



# SHEFFIELD CITY COUNCIL Cabinet Highways Report

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**Report of:** Executive Director, Place

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**Date:** 8<sup>th</sup> March 2012

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**Subject:** SHEFFIELD 20MPH SPEED LIMIT STRATEGY

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**Author of Report:** Simon Nelson 0114 2736176

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## **Summary:**

This report proposes an implementation strategy for the introduction of 20mph speed limits in residential areas of Sheffield.

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## **Reasons for Recommendations:**

Reducing the speed of traffic in residential areas would, in the long term, reduce the number and severity of accidents, reduce the fear of accidents, encourage sustainable modes of travel and contribute towards the creation of a more pleasant, cohesive environment.

## **Recommendations:**

- Endorse the long-term objective of establishing 20mph as the maximum reasonable speed in appropriate residential areas of Sheffield.
  - Endorse the strategy for the introduction of 20mph speed limits in appropriate residential areas on a staged basis as described in this report.
  - Approve the prioritisation of further 20mph speed limit areas by a city-wide comparison of the number and severity of accidents.
  - Officers assist any Community Assembly that wishes to pursue the introduction of a 20mph speed limit in keeping with the principles established in this strategy.
  - Identify resources to enable officers to deliver an ongoing city-wide programme of education and publicity in partnership with other local authorities, agencies and pressure groups around the benefits to society of lower vehicle speeds in residential areas.
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## **Background Papers:**

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**Category of Report:** OPEN

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## Statutory and Council Policy Checklist

<b>Financial Implications</b>
YES Cleared by: Catherine Rodgers
<b>Legal Implications</b>
NO Cleared by: Julian Ward
<b>Equality of Opportunity Implications</b>
YES Cleared by: Ian Oldershaw
<b>Tackling Health Inequalities Implications</b>
NO
<b>Human rights Implications</b>
NO:
<b>Environmental and Sustainability implications</b>
NO
<b>Economic impact</b>
NO
<b>Community safety implications</b>
NO
<b>Human resources implications</b>
NO
<b>Property implications</b>
NO
<b>Area(s) affected</b>
ALL
<b>Relevant Cabinet Portfolio Leader</b>
Leigh Bramall
<b>Relevant Scrutiny Committee if decision called in</b>
Culture, Economy and Sustainability
<b>Is the item a matter which is reserved for approval by the City Council?</b>
NO
<b>Press release</b>
NO

## **SHEFFIELD 20MPH SPEED LIMIT STRATEGY**

### **1.0 SUMMARY**

1.1 This report proposes an implementation strategy for the introduction of 20mph speed limits in residential areas of Sheffield.

It provides Members with further information regarding:

- the known effects of introducing 20mph speed limits in residential areas;
- factors that will influence the successful introduction of 20mph speed limits in Sheffield; and
- the implications of introducing 20mph speed limits in the context of the PFI contract for Highway Maintenance,

and goes on to recommend:

- the design standards to be used in the introduction of 20mph speed limit areas;
- that the seven Community Assemblies are each asked to nominate a school around which a 20mph speed limit would be introduced during the 2012-13 and 2013-14 financial years;
- that further 20mph speed limit areas be prioritised by a city-wide comparison of the number and severity of accidents.
- that the long-term aim be to establish 20mph as the default maximum appropriate speed in residential areas, with resources made available to promote a change in attitude amongst the city's drivers; and
- that assistance is given to any Community Assembly that wishes to fund the introduction of a 20mph speed limit in a residential area, in accordance with the provisions and design criteria set out in this report.

### **2.0 WHAT DOES THIS MEAN FOR SHEFFIELD PEOPLE?**

2.1 Reducing the average speed of drivers in residential areas would, over time, bring about a reduction in the number and severity of traffic accidents, thus helping to create *safe and secure communities*. Implementing the strategy described in this report, including an ongoing programme of publicity and driver education would contribute to the creation of a safer residential environment and a *Great Place to Live*.

### 3.0 OUTCOME AND SUSTAINABILITY

- 3.1 The implementation of this strategy would be a first step towards influencing driver behaviour and establishing 20mph as the default maximum appropriate speed in residential areas, thereby contributing to the delivery of the *'sustainable and safe transport'* objective of the Corporate Plan and Policy W of the Sheffield City Region Transport Strategy 2011-2026, *'To encourage safer road use and reduce casualties on our roads'*.

### 4.0 REPORT

#### Introduction

- 4.1 The Department for Transport stipulate that every area-wide 20mph speed limit must be 'traffic calmed' to ensure that the limit is self-enforcing. Until recently, highway features such as junctions and bends would have to be supplemented by road humps, chicanes and speed cushions that would effectively compel drivers to travel at or below 20mph (the Nether Edge and Arbourthorne 20mph zones for example).
- 4.2 The DfT has now extended the list of items that constitute 'calming features' to include traffic signs and road markings<sup>1</sup>. This means that 20mph speed limits can be introduced with fewer road humps and chicanes.
- 4.3 In July 2010 Cabinet Highways Committee stated that officers should assist any Community Assembly that wished to fund the introduction of a 20mph speed limit in a residential area without the extensive use of *physical* traffic calming features. In February 2011 the full Council adopted the following motion: *"To bring forward plans for city-wide 20mph limits on residential roads (excluding main roads)"*. On 8<sup>th</sup> September 2011 CHC requested an implementation strategy for sign-only 20mph speed limits on suitable residential roads across the city, initially in areas around schools.
- 4.4 For some time housing developers have been required to design road layouts that induce driving speeds of 20mph without the need for traditional calming features. The first 'retro-fit' sign-only 20mph speed limits to be introduced to existing residential estates in Sheffield are at Stradbroke, Wisewood and Shiregreen. The Wisewood scheme includes physical calming measures on some roads to reduce speeds to a level suitable for a 20mph limit.
- 4.5 In September 2011 the European Union Parliament adopted an EU Transport Committee report on road safety, including the recommendation that "[Local Authorities] *introduce speed limits of 30 km/h [18mph] in all residential areas...*"

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<sup>1</sup> [Ministers cut traffic signs red tape for local councils](#) (DfT press release, June 2011)

- 4.6 The factors that will influence the extent to which sign-only 20mph speed limit areas are likely to be an effective way of reducing speeds in the residential areas of Sheffield are explored in the following sections. Appendix A contains a review of sign-only 20mph speed limit areas in Portsmouth, Warrington and Newcastle.

#### Speed and accident reduction

- 4.7 Speed is only one of many factors that contribute to traffic accidents. However, a reduction in vehicle speeds in the majority of residential areas would, over time, reduce the number and severity of collisions. In an urban environment it has been shown that a 1mph reduction in average vehicle speed from an average, free-flowing speed of 30mph produces a 3% reduction in collisions. (The scale of this effect increases as average speeds decrease; for instance a 1mph reduction from an average speed of 20mph generates only a 7% reduction in collisions.<sup>2</sup>)
- 4.8 Aside from a reduction in the number and severity of accidents, lower vehicle speeds would help to reduce the fear of accidents and contribute towards the creation of a more pleasant, accessible environment.
- 4.9 Early studies of existing sign-only 20mph speed limit schemes find that they generally produce an average reduction in speed of between 1 and 1.5mph and that the majority of drivers continue to travel at well in excess of 20mph, particularly on roads where the average speed was previously greater than 24mph. However, as explained below, the aim of the 20mph speed limit strategy is to build on these initial results and further influence driver behaviour in the longer term.
- 4.10 Encouragingly, some of the greatest reductions in speed have been recorded on residential roads with higher than average 'before' speeds. Portsmouth has experienced an average 6.3mph reduction on roads that previously had average speeds of over 24mph. This demonstrates what can be achieved in areas where 'before' speeds are high: if maintained, this level of speed reduction would not only reduce the likelihood of accidents occurring, but also reduce the severity of any resultant injuries.
- 4.11 Physically traffic calmed 20mph zones typically result in a 60% reduction in the number of collisions, with an attendant drop in collision severity. The introduction of a sign-only 20mph speed limit is likely to initially be accompanied by a reduction in collision rates of between 3% and 7% (depending on the average 'before' speeds). It will take longer to determine whether these theoretical accident reductions translate into actual lower accident rates.
- 4.12 In Sheffield, the residential areas which historically had the worst accident records have already been treated with a combination of physical traffic

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<sup>2</sup> [Transport Research Laboratory Report 421 - The effects of drivers' speed on the frequency of road accidents](#) (Taylor M, Lynam D and Baruya A, 2000)

calming and 20mph speed limits (for example the Child Safety Zone in Wybourn saw a reduction in child casualties of 67%).

- 4.13 The majority of all collisions (70%-80%), and more of the most severe injuries, occur on main roads. These would not be made subject to a 20 mph speed limit but instead, would be treated through investment in Accident Saving Schemes and road safety education, training and publicity.

#### Vehicle emissions

- 4.14 Studies of the impact of physical traffic calming on vehicle emissions tend to agree that calming can cause a decrease in nitrous oxide emissions but an increase in carbon monoxide, carbon dioxide, oxides of nitrogen and hydro carbon emissions. This is primarily due to drivers slowing down and speeding up between calming features.

- 4.15 At a constant lower speed a driver will generally use less fuel, but it would be misleading to suggest that there would be an immediate reduction in vehicle exhaust emissions resulting solely from the introduction of 20mph limits. In the short-term, the small reductions in speed initially produced by sign-only 20mph speed limits are unlikely to effect vehicle emissions to any appreciable degree. A study of the impact of the introduction of [un-calmed] 30km/h speed limits on vehicle exhaust emissions<sup>3</sup> concluded that “... *emissions of most classic pollutants should not be expected to rise or fall dramatically*”.

#### Public attitudes and behaviour

- 4.16 The aim of reducing average speeds in residential areas, and particularly curbing those who drive at the highest speeds (either relative to the speed limit or to the conditions) is generally acknowledged to be ‘a good thing’, attracting broad support from a significant majority of the public. The 2010 British Social Attitudes survey<sup>4</sup> found that 71% of respondents were in favour of speed limits defaulting to 20mph in residential areas, also that more people are in favour of road humps than are against them (48% to 38%). (The survey participants are representative of all geographic areas and socio-economic groups. Support for physical traffic calming tends to increase significantly in less affluent residential areas that typically suffer from the highest accident rates.)
- 4.17 Despite this prevailing attitude, a minority continue to exceed the existing speed limits and/or drive at inappropriate speed. As might be expected, those people are involved in a disproportionately high number of accidents.

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<sup>3</sup> [Impact of 30 km/h zone introduction on vehicle exhaust emissions in urban areas](#) (Luc Int Panis, Steven Broekx, Carolien Beckx; Belgium, 2006)

<sup>4</sup> [2010 British Social Attitudes Survey: Attitudes to transport](#) (National Centre for Social Research)

*“Drivers who adopt speeds above the average for the road have significantly higher accident involvement than those adopting the average speed and this involvement rises sharply for those drivers adopting the highest speeds” (Taylor, Lynam and Baruya, 2000)*

- 4.18 Prior to implementation, the prospect of a 20mph speed limit in Stradbroke was widely supported, and still is according to a survey conducted soon after implementation. Over the same period people’s faith that drivers would *adhere* to the new limit markedly reduced. In the space of six months the number of people who were certain that drivers would not comply with the new limit had grown from 49% to 72%. However, there can still be benefits. Even though the recorded reduction in speeds (on average, 1.8mph) is apparently too small for people to notice, should similar results be produced across all residential areas of Sheffield, the number of accidents in those areas could be expected to fall by between 5% and 13%.
- 4.19 If Sheffield is to stand a realistic chance of significantly reducing average speeds in residential areas it is vital that traffic signs and road markings are backed up with long-term investment in both driver and community education. It may be possible to realise a short-term, marginal adjustment in behaviour amongst some drivers simply by erecting the ‘20’ signs, but it will be a much lengthier project, perhaps 10 or 15 years, to achieve the goal of a fundamental change in driving behaviour.

#### Enforcement

- 4.20 Government guidance remains that 20mph speed limits should be self-enforcing. From the Department for Transport’s ‘Call for comments on a revision of the DfT’s speed limit circular’ in December 2009:
- “...20mph speed limits should be generally self-enforcing, i.e. the existing conditions of the road together with any measures such as traffic calming or signing as part of the scheme, should lead to average traffic speeds compliant with the 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.”*
- 4.21 Some 20mph speed limits would need to be accompanied by some form of physical traffic calming in order to comply with this guidance. It should be acknowledged that without such measures the majority of motorists will not comply with the reduced limit.
- 4.22 The Head of South Yorkshire Police’s Road Policing Group states that their enforcement policy *“mirrors the ACPO national policy, that the police will not routinely enforce 20mph limits. Our speed enforcement is based upon intelligence to take effective action against specific risks i.e. where injury road traffic collisions have occurred [as noted above, most*

accidents occur on main roads, i.e. roads unsuitable to 20mph speed limits]. *There is scope for enforcement on a "community interest" basis - these are locations where the local community have raised concern about a particular hazard or anti-social road use, this accounts for less than 10% of enforcement and is applied on a short-term basis only.*

*"Where 20mph schemes are introduced they should be engineered to promote habitual compliance (i.e. they should be designed and engineered to inhibit travel at higher speeds). If despite this there is evidence of excessive speeding and community concern then enforcement could be requested and this will be considered against the competing demands. In addition to the Safer Camera Partnership and Roads Policing Group many Safer Neighbourhoods areas have staff (including special constables) trained in use of speed enforcement kit, so for limited periods there would be scope for enforcement."*

- 4.23 The evidence suggests that the majority of motorists would drive at speeds above the new limit. However even if the police were to undertake regular enforcement action it would perhaps be counter-productive to actively seek to criminalise huge numbers of people given the need to retain and nurture public support.

#### 20mph Speed Limits and Bus Services

- 4.24 The SYPTE have provided the following comments on 20mph speed limits:

*"20mph in residential areas does not cause any problems for bus services. Buses should not, and would actually struggle, to achieve more than 20mph on residential roads and in practice are much slower than this. As long as any physical measures placed on bus routes are appropriate i.e. cushions or junction plateaus rather than humps then the PTE and bus operators support reducing vehicle speeds in residential areas to appropriate levels. Buses actually assist in reducing vehicle speeds by slowing traffic and also stopping traffic whilst boarding and alighting and thus act as traffic calming.*

*Obviously any installation of physical measures or changes to the highway layout would need to be discussed on an individual basis taking into account the frequency of bus routes affected and the number of measures that a service would encounter on each journey through the scheme area. Consultation between Sheffield City Council and the PTE/Bus operators on previous traffic calming schemes has always been excellent and we will support the continued communication and compromise between partners including any changes that occur with the introduction of the PFI."*



### PFI opportunities

- 4.25 The vast majority of the traffic signs associated with 20mph speed limits would be additional to the current stock, and therefore would require funding in full. Unfortunately, there would be no direct cost benefit from coordinating the introduction of a 20mph speed limit with the Service Provider's core PFI work, although coordinating core work with this non-core work would reduce disruption, demonstrate a joined up approach to service delivery and add to the impact of a new 20mph speed limit.

### Discussion

- 4.26 The setting of a sign-only 20mph speed limit is in itself a straightforward process, requiring the advertising and making of a Traffic Regulation Order and the erection of the appropriate signs. The crucial issue is getting a critical mass of motorists to drive at the lower limit. Although it is clear that the public generally support the introduction of 20mph speed limits, it remains open to question whether the initial reductions in speed seen elsewhere will be sustained and eventually contribute to a reduction in the accident rate.
- 4.27 The Portsmouth scheme is noteworthy as it represents the most comprehensive use of sign-only 20mph speed limits in the UK, with all the benefits associated with a blanket approach. By introducing a 20mph limit in *all* residential areas Portsmouth City Council has given a clear, unequivocal message to drivers. Two years after completion, the data indicates outcomes not dissimilar to those found by other local authorities that have approached 20mph speed limits on a more discrete basis, a 1.3mph average reduction in driver speed and a 7% net reduction in accidents. Whether these interim findings will regress, or consolidate and amplify in the future remains to be seen.
- 4.28 The key to realising substantially lower speeds on our residential roads lies less in traffic signs and enforcement than in affecting a fundamental shift in attitude. This will require building a widespread and longstanding community acceptance that 20mph is the appropriate maximum speed to travel in residential areas.
- 4.29 Formally lowering the speed limit, whether in an individual area or on a much wider basis, is only part of a process to encourage more appropriate driver behaviour. Routine enforcement of 20mph limits is perhaps not as important as long-term education, with publicity to keep the focus on driving behaviour in all residential areas whether or not they are subject to a 20mph limit.
- 4.30 It will be some time before the long term benefits of 20mph speed limits can be fully realised and evaluated. That is not to say that the goal of lower speeds in residential areas should not be pursued. A sensible approach would be to make progress on a staged basis, particularly given the current budget constraints.

## Proposed 20mph Speed Limit Strategy

- 4.31 All potential sign-only 20mph schemes would be ranked according to the number and severity of reported collisions within those areas over the last five years.
- 4.32 It is recommended that each Community Assembly be invited to nominate a 'pilot' area from the ranked list, one that contains at least one school. Their decision would be informed by the collision statistics for the residential parts of the Assembly area, and their knowledge of the likely level of local support. A further report would then be brought to Cabinet Highways Committee to seek Member approval for each of the seven nominated areas and to recommend an order of implementation.
- 4.33 The role out of 20mph speed limits would be limited to residential areas. A- and B-class roads, major bus routes, and roads with an existing speed limit of 40mph or more would not be made subject to a 20mph speed limit. There would be a presumption against including C-class roads (generally local distributor roads) within new 20mph speed limit areas, although the relevant Community Assembly would be consulted to enable appropriate decisions to be made on the precise boundaries of a 20mph area.
- 4.34 Each household within the selected area would receive a leaflet explaining the long-term aims and short-term limitations of sign-only 20mph speed limits, with residents invited to comment on or object to the introduction of a 20mph Traffic Regulation Order. All comments would be reported to Cabinet Highways Committee where Members would be asked to overrule or uphold any objections.
- 4.35 The seven schemes represent a two-year programme of works, the delivery of which would be coordinated with PFI contract activities wherever practicable.
- 4.36 Further 20mph speed limits would be prioritised by a city-wide comparison of the number and severity of accidents in suitable areas, with a view to introducing the new speed limit into residential areas on a 'worst first' basis.
- 4.37 The proposed design standards for future 20mph speed limit areas in Sheffield are set out in Appendix B and reflect the predominantly sign-only approach described in the introduction to this report.
- 4.38 Individual Community Assemblies may want to progress with one or more 20mph speed limit areas before funding is made available from the Local Transport Plan settlement (see 'Financial Implications' below). Officers would continue to assist any Assembly that wishes to fund the introduction of a sign-only 20mph speed limit from its own Local Transport Plan allocation and/or discretionary budget, in-keeping with the principles established in this report and consistent with the areas described by the ranking process.

- 4.39 A request for the introduction of a 20mph speed limit throughout the City Centre will be considered further and reported to a future meeting of the Cabinet Highways Committee.

#### Building community support and influencing attitudes

- 4.40 A city-wide 'hearts and minds' campaign would be developed to harness the prevailing view that average speeds in some of our residential areas are too high, with the ultimate objective of establishing 20mph as the maximum acceptable speed in residential areas. Officers have reached agreement in principle with colleagues at Newcastle City Council to work in partnership on the development of appropriate education and publicity strategies and will exchange knowledge with colleagues from the other Core Cities.

- 4.41 The Director of Health Improvement has suggested that the Health Inequalities Sub Board has a role to play in highlighting the long-term health benefits that can accrue from an improvement in the perception of the safety of the city's roads.

- 4.42 The support of Community Assemblies will be crucial in communicating the reasons why the Council wants to take this course and to build local appreciation, acceptance and compliance.

#### Evaluation

- 4.43 Speed data would be collected on certain roads within each prospective 20mph area against which changes can be measured.

- 4.44 The council has a statutory duty to collate and report on collision data. Over time (a *minimum* of three years) this will begin to identify any changes in the collision rate following the setting of a 20mph speed limit.

- 4.45 Vehicle speeds and the public's views of the Stradbroke scheme will continue to be monitored as an indicator of the long-term affect and perception of 20mph limits.

- 4.46 Road Safety Education, Training and Publicity officers would propose to work in partnership with specialists at Sheffield University and the Health Improvement Sub Board to evaluate the impact of city-wide education and publicity initiatives on the attitudes of Sheffield's motoring community.

- 4.47 The Department for Transport is currently developing an economic tool to help assess the costs and benefits of any proposed 20mph schemes.

#### Summary

- 4.48 Drivers' ability to move freely must be balanced with their responsibility to travel at appropriate speeds. On many residential roads the appropriate maximum speed is 20mph.

- 4.49 The proposal to introduce seven pilot sign-only 20mph schemes will allow time for further evaluation of the enduring speed reduction and safety benefits of schemes implemented elsewhere.
- 4.50 The support of the public is vital. Reducing the speed limit should not be seen as an end in itself, but as part of a continuous process to encourage a change in driver behaviour and attitude. The aim of establishing 20mph as the default appropriate maximum speed in residential areas will only be possible if a critical mass of the drivers convert supportive sentiments into actions.
- 4.51 Education and publicity around the benefits of lower vehicle speeds in residential areas should not only centre on the area of a new 20mph speed limit but be part of a broader, city-wide effort. Setting sign-only 20mph speed limits can only be recommended if accompanied by a Corporate commitment and the ongoing financial resources to institute a programme of education and publicity work aimed at redefining the motorist relationship with the residential roads of Sheffield.

#### Financial Implications

- 4.52 The cost of each 20mph area will depend on the length of road covered, the number of access points and whether any supplementary physical traffic calming measures are to be included. As a guide, the Stradbroke 20mph speed limit scheme cost approximately £40,000 (including consultation, the TRO advertisement and design, but not including the cost of future maintenance which is estimated to be £1900 per year at current values, equivalent to a 25 year commuted sum of £40,000. No additional traffic calming features were used). The cost of advertising Traffic Regulation Orders can be minimised by advertising a number of schemes at the same time.
- 4.53 It is proposed that seven 20mph speed limit areas, one per Community Assembly area, be funded from the 2012-13 and 2013-14 Local Transport Plan settlement. Physical traffic calming measures are not proposed at this stage. Funding for the associated ongoing future maintenance costs is still to be determined.
- 4.54 An additional, ongoing resource of £10,000 per annum is required to fund both city-wide education and publicity work, and more targeted work in areas where new 20mph schemes are being launched.
- 4.55 Funding for further schemes has not been identified. It is unlikely that 20mph limit schemes would attract funding from the Accident Saving Schemes block of the LTP.

#### Other Relevant Implications

- 4.56 An Equality Impact Assessment has been conducted and concludes that safer roads and reduced numbers of accidents involving traffic and pedestrians will fundamentally be positive for all local people regardless of

age, sex, race, faith, disability, sexuality, etc. However, the most vulnerable members of society (i.e. the young, elderly, disabled and carers) will particularly benefit from this initiative. No negative equality impacts have been identified.

## **5.0 ALTERNATIVE OPTIONS CONSIDERED**

- 5.1 The policy of introducing area-wide 20mph schemes without physical traffic calming measures has already been established. The Council could adopt the same blanket implementation strategy adopted in Portsmouth, and latterly Newcastle. However it is felt that at present the benefits have not been sufficiently demonstrated to justify this approach.

## **6.0 REASONS FOR RECOMMENDATIONS**

- 6.1 Reducing the speed of traffic in residential areas would, in the long term reduce the number and severity of accidents, reduce the fear of accidents, encourage sustainable modes of travel and contribute towards the creation of a more pleasant, cohesive environment. Currently, there is insufficient evidence of the benefits of 20mph speed limits to justify the level of investment required for a city wide roll out. It is therefore proposed to progress 20mph limits on a staged basis, associated with schools in close liaison with the Community Assemblies.

## **7.0 RECOMMENDATIONS**

- 7.1 Endorse the long-term objective of establishing 20mph as the maximum reasonable speed in appropriate residential areas of Sheffield.
- 7.2 Endorse the strategy for the introduction of 20mph speed limits in appropriate residential areas on a staged basis as described in this report.
- 7.3 Approve the prioritisation of further 20mph speed limit areas by a city-wide comparison of the number and severity of accidents.
- 7.4 Officers assist any Community Assembly that wishes to pursue the introduction of a 20mph speed limit in keeping with the principles established in this strategy.
- 7.5 Identify resources to enable officers to deliver an ongoing city-wide programme of education and publicity in partnership with other local authorities, agencies and pressure groups around the benefits to society of lower vehicle speeds in residential areas.

Simon Green  
Executive Director, Place

8<sup>th</sup> March 2012

# APPENDIX A

## Case Studies

Portsmouth, Warrington and Newcastle have produced or commissioned studies to evaluate the impact of the 20mph speed limits introduced by those authorities.

### Portsmouth

Portsmouth is the first authority to introduce extensive city-wide 20mph speed limits in its residential areas. Their introduction was accompanied by a great deal of community engagement. The Department for Transport commissioned Atkins Transport Planning & Management to conduct a follow-up 'interim' study which draws on two years of post-implementation data (The accident analysis uses three years 'before' and two years 'after' data, with data averaged to provide comparative one year baseline periods):

- The total number of collisions resulting in an injury has fallen from 164 per annum to 130 per annum in the two years since implementation when compared to the previous three year (a reduction of 21%)
- The number of casualties resulting from those collisions has fallen by 22% from 183 per annum to 142

Collisions have fallen by 14% nationally in comparable areas over the same period. Therefore, of the 34 collisions per annum that no longer occur, 12 could be attributed to the new 20mph speed limits, although no allowance has been made for any other contributory factor.

Sheffield and Portsmouth are very different cities, both in size and street layout. Portsmouth, which is located on a tightly compacted peninsula, introduced its 20mph limits to all its residential areas in one go, 94% of its total network. The whole city could be divided into six 20-limit sectors, each largely consisting of terraced housing on grids of narrow roads. Most roads already had average speeds of less or equal to 24mph before the new limit was introduced. Approximately 80% of roads which have 20mph applied already had a self-enforcing maximum 'reasonable' speed of 20mph.

Sheffield has nearly three times the population as Portsmouth and the city is more sprawling. We would be introducing 20mph areas on a staged basis. There are far more roads that are unsuited to a 20mph speed limit without having been traditionally traffic calmed in Sheffield than in Portsmouth (with its tight Victorian street layout), and those are the roads where the majority of collisions, and the more severe collisions generally occur.

This blanket approach is more likely to produce positive results as the accompanying publicity and promotion can be pitched to give the scheme a much higher profile: drivers know the residential limit is 20mph. The interim report notes that publicity using community engagement and the media is pivotal if public acceptance and support is to be gained.

## Warrington

In February 2009 Warrington established three pilot 20mph speed limit areas (140 roads in total) for an experimental 18 month period at a cost of £118,000 (including monitoring). (Warrington has previously introduced short lengths of 20mph speed limits in the vicinity of 11 schools. These short sections proved to have little or no impact on traffic speeds.)

Monitoring of speeds was conducted in four stages:

Stage	Reason
'Before' (Pre Feb 2009)	To establish baseline speed data
After three months	To measure any immediate changes in behaviour due to the change in environment and significant level of publicity.
After nine to ten months (in conjunction with increased police enforcement and events run by the Road Safety team, the fire service and the police)	To understand if any initial reductions had been sustained and whether further changes would result from the threat of enforcement.
July 2010 (immediately before the end of the experimental period)	To establish whether any changes in road user behaviour were still evident after a significant period of limited supporting activity to the 20mph speed limits.

The average speed of the three areas was 24.9mph before the trials began and 23.5mph by the end of the trials, a fall of 1.4mph.

By the end of the trial, average speeds remained above 24mph at five of the ten speed-check sites (24mph being the speed above which the Department of Transport recommends the use of traditional traffic calming measures to achieve a self-enforcing 20mph limit). Average speeds reduced to below 24mph at two sites. The remaining three sites already had average speeds of below 24mph before the trial began.

The first three stages of speed measurements in each trial area identified reductions in average speeds. However there was an upturn in speeds at each of the sites by the end of the trial period, possibly due to complacency through familiarity.

It is likely that the speed readings taken during enforcement action were unrepresentative and that the final upturn is simply a settlement return to realistic speeds without police presence. The final sets of readings were on average still lower than those taken before trial.

## Vehicle collisions

There were 40 'slight' and 'serious' reported injury accidents during the study period, compared to 53.7 during the 18 month period prior to the start of the experiment (a reduction of 25%). *(Please note that the accident statistics have been adjusted to reflect authority-wide trends over the evaluation period.)*

The evaluation report produced by Warrington Borough Council acknowledges that the two 18 month periods give insufficient time for the results of a comparison of accident data to be considered statistically reliable. For instance, the overwhelming majority of the reduction in collisions (11.2) occurred in one area, Orford, with little change in the other two areas. It is possible that this is a statistical anomaly and not directly attributable to the effects of the lower speed limit.

## Public perceptions

Residents' opinions were sought before, during and after the trials.

- 50% of respondents feel that signed-only 20mph speed limits do not work. 59% believe that [traditional] traffic calming measures are needed
- 75% of respondents felt that police enforcement is a necessity to gain compliance from motorists;
- 77% of respondents wanted to see the 20mph speed limit be made permanent in their area;
- Responses were divided approximately equally as to whether there would be a positive effect on driver behaviour if all residential roads were made 20mph;
- 73% said they would not be encouraged to walk or cycle any more than they already do if 20mph speed limits became permanent; and
- Overall, positive support for 20mph speed limits continued throughout the survey stages, although by the final survey stage *many more people felt that additional measures such as traffic calming and/or police enforcement would be required to maintain the benefits.*

## **Newcastle**

In 2007 Newcastle introduced eight 20mph speed limit areas for a trial period to gauge the effects of 'sign-only' schemes. (At that time Government guidance specified that 20mph speed limits must be accompanied by traditional traffic calming features and so the new limits were 'advisory' (i.e. not enforceable) rather than mandatory, and indicated by green and white signs rather than red and white speed limit signs.)

Average speeds were found to have reduced from 25.1mph to 24mph. (There were five accidents during the year of the trial compared to 18 over the previous three years but, as a report of Newcastle's Executive Director of Environment and Regeneration made clear, no inference can be drawn from such limited data. No allowance was made for national accident reduction trends but this is perhaps reasonable given the low numbers involved.)



By November 2008 Government guidance had changed to allow mandatory 20mph speed limits to be set in residential areas where speeds were already low (below 24mph).

Having considered the results in the trial areas the Council decided to make the advisory speed limits mandatory (change the traffic signs and introduce the appropriate Traffic Regulation Order) and embark on a programme to lower the speed limit in all residential areas (excluding bus routes and principal roads). This was prioritised by the number of accidents in those areas, and covered 3,438 "neighbourhood streets", 90% of all roads in Newcastle, at an estimated cost of £1.4million. The work was largely funded from a public investment dividend from the sale of Newcastle Airport. The programme was completed in December 2011. In 2006 it had been estimated that it would have cost in the region of £5million to introduce these speed limits with the traditional traffic calming measures formerly required by the DfT.

Northumbria Police did not object to the new speed limit but expect them to be self enforcing. They will only target areas of particular concern where the Council has shown that there is a problem with speeding but they expect the Council to follow up with traditional calming measures on any roads where average speeds remain above the limit.

As each area has been completed officers in Newcastle have found that the public tend to request additional repeater signs and road markings. They strongly suggest that more of a feature be made of each entry point to a 20mph area, more than a simple '20' sign and a road marking. This would have increased the cost of the Newcastle scheme.

Newcastle did not consult residents on the introduction of the speed limits beyond the TRO advertisement process. There was no major advertising campaign, with a minimal allocation of £5,000 having been set aside for publicity before and during implementation. This will be the next step, a major, ongoing hearts and minds campaign with the message that 20mph is now the maximum appropriate speed in residential areas. Officers recognise that the 20mph limits are "Not a quick fix!", but part of a long-term process to alter attitudes. The introduction of City Wide 20mph limits was generally welcomed by the local media as very innovative and the right thing to do.

# APPENDIX B

## Design Standards for 20mph Speed Limit areas

The standard design package for 20mph speed limits would comprise traffic signs and road markings only. The main features would be:

- a pair of unlit '20' speed limit signs at each entry point
- small 'repeater' signs spaced at regular intervals within the area so that a '20' repeater sign is visible from any point on the road. Wherever possible these will be mounted on lamp posts.
- a Traffic Regulation Order prohibiting stopping on the School Keep Clear markings at schools within a 20mph limit area.

In some circumstances additional measures would be considered:

- An 'enhanced' gateway would be used at entry points that form part of a through-route through a 20mph area. This would include the use of coloured surfacing and a circular '20' road marking and, where appropriate, a tightening of the junction mouth. It is suggested that coloured surfacing should not be used to highlight every entry point as it has become extremely expensive to maintain and, if widely used, would limit the number and extent of schemes that can be delivered, and represent a significant move away from the minimalist approach outlined in the report to Cabinet Highways Committee in July 2010.
- Additional physical calming would be proposed only where considered absolutely necessary; alternatively the road in question could be omitted from the 20mph limit. There will be roads within potential 20mph areas that may require some form of traditional calming to encourage drivers to travel at speeds approaching 20mph. A judgement as to whether those roads are made subject to the 20mph limit would be made on a case-by-case basis in discussion with the local Community Assembly and in reference to the available funding. Physical calming has been used in a number of locations by Portsmouth City Council.
- Measures including part-time 20mph speed limits indicated by variable message signs would be considered outside a school if it is located on a road that is otherwise unsuitable for a 20mph speed limit.