



20mph speed limits – Three-year Monitoring Report

**Sustainability and Transport
Overview & Scrutiny Committee
February 2022**

1. Introduction

This report summarises findings from monitoring of 20mph speed limits in Birmingham, to evaluate the impact of the programme in the period three years after its installation. It examines data on changes in traffic speeds and road casualties, comparing this to before and after scheme implementation.

This report can be read in conjunction with the previous interim report submitted to the Sustainability and Transport Overview and Scrutiny Committee on 8th November 2018: **20mph speed limits – Year 1 Interim Monitoring Report**. The report includes the various campaigns in more detail which accompanied the installation of the pilot areas as well as the interim data that was gathered at the time.

2. Background and Context

In 2012, Birmingham City Council (the Council) approved the development of a policy for the implementation of 20mph speed limits and following consultation it was agreed that there should be a phased approach to the delivery of this across the city, starting with a pilot scheme announced in 2014.



In 2016, the Council introduced its first 20mph speed limits in three pilot areas, implemented on a 'signs and lines' only basis, with no physical traffic calming measures. This was funded through the Cycle City Ambition Fund (Birmingham Cycle Revolution) programme. The areas selected were chosen in part based on the number and severity of road traffic collisions (RTCs) in those areas, particularly those involving child pedestrians. The areas selected were:

- **Area A1:** City Centre, comprising the whole city centre area inside the ring road (A4540 Middleway)
- **Area A2:** Central East, including Washwood Heath, Bordesley Green & Small Heath
- **Area A3:** Central South, including Balsall Heath, Sparkbrook, Moseley & Kings Heath
- **Area B2:** Central South-West, including Edgbaston, Harborne & Selly Oak (this area is not included in this update as it has only been in operation since November 2018)

The Council's policy proposed that all residential roads should be 20mph, as well as those with a designated local centre 'place' function or significant local trip attractors. Roads which form part of the city's main distributor highway network and/or accommodate bus routes (mostly classified A and B roads) would remain at their current speed limit, unless local circumstances justified a reduction.

Lowering the speed limit should not be seen as an end in itself, but as part of a continuous process to bring about a change in driver behaviour and attitudes, with the ultimate aim of establishing 20mph as the default maximum speed appropriate for residential areas. The International Transport Forum found in its Road Safety Report (2020), that while fatalities had decreased for most road users in the United Kingdom, it was increasing for pedestrians¹. With this in mind, the rationale for implementing a 20mph limit is the benefits of what it can bring for urban areas. Aside from improving conditions for pedestrians, lowering the speed limit to 20mph will:

- **Reduce the likelihood that a collision will occur.** A lower speed has been found to increase awareness of potential risks / hazards, thus decreasing the likelihood of a collision occurring².
- **Reduce the severity of any injuries sustained from a collision.** Research shows that the risk of a fatality is 1.5% at 20 mph versus 8% at 30 mph³. Though fatalities have been declining since 2000, this has levelled out from around 2010.
- **Decrease the financial impact of collisions to the economy.** In 2019, the cost to the economy of all road traffic collisions in Birmingham is estimated to be £197m (costs of damage, medical treatment, loss of earnings, etc).
- Reduce the impact of private cars in residential areas, such as rat running, congestion and air quality.
- **Encourage a switch to active travel modes** such as walking and cycling as the perception of safety improves.
- **Have environmental improvements**, including improved air quality and noise pollution. Research has shown that when vehicle speeds are reduced, there is a corresponding reduction in noise levels⁴.

Though it has not been possible to collect all the data to test against the above benefits, this report will focus on the following outcomes in order to ascertain the effects of the trial, specifically if there has been a reduction in speeds, road traffic collisions and casualty numbers.

The following sections set out what other measures were included as part of the scheme, the outcomes of the scheme itself and the recommendations for moving forward.

3. Launch of the trial

20mph area installation

The Council decided in its trial to introduce the new speed limit through signage (20mph limit area) and not use enforcement measures such as road humps (used in 20mph zones). The 20mph limit was, and continues to be, enforceable in the same way as any other speed limit

¹ <https://www.itf-oecd.org/road-safety-annual-report-2021-impact-covid-19>

² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/757307/20mph-headline-report.pdf

³ <https://www.rospa.com/rospaweb/docs/advice-services/road-safety/drivers/20-mph-zone-factsheet.pdf>

⁴ https://www.researchgate.net/publication/37650012_Noise_Reduction_by_Urban_Traffic_Management

and the Council has had the full support of West Midlands Police in doing this within the resources available to them.

It should be noted that the 20mph zones are much more expensive in the long term as they include installing and maintaining physical traffic calming measures such as road humps and other speed reducing measures. Physical measures can also be unpopular and face resistance from drivers using the area as a through-route and at times from the emergency services, through there is evidence that the measures are popular with residents as this reduces speeds in their communities. While 20mph zones remain a valid option for individual roads where there is an identified problem with traffic speed, they are not suitable as an area-wide intervention.

Enforcement

Enforcement of new speed limits can be particularly effective when these are first introduced, and West Midlands Police supplemented the launch of the trial with enforcement activity that was used in other speed related campaigns. Depending on the nature and extent of infringement, drivers were either fined or offered the opportunity to receive roadside education. This involved the driver being handed a tablet computer to watch a 'Talking Heads' video featuring Birmingham school children talking about road danger and the potential impact on them. When questioned, the majority of drivers thought that this roadside education would have a lasting impact on them.

Slower is Safer campaign

The introduction of 20mph speed limits was just one element of a package of measures designed to reduce vehicle speeds. The implementation of new 20mph speed limits in Birmingham was accompanied by a high-profile publicity campaign "*20mph Slower is Safer*" to persuade people of the benefits of driving at 20mph on residential roads. Though the campaign had a city-wide reach, it focussed more intensively on areas where new 20mph speed limits were in place. Under the banner of '*Slower is Safer*', this established campaign worked with schools, workplaces and local communities and was supported by key partners, including West Midlands Police and West Midlands Fire Service as part of the Birmingham Road Safety Partnership.

For its part, the Council worked with partners and communities and linked with existing events, delivered a series of activities for engaging with targeted groups or areas while also generating stories for press coverage and content for social media. This ranged from road safety activities with schools and roadside education events aimed at drivers, to led walks or bike rides and 20mph themed stunts.

4. Monitoring of Vehicle Speeds - Update

A number of roads across the city had their speeds measured before and after the implementation of 20mph speed limits in October 2016. For this update, speed monitoring was carried out in December 2014 and February 2015 (pre-intervention) and for the month of September 2020 (post-intervention). The roads were monitored in both directions on weekdays between 7am and 7pm for a full week each time. Some of the roads selected – both inside and outside of the 20mph pilot areas – remained at 30mph and were used as comparison sites.

The measurements used here are a continuation of those used in the previous report; the 85th percentile speed is the measurement throughout this report and is the speed at or below which 85% of vehicles are observed to travel under free-flowing conditions past a fixed monitoring point. The Association of Chief Police Officers (ACPO) minimum threshold for determining whether there is a speeding problem on a road is if the 85% percentile speed is more than 10% plus 2mph over the legal speed limit, so for a 30mph road this is 35mph and for a 20mph road it is 24mph.

The results from this speed monitoring were analysed in terms of the actual 85% speed recorded and the change (decrease or increase) from before, to after the introduction of 20mph speed limits. Changes were classified as being small, medium or large (or no change) using the following criteria:

- Small – less than a 1mph decrease or increase;
- Medium – decrease or increase of between 1mph and 5mph;
- Large – more than a 5mph decrease or increase.

The average 85th percentile speed on roads where a 20mph speed limit was introduced decreased by 1.1mph meaning that the majority of drivers reduced their speed from 26.6mph before implementation to 25.5mph afterwards whilst travelling in the three areas. **Table 1** below shows that all three pilot areas showed a decrease in average speed across both the 20mph roads themselves and those roads which had retained their 30mph speed limit. The three pilot areas have shown consistent small to medium decreases in the 85th percentile speed in the period of time after the implementation of the 20mph restriction:

- In area A1 it decreased by 2.2mph, from 27.9mph to 25.7mph
- In area A2 it decreased by 0.2mph, from 25.0mph to 24.8mph
- In area A3 it decreased by 1.1mph, from 27.1mph to 26.0mph

Table 1 shows the before and after speeds once the 20mph limit had been implemented. It also includes the speed measurement data gathered from November 2017 to highlight the gradual but continuing downward trend of average speeds in the pilot areas. The results show that there were a higher proportion of roads with a decrease in their speed in the 20mph pilot areas than in the comparison sites where there was not any change to the speed limit. This was particularly the case in areas A1 and A3:

- 63% of roads in the 20mph pilot areas saw a decrease in their speed, compared to 50% of roads in the control group
- 76% of roads in 20mph pilot area A1 saw a decrease in their speed
- 59% of roads in 20mph pilot area A3 saw a decrease in their speed

Most speed decreases were rated as being either small or medium in extent. This was also the case for most speed increases recorded, both inside and outside of the 20mph pilot areas.

One road, Gibbins Road, which was included in the pilot scheme but included physical traffic calming measures saw the average 85th percentile speed decrease by 7mph for the road in both directions. This is in line with other comparisons nationally between 20mph speed limits

and 20mph zones, which show that 20mph zones are more effective in achieving greater reductions in the average speed than 20mph speed limits⁵.

| Area – roads included | Average Before Speed (mph) Dec 2014 | Average After Speed (mph) Nov 2017 | Average After speed (mph) Sep 2020 | Change in Speed (mph) pre vs post-scheme |
|----------------------------------|----------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------------|
| All new 20mph speed limits | 26.6 | 26.3 | 25.5 | - 1.1 |
| A1 – 20mph roads | 27.9 | 26.1 | 25.7 | - 2.2 |
| A1 – all roads (including 30mph) | 27.5 | 26.6 | 25.7 | - 1.8 |
| A2 – 20mph roads | 25.0 | 27.2 | 24.8 | - 0.2 |
| A2 – all roads (including 30mph) | 26.1 | 27.5 | 25.9 | - 0.2 |
| A3 – 20mph roads | 27.1 | 25.2 | 26.0 | - 1.1 |
| A3 – all roads (including 30mph) | 27.5 | 26.1 | 26.7 | - 0.8 |
| 20mph zone scheme | 26.6 | 26.8 | 25.5 | - 1.1 |
| A1 – existing 20mph road | 28.0 | 28.2 | 26.3 | - 1.7 |
| 30mph roads (20mph area) | 29.1 | 29.1 | 28.8 | - 0.3 |
| 30mph roads (other areas) | 31.5 | 32.3 | 31.8 | - 0.3 |
| 30mph roads (all areas) | 29.9 | 31.1 | 29.7 | - 0.2 |

Table 1 – Average 85th percentile vehicle speed before and after implementation of 20mph limits

Roads inside the 20mph pilot area but had retained the 30mph saw an average 85th percentile vehicle speed decrease of 0.1mph, from 29.1mph to 29.0mph. This is probably not significantly different. For the seven roads outside of the pilot area, where the speeds were kept at 30 mph between the two surveys, the 85th percentile speed rose from 31.5 mph in 2014 to 31.8mph in 2020.

It should be noted that small incremental decreases are expected in 20mph areas as has been found in many of the trials other cities and towns have implemented. In 2018, the Department for Transport (DfT) published a review titled **20mph Research Study: Process and Impact Evaluation Headline Report**⁶ (the report). In the report, it was found that the case studies showed small decreases in speeds year-on-year building up to large reductions in the area over time as the 20mph limit became embedded.

⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/757307/20mph-headline-report.pdf

⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/757307/20mph-headline-report.pdf

5. Monitoring of Road Traffic Collision Data

The STATS 19 database is a collection of all road traffic collisions that resulted in personal injury and were reported to the police within thirty days of the incident. Using STATS 19, the Council regularly monitors, reviews and analyses collision data as part of our efforts to make Birmingham's roads as safe as possible for everyone, especially vulnerable road users.

Road traffic collisions (RTCs) are categorised as resulting in fatal, serious or slight injuries. Those resulting in fatal or serious injuries are often grouped together under killed or seriously injured (KSI). RTC levels are usually monitored over a three-year period, due to the relatively low numbers involved and the potential for a small number of casualties to skew these figures for any one year – especially in relation to KSI data. Slight collisions are the most frequent type of collision.

RTC data was captured for the 36 months before and after the installation of the scheme: from October 2013 to September 2016 (pre-intervention) and November 2016 to September 2019 (post-intervention). October 2016 has been omitted from the analysis as this was the month of installation. It must be noted that all collision data dates from pre-lockdown times, so the reduction in traffic flows and the subsequent reduction in traffic collisions is not affected by this data.

Data has been analysed for residential 'C' and 'U' classified roads, where *most* of the speed limits were reduced to 20mph; and excluding main 'A' and 'B' classified roads, where *most* of the speed limits remained at 30mph.

As with the previous section, all measurements used here are the 85th percentile speed, i.e. the speed at or below which 85% of vehicles are observed to travel under free-flowing conditions past a fixed monitoring point.

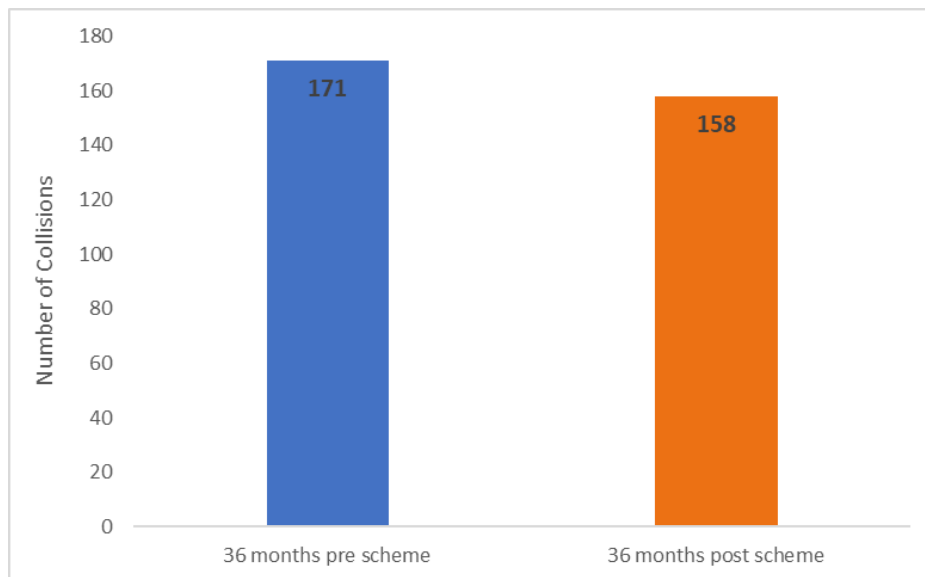


Figure 1: Comparison of KSI collision data pre- and post-scheme of all three areas

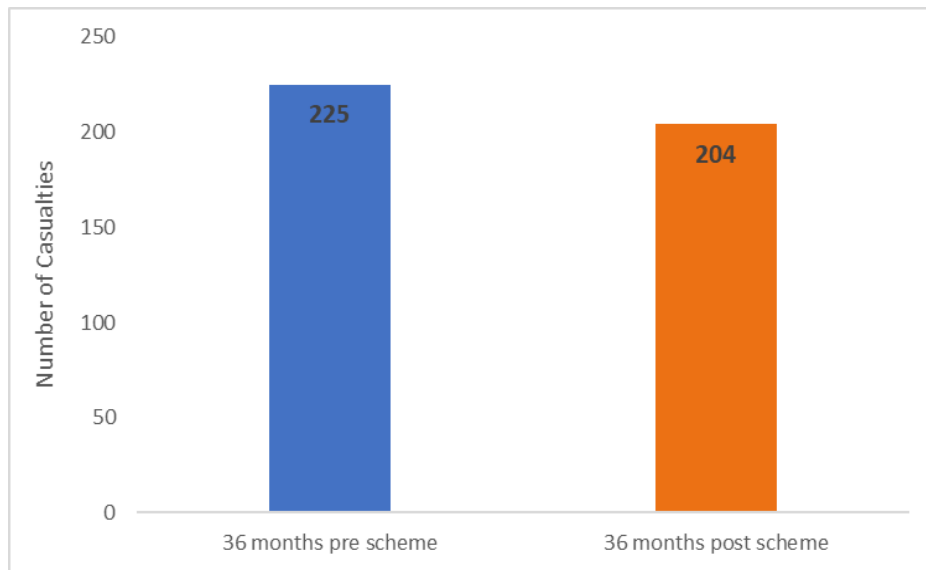


Figure 2: Comparison of KSI casualty data pre- and post-scheme of all three areas

As can be seen from, there was a decline in total KSI collisions by 7.6%. Though it can never be stated for certain that the 20mph restriction is the main factor in the reduction of KSI collisions, it can be said that it is a contributing factor.

There was a 9.3% decrease in the casualty numbers post-scheme as compared to the period before the scheme was implemented (Figure 2). This reduction in casualties means not only a lower number of people being injured but also a reduction in the costs associated with the injury. In 2019 prices, the cost to the economy of a fatal collision was £2.26m, £260k for serious collisions and £27k for slight collisions. Costs include the damage to vehicles and property, medical treatment and loss of earnings etc per collision. Therefore, any reduction in the collision numbers particularly for KSIs, can provides savings for the economy.

The following sections show the decline in collisions and casualty numbers within the individual areas in more detail.

Area A1

The 85th percentile speed prior to the implementation of the scheme was 28mph, which has since slowed to 25.7mph. Area A1 saw the total number of all collisions decrease by 3% post-scheme and casualties decline by 1%. Though the area was still experiencing speeds over the 20mph limit, the data suggests that the majority of drivers are lowering their speed and this decrease in speed is having a positive effect on KSI collision (-19%) and KSI casualties (-7%) as shown in the Figures 3 and 4 below.

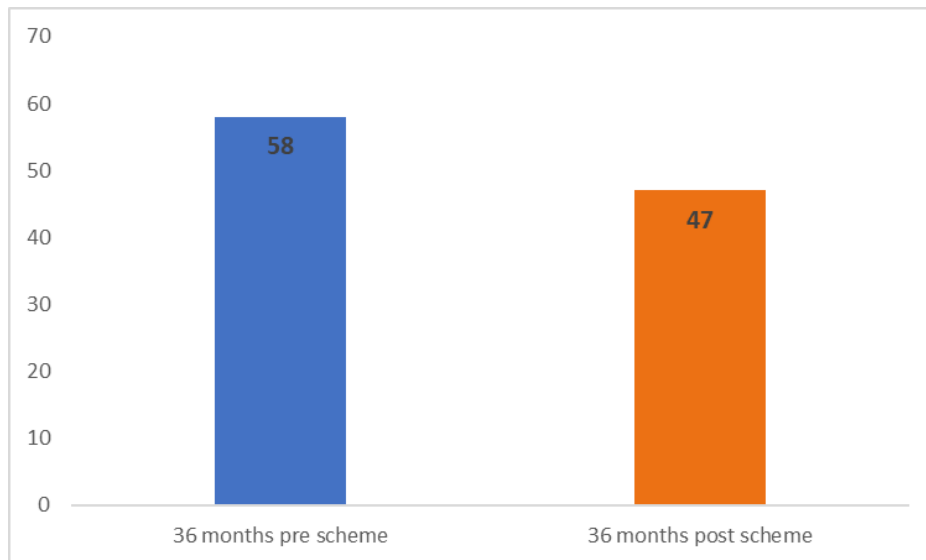


Figure 3: Area A1 KSI Collisions

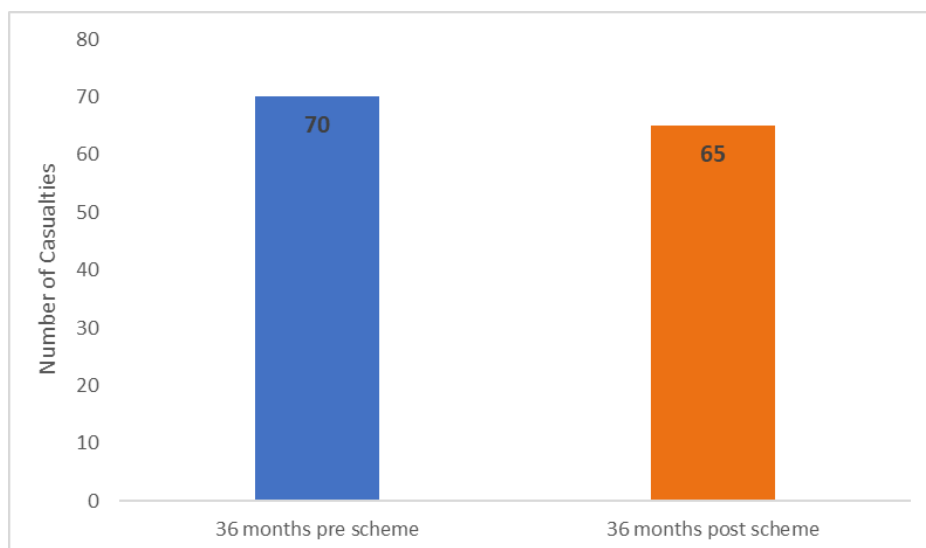


Figure 4: Area A1 KSI Casualties

Examining the effect of the lowering of the speed limit at a closer level, streets which had been experiencing speeds over the 30mph limit, saw a decrease after the trial was implemented. For example, Holliday Street and Wrentham Street regularly saw the 85th percentile speeds exceed the 30mph limit prior to the scheme. Post-scheme, Holliday Street saw the 85th percentile speed decrease 7.3mph on average in both directions and Wrentham Street had a reduction of 5.3mph.

Area A2

Area A2 has seen the least improvement of the three pilot areas: a small decrease in 85th percentile speed (0.2mph) with a small increase in all collisions (4%) and casualty numbers (1%). Though Area A2 has not seen the decline in collisions and casualties as per the other two, it is still showing promise in that the average of the entire area, including the roads

which retained their 30mph speed limit, saw a small decrease in the 85th percentile speed to 25.9mph. This shows that with time the area should continue to show a decline in average speed which should then have a more positive effect on the collision and casualty numbers.

Slight collisions in the area have remained level post-scheme but there has been an increase in KSI collisions by 31%, which equates to eleven additional collisions post-scheme. However, no change in slight collisions may suggest that the small increase in KSI collisions was an anomaly and given time will revert to the downward trend it had been on after the implementation of the scheme.

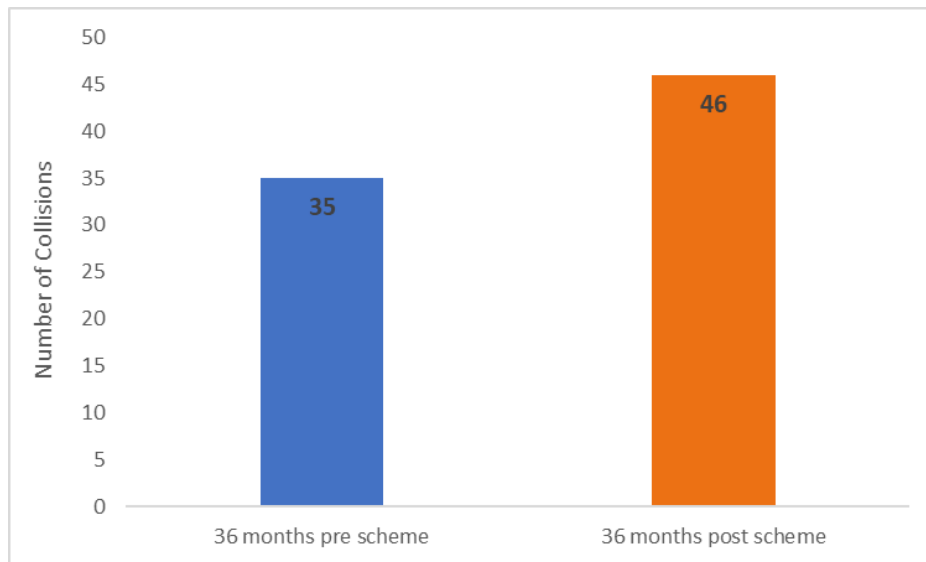


Figure 5: Area A2 KSI Collisions

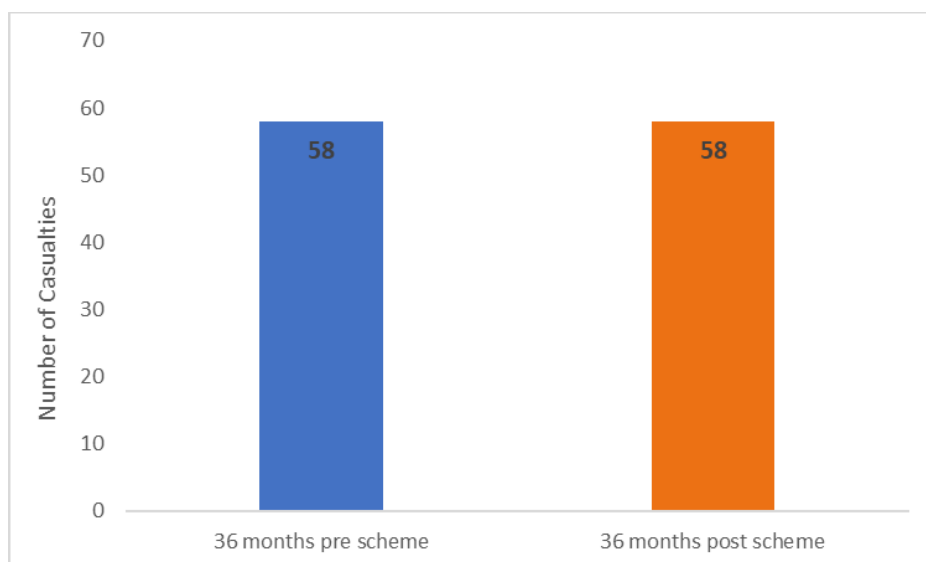


Figure 6: Area A2 KSI Casualties

Within the area itself, roads such as Alum Rock Road and Duddeston Manor Road see reductions in speed of around 1.5mph. Roads which regularly experienced speeds in excess of 30mph, such as Drews Lane, St. Andrews Road and Burney Lane, saw small reductions in speeds though still over the 20mph limit. This may suggest that whilst the area in general did not see reductions in speed similar to those in the other two areas, given time and some other measures this may improve.

Area A3

Area A3 experienced the most collisions but has seen the most improvement across the board with reductions in collisions, casualties and speed. The average 85th percentile speed prior to the implementation of the scheme was 27.3mph, which decreased to 26mph in the post-scheme period.

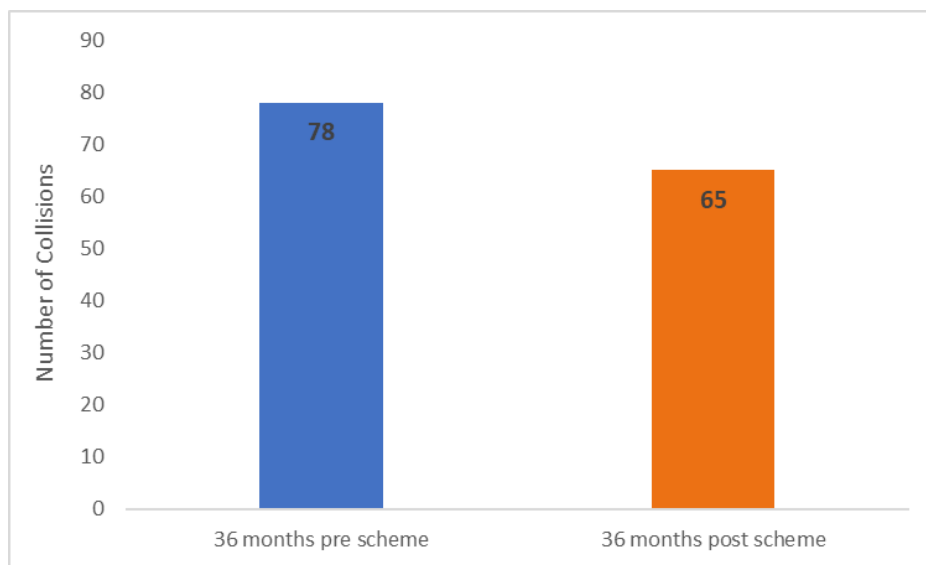


Figure 7: Area A3 KSI Collisions

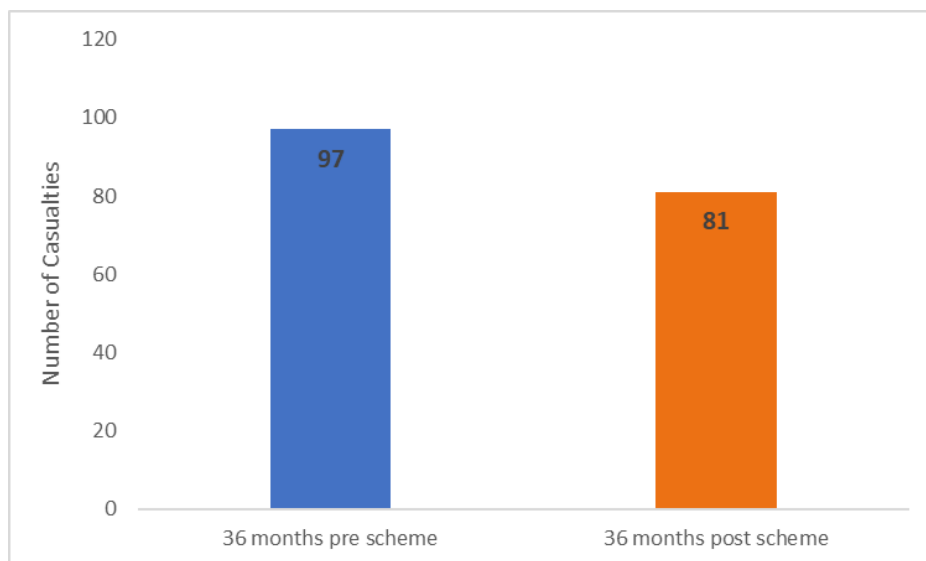


Figure 8: Area A3 KSI Casualties

With an average drop of 1mph across the whole area, including the 30mph roads, Area A3 saw some of the largest decreases in speed across most of its roads. For example, Area A3 had the most roads out of the three areas which had speeds in excess of 30mph pre-scheme. Post implementation of the scheme saw decreases in speed in all roads except for one. Roads such as Avenue Road had a decrease of an average 3mph, Balsall Heath Road (3.6mph) and Reddings Road (1.6mph).

The decrease in speed contributed to the subsequent drop in collisions and casualties as can be seen above. There was a significant decrease in KSI collisions (16.7%) and casualties improved across both categories with slight casualties decreasing by 5% and KSI casualties by 16%. Though slight collisions remained broadly level post-scheme, the significant drop in KSI collisions is positive for the area and there was an overall decrease of all collisions of 2%.

In the future, once traffic levels to return to those before the pandemic, any monitoring which could be undertaken will include the effects of the introduction of the Clean Air Zone and transport schemes installed from the Emergency Active Travel Fund. By waiting until the other schemes have embedded themselves and there has been a return to office working, it will be easier to monitor the long-term trends within the areas and help to provide a more robust picture in terms of whether the core objectives of the scheme have been achieved.

Overall, using road traffic and collision data, it can be shown that there is a downward trend for speed, collisions and casualty numbers in the three areas which were piloted.

6. Comparison with other 20mph schemes

Birmingham is not alone in introducing 20mph speed limit areas; indeed 20mph limits and zones have been introduced in a considerable number of urban areas (and some rural ones) across the United Kingdom, the earliest of which in 1993. Cities like Hull, Edinburgh and parts of London have implemented 20mph limits and zones as a method of reducing collisions.

Over the last couple of years there have been some encouraging results published by local authorities from evaluation of their own 20mph programmes, for example:

- **Brighton and Hove City Council** implemented a city wide 20mph limit across several areas within the wider city boundary in 2013, resulting in 160km of 20mph limit roads. This was to address the number of collisions and casualties that the city had been experiencing. After the first two phases had been implemented, both collisions and casualties had greatly reduced, and the council was introducing a third phase in 2015. The public were also actively asking for their road to be included in the third phase due to the success of the other two phases. One factor particular to this case study was that eight vehicle activated signs were in operation alerting drivers of their approach to a 20mph area and rotated around the streets where speed limits were not decreasing.
- In 2007, **Portsmouth** reduced the speed limit to 20mph in 223 sites (94% of all roads), split between six different areas of the city. A significant reduction in speeds across the city resulted in a drop in the number of police reported injuries in the six areas (21%). Evidence from journey speed analysis shows an increase in 20mph

compliance over time, from 58% one year after (2009) to 62% seven years after (2015) and a reduction in the 85th percentile (from 25.8mph to 24.8mph).

- **Edinburgh City Council** reported an average reduction of 2.41mph and is now seeking to introduce the scheme across the city.
- **Hull City Council** reported that between 1994 and 2001 there was a drop of 14% in casualties compared to a rise of 1.5% in the rest of Yorkshire and Humberside. Within the 20mph zones themselves, total accidents decreased by 56% and fatal and serious injuries decreased by 90%. The biggest reductions were pedestrian casualties (54%), child casualties (54%) and child pedestrian casualties (74%).

It is not fully possible to compare other schemes to the Birmingham trial due to the differences in area size, population density, composition of road etc. Portsmouth for example, has lots of narrow roads with parked cars on either side, raising the perception of risk and helping in the reduction of speeds. However, what the other schemes help inform us is what other factors are needed to aid in the success of a scheme for example, traffic calming measures, support from a wide range of partners, community involvement etc⁷.

7. Further evidence on the impact of 20mph limits

In the DfT's review of the 20mph limit (2018), it set out to understand the impact of a 20mph speed limit on a residential area, the outcomes of the twelve schemes that are in place around the country and any recommendations for authorities seeking to implement their own schemes. The report found that:

- most resident drivers (72%) and non-resident drivers (69%) agreed that “the 20mph limit makes it more acceptable to drive at a lower speed”.
- the structure of the road makes enforcing a lower speed limit easier.
- drivers who drove at the faster end of the scale were found to have reduced their speed, with the 85th percentile speed falling by -1.1mph in residential areas and by -1.6mph in city centre areas.
- there was a decline in speed in the surrounding 30mph and 40mph roads across the case study areas; suggesting that in general, drivers were not trying to make up for lost time when leaving a 20mph limit area.
- primary reasons for non-compliance of speed limits is a lack of enforcement and lack of concern about the consequences.
- there was an expected higher compliance on roads which were 20mph and physical traffic calming infrastructure versus new 20mph (signed only) roads.

Though the report acknowledged there was insufficient evidence to fully endorse 20mph limits due to a number of external factors, there is evidence to show that the schemes have potential to help lower speeds and subsequently collisions and casualties.

⁷ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784905/technical-appendix-2-20mph-gps-journey-speed-analysis-report.pdf

In addition, the report, which had conducted surveys in the 20mph limit areas, found that the scheme is beneficial for residents with perception of speed higher for residents in an area wide scheme (74%) compared to those in a small-scale scheme (69%) or city centre (62%).

National trends are produced each year showing what are the main contributing factors for collisions in Great Britain, all categorised under main headings. The 3 top contributing factors (or headings) for collisions occurring for 2019 were:

- **Driver/Rider error or reaction** – e.g. a driver may have failed to look properly or judge another vehicle / person's path. The national average for this factor is 66%, the West Midlands is 75%.
- **Behaviour or inexperience** – an example of this is driver carelessness or aggressive driving. The national average for this factor is 23%, the West Midlands is 30%.
- **Injudicious action** – e.g. speeding or disobeying the rules of the road when driving. The national average for this factor is 20%, the West Midlands is 28%.

The West Midlands is above the national average for all three of the above contributing factors. Under the main headings, the most common sub-category in 2019 was **Driver/Rider failed to look properly** (9% above national average), followed by **Driver/Rider failed to judge other person's path or speed** (3%) and **Driver/Rider careless, reckless or in a hurry** (4%).

In 2019, Birmingham recorded 2,623 collisions, the majority of them categorised as slight collisions (84%), they occurred on A roads or minor roads (98%) and in dry conditions (71%). A lower speed limit on minor or A roads should help to increase driver's awareness of their surrounding area and be in a better position to judge another driver's or person's path / speed thus reducing the likelihood of a collision occurring.

As noted, other cities have implemented 20mph areas and zones or are in the process of installing them. Around 20 major urban authorities have implemented 20mph limits with more proposed or being installed. Oxfordshire County Council has recently implemented five 20mph limits with the aim to install more in the future. The Welsh Government⁸ completed a three-month consultation in autumn 2021 on introducing a countrywide 20mph speed limit on restricted roads and is trialling the scheme in eight areas across Wales. The rationale for implementing such schemes are the benefits:

- It has been shown that a reduction in average speed of just 1mph means that the number of collisions falls by approximately 5% (Finch *et al*, 1994⁹).
- It is estimated that a 20mph area can be introduced at just 1/6th of the cost of implementing a 20mph zone.¹⁰

⁸ <https://gov.wales/introducing-20mph-speed-limits-frequently-asked-questions>

⁹ <https://trl.co.uk/reports/PR58>

¹⁰ www.rospa.com/rospaweb/docs/advice-services/road-safety/drivers/20-mph-zone-factsheet.pdf

- The cost of implementing 20mph limits are likely to be much lower than the cost benefits that reduced speeds bring. The cost of a fatality (in 2019) was estimated at £2.2m, serious collisions are £261k and slight collisions are £27k.¹¹

Taking the above into account, while an average reduction of 1.4mph in Birmingham may initially seem small, the financial and human benefits resulting from this are in fact considerable. There is also potential for additional benefits from the wider area that can be covered through a policy of 20mph speed limits, such as encouraging more walking and cycling.

There was some concern that 20mph speed limits would cause delays to bus journey times, but National Express, Birmingham's major bus operator, has commented "20mph areas have not had any material effect on bus speeds. It's congestion that massively slows down buses. If 20mph can help cut congestion, then it's good for buses".

Falling traffic levels are a common occurrence during periods of economic downturn or lately the Covid-19 pandemic. The common trend is for the traffic levels to return to their pre-interrupted state once the crisis has ended. After the previous economic recession, traffic levels not only returned to those experienced prior to the recession but surpassed those levels. A similar trend may occur once the country fully returns to the pre-pandemic norms of the daily commute and leisure trips etc. During the first period of the Covid-19 pandemic and the consequent restrictions, the DfT¹² reported that traffic levels (cars, HGVs, etc) dropped to 24% of the norm in April 2020, rail passengers dropped to 4% and bus usage to 10%. Cycling levels conversely jumped to 248% of pre-pandemic levels, peaking at 384% by May 2020.

Since the restrictions have ended, traffic levels have returned to pre-pandemic levels but it remains to be seen if these levels will remain steady or increase as has been seen after other national events. Analysis will be done on the effects of the pandemic on traffic levels in the upcoming years but what can be taken away is that with restrictions and good infrastructure in place, a modal switch can occur. The Council during this time implemented its Emergency Active Travel Fund (from central government funding) which installed a mixture of temporary and permanent small transport schemes aimed at encouraging active travel and a switch from the private car, especially for short trips. Introducing a 20mph speed limit more widely, increasing and linking cycling and walking routes can help reduce private car usage whilst simultaneously increasing active travel.

The DfT's review of the 20mph limit (2018) found that they "have the potential to deliver a wide range of benefits" which not only include the reduction in collisions and casualties but health, environmental and community benefits. More importantly was the emphasis that unlike other transport schemes, 20mph schemes are a longer-term commitment and if "supported by complementary transport, health, environment and community policy and

¹¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/928205/reported-road-casualties-gb-annual-report-2019.pdf

¹² https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic?utm_medium=email&utm_campaign=govuk-notifications-topic&utm_source=a09632c7-8216-4365-8933-b44523b80e5c&utm_content=immediately

interventions are likely to deliver greater benefits". The notion of giving 20mph area schemes "bed-in" time is especially true for 20mph limits rather than 20mph zones as the latter force compliance through physical measures allowing the effects to be measured more easily¹³.

This seems to be the case in the pilot areas as after the trial was implemented there are consistent reductions in speed, collisions and casualties. Changing behaviour to create new social norms is a continual process and should be allowed the time to embed itself in the community as well as being supported by multiple agencies such as public health, the emergency services, planning etc. The approach to 20mph limits should be considered in the same terms as the wearing of seatbelts, drink driving and the smoking ban; given enough time and support, adherence to 20mph limit will become the norm. The DfT report found that there was little support for the 20mph limit to be reverted back to 30mph due to the perception among residents that the limit was beneficial across the area and for drivers it meant that having to drive slowly was more acceptable.

Whilst 20mph limits require less signage than 20mph zones and do not require physical traffic calming measures, there is a risk that the minimal signage approach can undermine the impact and credibility of the scheme. For example, in the installation of the Clean Air Zone (CAZ), the Council installed more than 300 signs in the area surrounding the boundary to inform drivers they are approaching the zone and use automatic number plate recognition cameras (ANPR) to detect vehicles which do not comply. The CAZ, which went into effect on 1st June 2021, is successfully reducing the amount of non-compliant vehicles which are entering the zone. Through the enforcement of the zone through the ANPR the CAZ had an 82% compliance rate recorded from its introduction to the end of August 2021, with the number of non-compliant vehicles entering the zone reduced again by December 2021. It would seem with a higher degree of enforcement; a greater level of success can be expected.

Whilst, it would not be possible to install cameras to detect speeding vehicles on every road, pilot schemes allow time to ascertain what has a better effect in encouraging motorists to reduce their speeds. In future, it would be useful to consider additional signage in some locations, along with entry treatments to make more obvious when entering into a 20mph limit area and further physical measures in collision hot spots. This will need to be balanced with scheme delivery costs and maintenance.

8. Conclusions and recommendations

As has been evidenced above, the 20mph pilot scheme has been in operation since October 2016. The implementation of 20mph speed limits was on a 'signs and lines' only basis, with no physical traffic calming measures. The three areas were in part selected on the number and severity of road traffic collisions (RTCs) in those areas. Evidence has been gathered and analysed from speed and RTC data and this has shown that the scheme has yielded broadly positive results:

¹³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784905/technical-appendix-2-20mph-gps-journey-speed-analysis-report.pdf

- Speeds have reduced across all three areas with the average 85th percentile speed on roads where a 20mph speed limit was introduced decreased by 1.4mph, from 27.7mph before implementation to 26.3mph afterwards.
 - **Area A1** – decrease in speed to 25.7mph and a 19% reduction in KSI collisions
 - **Area A2** – decrease in speed to 24.8mph in the 20mph roads and a drop in average speed on roads at 30mph
 - **Area A3** – a 17% reduction in KSI collisions and a decrease in speed to 26.0mph
- The numbers, and severity of collisions have declined across all the areas.
- The reduction in collisions and subsequent casualties has had financial benefits to the local economy.

The Council remains committed to implementing 20mph limits to residential roads across the city and the scheme must be considered as a long-term investment and allow time for the scheme to embed and driver behaviour to change. It should also be taken as part of package of measures which fits in with the Birmingham Transport Plan 2031 (the BTP). One of the four principles of the BTP is *Prioritising active travel in local neighbourhoods* and that the plan is to:

- Make all local roads 20mph, leaving distributor and strategic roads at higher speeds.
- Encourage a modal switch to walking and cycling, especially for short trips.

Cars will not continue to be the dominant force around schools and homes.

With these aims in mind, the next steps for the Council could be to introduce other 20mph schemes in areas where speeds are considered a problem. In conjunction with this, public engagement campaigns to further reinforce the reduced limits in the 20mph areas should be considered, especially as the areas do not include physical measures to reduce speeds. It may be that the public engagement does not need to be extensive and costly but could be restricted to media campaigns or leaflet drops as examples.

Thus far, the government has not introduced a default 20mph speed limit in urban areas, which could have a significant and meaningful impact in reducing crashes and serious injuries¹⁴. Therefore, it is down to individual local and transport authorities to continue to explore the opportunities that 20mph schemes bring and allow time for the change to fully embed itself whilst considering other measures that could be brought in to assist in the trial.

9. Further information

Contact: Mel Jones, Head of Transport Planning and Network Strategy

mel.jones@birmingham.gov.uk

Birmingham.gov.uk/20mph

¹⁴ <http://www.brake.org.uk/assets/docs/GO20toolkit/GO20-report-sep15.pdf>