, there is no crossing provision on Bridgeway or Aylesbury Road, and visibility to oncoming traffic from the east of the village is poor due to the proximity of dwellings to the carriageway.



Figure 5-6: Aylesbury Road / Dadbrook / Bridgeway Crossroads (looking south, towards Dadbrook)

- 5.2.14 It is therefore recommended that this junction is improved as part of a traffic calming scheme in the village, particularly focused on providing a safe crossing between Dadbrook and Upper Church Street. Providing a new crossing in this location will have the knock-on benefit of reducing traffic speeds along Aylesbury Road and Bridgeway and will also provide a safer route to school.



6 Traffic Calming

6.1 Background

6.1.1 It is recommended that any implementation of a 20mph zone should be done in conjunction with and/or following the provision of traffic calming measures within the village of Cuddington.

6.1.2 Here, traffic calming is a term used to describe a range of measures for slowing down traffic.

6.1.3 Statutory Guidance document 'Traffic Management Act 2004: network management to support active travel' (updated 1 April 2022) sets out the following:

*"20mph speed limits are being more widely adopted as an appropriate speed limit for residential roads and many through streets in built up areas. 20mph limits alone will not be sufficient to meet the needs of active travel, but **in association with other measures reducing the speed limit can provide a more attractive and safer environment for walking and cycling.**"*

6.2 Traffic Calming Methods

6.2.1 Traffic calming measures can range in size and format, from speed bumps to gateway signs, to special road signs/artwork, to speed cameras (where the impact is felt over a longer distance).

Traffic Calming in Buckinghamshire

6.2.2 Transport for Buckinghamshire's 'Traffic Calming in Buckinghamshire' (2020) provides a guide for Parish and Town Councils to find a traffic calming solution to transport problems.

6.2.3 Buckinghamshire Council has a number of key principles for local community funded schemes:

- Ensure that the majority of drivers, local residents, and other users support the proposals.
- Ensure that public participation in education campaigns run by the Council is encouraged before, during and after the introduction of physical traffic calming measures.
- Ensure that the schemes do not detract from the Council's transport policies and strategies. They should add value and help tackle congestion, improve safety, enhance access, and improve the environment.
- Consider the user of vertical features for casualty reduction purposes only or as a last resort when other initiatives have failed.
- Provide technical support and guidance to parishes and community groups, at a cost, in response for a request for traffic calming measures, and ensure that agreed proposals meet all current government guidelines.
- Review schemes to ensure they work, and learn from previous experience.



- 6.2.4 The guidance document sets out the processes by which traffic calming measures can be introduced including how to demonstrate the problem, the consultation process and different methods of funding/partnership.
- 6.2.5 The guidance document then sets out the various traffic calming and road safety features which could be implemented, a pro/con summary for each and indicative costings. The list of measures includes those set out within the table below.

Table 6-1: Traffic Calming Measures included in 'Traffic Calming in Buckinghamshire'

Group	Measure
Traffic signs	Road traffic signs
	Variable message signs
Road markings	Speed roundels
	Dragon's teeth
	Rumble strips
	Bar markings
	Road marking removal
Junction changes	Mini roundabouts
Road surfacing	Coloured road surfacing
	Textured road surfacing
Gateways	Gateways
Horizontal measures	Road narrowing (visual/physical)
	Chicanes and priority systems
	Central traffic islands
Vertical measures	Speed humps
	Raised tables
	Speed cushions
Parking management	Parking management
Movement traffic restrictions	One-way streets
	Weight watch
	Width restrictions
Controlled crossings	Zebra
	Parallel
	Signalised
Bollards	Bollards

- 6.2.6 The pros/cons of each measure include factors such as cost, being visually intrusive, impact on visibility, requires lighting, improves safety, expensive to maintain, creates noise or vibration, too urban, lack of enforcement, increasing travel time etc.
- 6.2.7 In addition to the above, the guidance document refers to the importance of 'public realm and environmental improvement schemes' as a way of moving away from standard 20mph zones with



bolt on solutions of traffic calming (e.g. speed cushions) and towards more attractive solutions which achieve the same aims but also have wider benefits of placemaking. Some examples include:

- Narrowing carriageway and widening footways through creation of shared spaces, kerb buildouts etc.
- Providing seating and planting within the public highway to change the character of a road in order to tackle perceived speed concerns.
- Different surface materials on the carriageway and footways to help encourage lower speeds.
- Incorporating footway crossings and raised tables into designs (giving perceived priority over car users)
- The use of Sustainable Urban Drainage into traffic calming schemes (e.g. pocket gardens).

Traffic in Villages

- 6.2.8 'Traffic in Villages' – a toolkit developed by Hamilton-Baillie Associates for Dorset County Council sets out research that suggests that the more time people spend engaging their brain with interpreting the immediate environment, the slower they travel. The toolkit also highlights the importance of identifying a place as a rural village for reducing speeds and increasing driver awareness.
- 6.2.9 The core principle of the toolkit is that traffic calming measures should build on the principles of 'place-making', to make villages more distinctive and recognisable, without adding roadside clutter and creating an urban feel. This concept is particularly applicable to Cuddington, which is a small village, rural in character, and with no street lighting.
- 6.2.10 Some examples of traffic calming measures that are suitable for village such as Cuddington and their benefits are outlined below:



Figure 6-1: Tighter Entry Widths



6.2.11 The image above demonstrates a visual narrowing to a cross-roads junction through the use of blockwork paving/cobbles. This design visually indicates to drivers to slow down on approach to the junction, whilst also letting larger vehicles including buses turn corners without overrunning into areas of vegetation.

Figure 6-2: Raised table crossing points



- 6.2.12 Providing a zebra crossing on a raised table has two fold benefits. For pedestrians, providing a raised table provides a level route, without the need for dropped kerbs. For drivers, the raised table acts as a speed deterrent.

Figure 6-3: Build outs/Gateway Points (Buriton)



- 6.2.13 As per Traffic in Villages, having defined entry points to a village is key for indicating to drivers that they are entering a village environment and should adjust their speed accordingly. The example shown is for a 30mph zone, but the same principle applies. Vehicles are required to engage in an informal or formal (if signs are present) give-way arrangement which acts as a deterrent to travelling at higher speeds.



Figure 6-4: Removal of white lines/surface treatment



- 6.2.14 The image above demonstrates a section of street which has had surface treatment and the removal of the white centre line from the carriageway. The presence of a white line on the carriageway could be a factor in encouraging higher speeds as drivers are less likely to anticipate an oncoming obstacle which might require them to travel slower. Therefore, removing the centre line means that drivers will naturally reduce speeds and drive more carefully, negotiating the space with other users.
- 6.2.15 Various studies have been undertaken that demonstrate the effectiveness of centre-line removal on reducing vehicle speeds and also demonstrate that they improve road safety. TfL undertook a centre line removal trial in 2014. This study found that there was a “a statistically significant reduction in vehicle speeds as a result of removing central markings on the carriageway”.⁷ The TfL report also references a 2003 study by Wiltshire County Council which found that not reinstating centre lines when resurfacing roads led to a reduction in injury collisions and traffic speeds.

⁷ [Centreline removal trial \(report\) - Road Safety Knowledge Centre](#)
[TfL Centre Line Removal Report.pdf \(adobe.com\)](#)



- 6.2.16 A number of traffic calming measures could be suitable in Cuddington to reduce speeds. The types of their measures and their potential location are:

Bridgeway / Aylesbury Road

- Light touch traffic calming measures, including removal of centre lines, visual narrowing of the carriageway and 20mph roundels provided at frequent intervals through the village.

Dadbrook

- Light touch traffic calming measures, including removal of centre lines, visual narrowing of the carriageway and 20mph roundels provided at frequent intervals through the village.
- Additional measures to further reduce speeds, including speed activated warning signs.
- Consideration of physical traffic calming measures, including chicanes and/or physical build outs (subject to further discussions on lighting). This could be implemented as part of a new pedestrian crossing on Dadbrook near the junction with Bernard Close to improve route to playing fields and could be funded through the development of the Dadbrook Farm residential site allocation.

Bridgeway /Aylesbury Road/Dadbrook/Upper Church Street crossroads:

- Tighten entry widths (subject to bus/HGV tracking with a design speed of 20mph – could have cobbled/block paving ‘runover space’) or potential to change into mini roundabout arrangement
- Provide raised table crossing points on Dadbrook and Aylesbury Road (e.g. a formal or informal zebra)

- 6.2.17 In addition, it is recommended that the village provides clearer ‘gateway’ entry points at Bridgeway and Dadbrook. The gateway points could include a physical build out with a “Welcome to Cuddington” gateway feature, similar to the Buriton example highlighted in this chapter.

6.3 Traffic Calming Case Study – Pembridge, Herefordshire

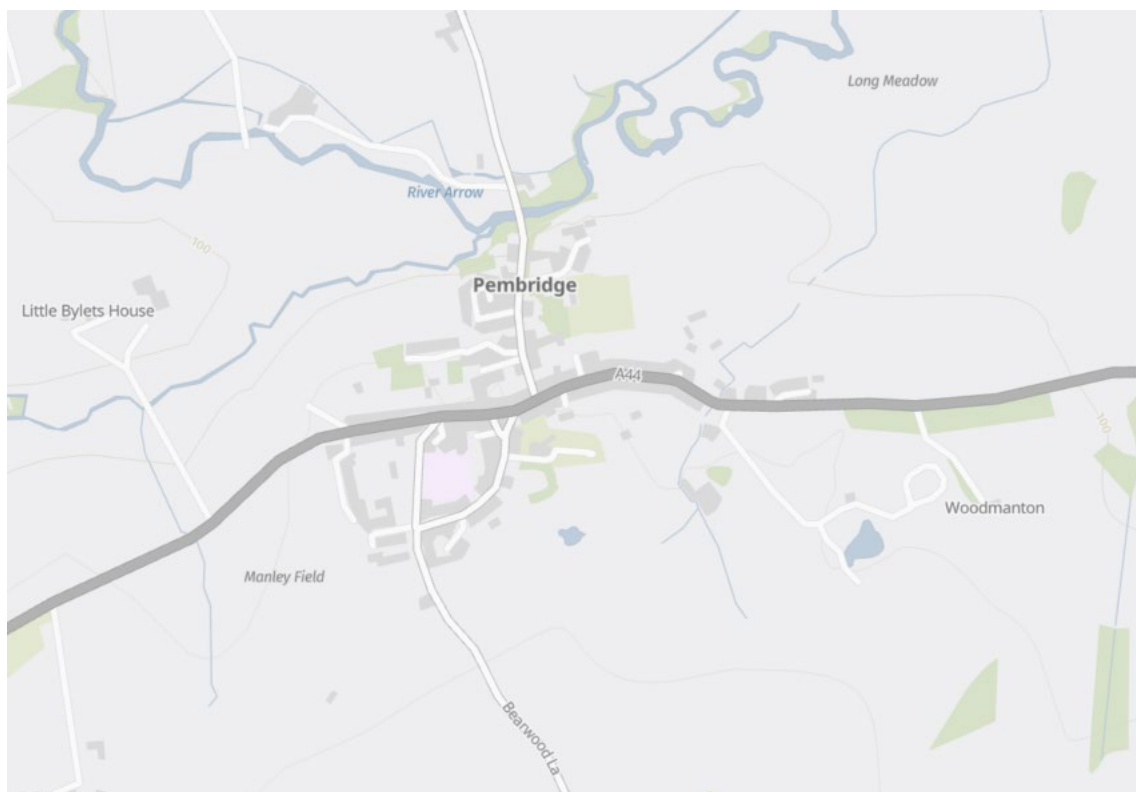
- 6.3.1 To demonstrate the effectiveness including even light-touch traffic calming within a 20mph scheme, the village of Pembridge has been used as a case study.

Background

- 6.3.2 The village of Pembridge in Herefordshire is located on the A44 between Leominster and Rhayader (Wales).
- 6.3.3 Approximately 3,000 vehicles per day use the A44, including a high percentage of HGVs and agricultural traffic. It therefore experiences a similar level of vehicular traffic to Cuddington.



Figure 6-5: Village of Pembridge on the A44



6.3.4 The following Traffic Regulation Order was made in October 2021: *“That in the village of Pembridge the existing 30mph Speed Limit Order be revoked in full and for the same extent of that 30mph speed limit no person shall drive a motor vehicle at a speed exceeding 20mph.”*

Results

Table 6-2: Pembridge 20mph Monitoring Results

Site Location	Direction	85 th % Before (30mph)	85 th % 6 Months After (20mph)
A44 West Street	Eastbound (In)	31.2	28.4
	Westbound (Out)	31.3	28.7
A44 East Street	Eastbound (Out)	33.4	31.4
	Westbound (In)	33.5	28.4
Bridge Street	Northbound (Out)	33.3	28.4
	Southbound (In)	33.4	28.6
Bearwood Lane	Eastbound (In)	23.6	23.4
	Westbound (Out)	23.4	23.7

6.3.5 The results demonstrate that almost all links experienced a speed reduction (85% percentile) of a few mph six months after the implementation of a 20mph limit. The exception is on Bearwood Lane which already had speed limits close to 20mph.

- 6.3.6 The 85% percentile speed is the metric most commonly used as it removes both slow and fast outliers from the dataset. In this case, the mean speed on all links is lower than the 85% percentile speed.
- 6.3.7 None of the speed limit reductions reduced the 85% percentile speed as low as 20mph, but there was a substantial reduction in speed on many links, particularly links with a higher average speed before the scheme was implemented.

Associated Light Touch Traffic Calming Measures

- 6.3.8 Some light touch traffic calming measures were introduced alongside the 20mph zone. This included upgraded entry points with surface treatment, plus further surface treatment within the village heart in the form of 20mph markings on the carriageway and visual narrowing of the carriageway through white line markings.

Figure 6-6: Entry point to Pembridge on the A44 (After 20mph and before 20mph)



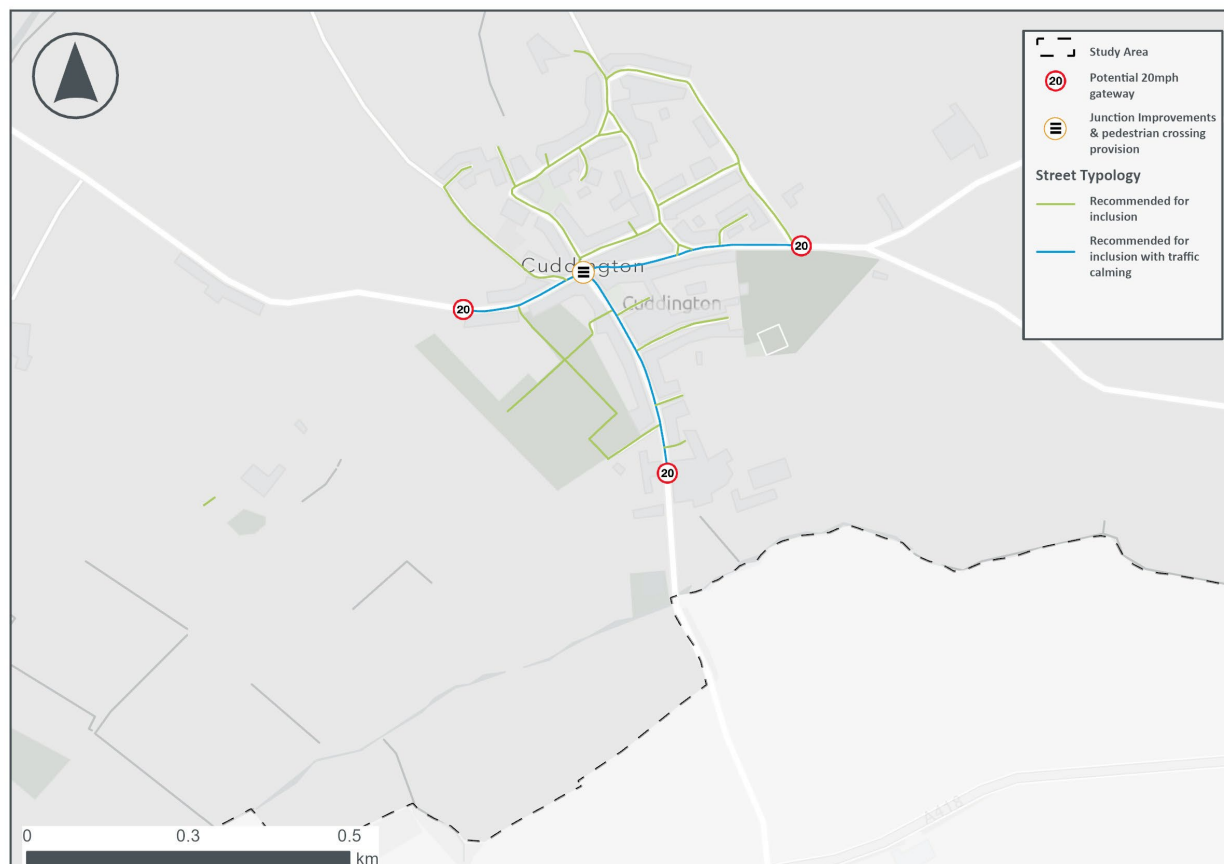


7 Conclusions and next steps

7.1 Recommendations

- 7.1.1 Based on the findings of this report, it is recommended that Cuddington would be suitable for a village-wide 20mph speed zone, with complementary traffic calming measures to help further reduce vehicle speeds. A village-wide approach would ensure that the application of the 20mph speed limit is consistent and comprehensible for road users. Moreover, as Haddenham Parish Council are also pursuing a village-wide 20mph, the implementation of a similar scheme in Cuddington would create a coherent area-wide approach for drivers locally.
- 7.1.2 A plan has been prepared which identifies the recommended gateway locations, and classifies streets into the following typologies:
- Streets considered suitable for a 20mph – “Recommended for Inclusion”
 - Edge cases where speeds or conditions may not be appropriate if the street were being considered for a sign-only limit, but would be suitable with some accompanying traffic calming features are shown as “Recommended for Inclusion with Traffic Calming”
- 7.1.3 Figure 7.1 below also shows the proposed gateway location. The 20mph gateway locations are situated in the location of the existing 30mph gateways.
- 7.1.4 There is also the potential to provide a 30mph “buffer” around the edge of the village to encourage drivers to slow down earlier on the approach into the village and increase compliance with the new speed limit. However, it is noted that Buckinghamshire Council has recently refused a Parish Council application to extend the 30mph limit from its existing location. Therefore, the recommendation for a 30mph buffer has been omitted at this stage, however, shouldn’t be discounted as a potential option in the future should discussions reopen with Buckinghamshire Council.

Figure 7-1: PJA Recommendations



Credits: Esri Community Maps Contributors, Esri UK, Esri, TomTom, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA,

Aylesbury Road

7.1.5 For Aylesbury Road, it is recommended that the following “light touch” improvements are implemented to reduce vehicle speeds through the village:

- Removal of traditional centre line markings
- Visual carriageway narrowing, with either contrasting surfacing or white line markings on the edge of the carriageway
- 20mph roundels at frequent locations through the village

Bridgeway

7.1.6 For Bridgeway, it is recommended that the following improvements are implemented to reduce vehicle speeds through the village:

- Removal of traditional centre line markings
- Visual carriageway narrowing, with either contrasting surfacing or white line markings on the edge of the carriageway



- 20mph roundels at frequent locations through the village
- Provide a clearer gateway point on the entry to the village from the west. This could include a physical build out with a “Welcome to Cuddington” gateway feature.

Dadbrook

7.1.7 For Dadbrook, the following improvements are recommended to reduce vehicle speeds:

- Removal of traditional centre line markings
- Visual carriageway narrowing, with either contrasting surfacing or white line markings on the edge of the carriageway
- 20mph roundels at frequent locations through the village
- Provide a clearer gateway point on the entry to the village from the south. This could include a physical build out with a "Welcome to Cuddington" gateway feature
- Given that speeds are higher on Dadbrook than the other roads through the village, additional light touch interventions such as speed activated warning signs could be investigated
- Investigate provision of traffic calming along Dadbrook in the form of physical build outs, potentially incorporating a new crossing near the junction with Bernard Close to provide safer route to the playing fields. This would be subject to lighting requirements.

Aylesbury Road / Dadbrook / Bridgeway Crossroads

7.1.8 The following improvements are recommended at the village crossroads. Although the primary focus of these improvements is to improve road safety, there will also be knock-on benefits such as reducing the speed of traffic through the junction.

- Tighten entry widths (subject to bus/HGV tracking with a design speed of 20mph - could have cobbled/block paving 'runover space') or potential to change into mini roundabout arrangement;
- Incorporate raised table crossing points on Dadbrook and Aylesbury Road as part of the junction improvements (e.g. a formal or informal zebra)

7.2 Final Recommendations

7.2.1 It is recommended that Cuddington Parish Council first engage with Buckinghamshire County Council officers to gauge the principle of implementing the village wide 20mph Zone and the traffic calming recommendations included within this report.

7.2.2 It is recommended that the traffic calming interventions are implemented alongside a speed limit reduction, however an alternative approach would be to implement the traffic calming in advance,



with a focus on improving road safety, and then pursue a speed limit reduction in the future, once it can be demonstrated that the improvements have reduced vehicle speeds.

- 7.2.3 If a 20mph zone is agreed, a site survey would be required to identify exact locations for terminal and repeater signs to enable installation details to be developed and quantified for costing. Traffic Regulation Order (TRO) plans will also be required to commence the formal TRO advertising process.
- 7.2.4 Engagement with Buckinghamshire Council and Transport for Bucks is now recommended as the next step to progress the scheme further.