

The Effectiveness of Medway's 20mph Schemes

1 Introduction

1.1 This report summarises the impact of 20 mph schemes that have been introduced in Medway over the past twenty or so years, establishing a baseline for those schemes to assess effectiveness. Each scheme's impact on road user speeds and reported road casualties has been reviewed (where possible). The summary findings are reported here. This report has been produced at the request of the Regeneration, Culture, Environment and Transformation Overview and Scrutiny Committee.

1.2 At the time of writing, ten 20 mph schemes have been introduced ranging from stretches of roads of no more than few hundred metres to whole areas of Medway. The selected schemes, the type of 20mph scheme (zone or limit), and the primary reasons for their introduction are given in the table below:

No:	Location	Scheme Type	Rationale
1	White Road Estate, Chatham	20mph Zone	Road safety/casualty reduction scheme
2	King Street, Rochester	20mph Zone	Safer Routes to School scheme
3	Christmas Street, Gillingham	20mph Zone	Road improvement scheme related to development
4	Higham Lane, Wainscott	20mph Zone	Road improvement scheme related to development
5	Lower Rainham Rd, Gillingham	20mph Zone	Environmental improvement through traffic calming.
6	Meresborough Rd, Rainham	20mph Zone	Environmental improvement through traffic calming.
7	Grange Rd (east of Plantation Road), Gillingham	20mph Zone	Part of a residential development.
8	Doust Way, Rochester	20mph Zone	Part of Rochester Riverside development.
9	Sir Evelyn Road, Rochester	20mph Zone	Residential area offered for Highway Adoption
10	Diana Road, Chatham (Former All Saints Hospital).	20mph Speed Limit	Part of a residential development.

Table 1 – Medway 20mph schemes

1.3 A comprehensive table is provided in Appendix 1 with information covering traffic speeds, and collision data for before and after the introduction of each scheme, where available. There are cases where pre-scheme data may not be available. Typically, this is due to the scheme involving new highway creation where there was previously none, such as a new residential development. There may also be no pre-scheme data available where the road/area was previously in private ownership.

2 Background to Medway's 20 mph Schemes

- 2.1 There are two main types of 20mph speed scheme. Those being, 1) a 20mph Zone - which include '20 Zone' signs at the entry points and physical traffic calming measures thereafter, and 2) 20mph speed limits -which are signed only. The latter is not prohibited from containing calming measures, however typically the speed limit is applied like any other. Whereby signs indicate the start of the 20mph speed limit and then users are reminded of the limit by small '20' repeater signs only.
- 2.2 All but one of Medway's 20mph schemes are 20mph Zones. In addition to these, it is noted that Chatham's Bus Station includes a 20mph signed only speed limit. This is however within a transport hub where general motorised traffic is restricted. Operation of the bus station is also supported by a code of conduct. This speed limit scheme is therefore excluded from the monitoring covered within this document.
- 2.3 Of the ten schemes considered only two sites were purpose designed for 20 mph zoning covering a collection of roads. These are White Road Estate, and part of Grange Road, Gillingham. At the time of writing Doust Way scheme is still incomplete as it is the access road into the ongoing major Rochester Riverside development. The only signed only 20mph speed limit is within the residential development at the former All Saints Hospital site at Diana Road, Chatham. This speed limit covers a collection of roads. This development is essentially a large cul-de-sac whereby the road/development layout and character support a low speed environment without the presence of overt traffic calming features.
- 2.4 The other 20 mph schemes are all 20mph Zones and are sections of roads or routes. Of these, Higham Lane, Lower Rainham Road and Meresborough Road 20 mph zones are parts of longer routes and carry a significant proportion of through traffic.

3 Main Findings - Before and After Implementation

- 3.1 As can be seen from the table within Appendix 1, all of schemes, apart from Lower Rainham Road, are all operating at speeds consistent with 20mph principles – up to 24mph. For the location surveyed at Lower Rainham Road, this indicates a slightly higher speed of 26.5mph. It is however noted that this scheme also recorded a significant overall reduction in speeds, down from 37mph recorded before the scheme was introduced. It is also noted that this is the speed recorded at a specific point and does not represent average speeds through the entire zone.
- 3.2 All of the schemes have recorded a reduction in speeds or seen speeds maintained low and at levels which are acceptably in accordance with 20mph operation. For two of the locations reviewed namely, Sir Evelyn Road and Diana Road (and associated roads), no

automatic traffic survey data was available. Speed assessment has been by observation only for those locations.

- 3.4 The White Road Estate scheme has seen significant reduction in personal injury collisions, with a reduction from 16 injury collisions to 4 over a comparable three year period. This is clear demonstration of the link between speed reduction and reduced collision frequency. It is evident that the aim of the scheme was casualty reduction, with the area in question being identified as recording a high number of road casualties. The scheme has therefore been successful in this aim.
- 3.5 Lower Rainham Road, Higham Lane, and Meresborough Road are a group of roads which carry a significant proportion of through traffic. Generally, speeds have been reduced as a result of implementing 20mph zone schemes. Whilst Higham Road has maintained a zero collision record, both Meresborough Road and Lower Rainham Road have experienced increases in collision numbers when comparing the three year period prior to implementation and the most up to date three year safety records. In the case of Lower Rainham Road, there has been an increase from 2 to 3, which is not considered statistically significant.
- 3.6 The three collisions at Meresborough Road took place at different locations and were of varying collision types. One involved a vehicle trying to pass another by driving up a verge, the second involved a driver swerving to avoid an animal, and the third involved a lone cyclist. In addition, all three collisions were reported as happening in 2017. No collisions have been recorded in each of the following two years 2018 and 2019. The record is not therefore considered indicative of an increasing trend.
- 3.7 White Road Estate, King Street, Christmas Street, and Grange Road, all experienced low or no collision numbers prior to implementation and this has either been maintained or the collision numbers are negligible. The long-term aim would be for these schemes to continue to maintain nil or very low collision figures.
- 3.8 The remaining schemes of Doust Way, Sir Evelyn Road, and Diana Road involved either new highway construction or highway adoption meaning no pre-scheme data is available. Post implementation review similarly indicates low speeds and good safety records at these locations.

4 Outcomes

- 4.1 This review of Medway's 20mph schemes indicates that low 20mph speeds have generally been achieved where they have been applied. The road speeds prior to implementation dictate the level of speed reduction that will be achieved. It should be noted that almost all of Medway's current 20mph schemes are 20mph 'Zones' and as

such they include physical engineering measures or layouts designed to engender operation at or around 20mph.

- 4.2 Where the aim is to reduce road casualties this has been achieved. It is also considered likely that the presence of the 20mph zone is a factor in maintaining very low collision numbers, particularly where vulnerable road users and motorised traffic mix, such as within residential areas.
- 4.3 Routes where there are high volumes of through traffic have recorded some collision occurrence. Continued monitoring of these locations would allow consideration of the trends on the longer term. It is clear that lower speeds have been achieved on those routes, which is likely to have been a driving factor of the individual proposals.
- 4.4 This monitoring exercise indicates that the use of 20mph schemes to date with engineered road layouts (particularly within 20mph Zones) has resulted in lower general operating speeds and can be effective at reducing road casualty problems.
- 4.5 This study has not considered other potential benefits or outputs of 20mph schemes which may be; improved environmental conditions such as lower traffic noise and improved air quality (it is noted that air quality is a complex issue), nor any potential travel choice (walking and cycling) or longer term health implications (there is now national research which provides further commentary on these matters).

Appendix 1

Summary of Medway 20 mph Schemes

	Location / Area	Purpose of scheme	Description of 20mph area/zone	20mph Scheme Type	Traffic Speeds		Crash Record		Summary Outcome
					Before – Traffic data	After – Traffic data	Number of crashes in 3 years Before Install	Number of crashes - Most recent 3 years	
1	White Road Estate, Chatham	This was a primarily casualty reduction led scheme intended to reduce the likelihood of further personal injury collisions. A significant number of the casualties in the area were children. The scheme also supported the Safer Routes to School approach, encouraging users to walk and cycle for the school journey.	Very Large area with cushions, raised tables	20 mph Zone	Not Available	21mph - Palmerston Road (within the 20mph area)	16	4	There is limited pre traffic information available. Post implementation survey data from within the zone indicates suitably low operating speeds. The original purpose of the scheme was to reduce road casualties. The current crash record indicates a reduction from 16 to 4. The scheme has been successful in this aim.
2	King Street, Rochester	This was a Safer Routes to School scheme aimed at increasing accessibility and modal shift by facilitating a safer route to the school.	From Maidstone Rd eastwards towards John Street and Delce Road.	20mph Zone	23mph survey 2009	15mph	0	0	The introduction of 20mph zone has further reduced traffic speeds at this location. The casualty record has remained low.
3	Christmas Street, Gillingham	A Section 106 contribution was received by the Council to make improvements at Christmas Street. The contribution resulted from the extension of Christmas Street with additional residential properties with inherent low speed design. An appropriate way deliver the improvements was to introduce a 20mph zone to the pre-existing section of Christmas Street.	Mainly a residential road (Cul-de-sac) with a raised table at entry and low speed layout.	20 mph zone	20mph survey 2013	19mph	1	0	The design of Christmas Street as essentially an isolated development, without any through traffic and provided with short narrow roads unsuitable for speeding. Therefore, traffic speeds before and after the introduction of 20mph zone remain largely the same. The very low crash record has been reduced but this is not statistically significant.

4	Higham Road, Wainscott	A Section 106 contribution was received by the Council to introduce traffic calming on nearby roads. A way delivering these improvements was to introduce a 20mph zone at this location.	Raised tables throughout residential section of Higham Road.	20 mph zone	33mph survey 2009	24mph partial		0	0	Higham Road is a local distributor carrying through traffic which links Cliffe and Cliffe Woods and points west to Strood. The introduction of 20mph zone has notably reduced traffic speed. The collision record pre and post has remained low. The physical calming measures associated with the zone may have reduced the risk of collision occurrence.
5	Lower Rainham Rd, Rainham	Environmental improvement scheme to help address the use of this route rather than the main east-west route at this point. Traffic calming was introduced to work with the existing priority working on this road. A 20mph zone was an appropriate way to deliver the traffic calming measures.	20mph zone stretches from a few hundred yds east of Station Rd to a few hundred yds east of Lower Bloors Lane.	20 mph zone	37mph survey 2004	26.5mph survey		2	3	Lower Rainham Road was made a 20mph zone to reduce the traffic speed in that part of the road. Whilst it seemed to have achieved in part to reduce the speed on this important through route the collision record has slightly worsened. Though this is not considered statistically significant.
6	Meresborough Road, Rainham	Environmental improvement to help address the use of this route rather than the main alternative north-south route. Vertical traffic calming was introduced, a 20mph zone was an appropriate way to deliver the traffic calming measures.	20mph Zone is north of Service station road to Meresborough Lane.	20 mph zone	19 mph survey 2014	21 mph		0	3	Meresborough Road is a mainly rural lane with a short section of dwellings and school. The route is a narrow country lane with many bends and narrowings. Both the pre and post speeds are very close to 20mph which indicate that low speeds were present in places on this route. The physical traffic calming should result in low (20mph) speeds throughout the route. Three injury collisions have been recorded in the most recent three year period. The collisions occurred in 2017, with no further collisions recorded in 2018 or 2019.

7	Grange Road (east of Plantation Road), Gillingham	This 20mph zone and associated traffic calming was constructed as part of the residential development at this part of Grange Road.	East of Plantation Road	20 mph zone	N/A	24 mph		0	1	The Grange Rd 20mph zone is another scheme assigned to an isolated development, similar to Christmas Street 20mph zone. The recorded post speed is in line with 20mph operation. The low accident record is not considered significant.
8	Doust Way, Rochester	This is associated with the development of Rochester Riverside.	Raised tables , but at present it is a cul-de-sac, no through traffic.	20mph Zone only partially complete	N/A	15 mph		0	0	Doust Way is the eastern approach road to the Rochester Riverside development and significant levels of traffic are expected to use it. At present Doust Way is a short cul-de-sac and unsurprisingly traffic do not achieve any significant speed.
9	Sir Evelyn Road, Rochester	This 20mph zone and associated traffic calming was constructed as part a residential area expansion and subsequent offering of the road for Highway Adoption.	Raised tables throughout road.	20mph zone	N/A	No data available. Observations indicate low speeds.		N/A	0	The Sir Evelyn Road scheme whilst an available through route use is limited as there are alternative route choices. The road layout and formal traffic calming features result in low operating speeds.
10	Diana Road, (Former All Saints Hospital), including; Christopher Road, Ruth Street, Steven Close, Melbourne Road, Hannah Court, Mary Street and Mark Street	20 mph speed limit included as part of the residential development at this location.	Signed only speed limit covering the residential roads accessed via Diana Road.	20mpg Speed Limit.	N/A	No data available. Observations indicate low speeds.		N/A	0	The collection of roads served via Diana Road are essentially a large cul-de-sac with no through traffic. The 'access only' nature along with; residential character, road layout and on street parking all contribute to low speed by design environment.