ENVIRONMENT AND ATTRACTIVE CITY SCRUTINY COMMITTEE
26 APRIL 2010

INTRODUCTION OF 20MPH ZONES IN SUNDERLAND TASK AND FINISH GROUP FINAL REPORT

Report of the Traffic Issues Task and Finish Group

STRATEGIC PRIORITIES: SP5: Attractive and Inclusive City
CORPORATE PRIORITIES: CIO1: Delivering Customer Focused Services, CIO4: Improving Partnership Working to Deliver 'One City'.

1. Purpose of Report

1.1 To receive the draft final report on the work of the Committee's Task and Finish Group into the introduction of 20mph zones in the city.

2 Introduction

2.1. The Environment and Attractive City Scrutiny Committee, at its meeting on 18 June 2009, agreed to establish a Task and Finish Group to examine the major traffic issues facing the city.

2.2. As its work proceeded, the Task and Finish Group agreed to focus on the implications of introducing 20mph zones in the city and to report back its findings to the Environment and Attractive City Scrutiny Committee.

2.3. The Task and Finish Group's working method for this piece of work was seen to have the advantage of:

(a) Progressing the investigation more quickly and outside of the confines of the Committee's formal meetings; and

(b) Allowing for greater investigation of the issue by Members.

3. Terms of Reference of the Task and Finish Group

3.1. The terms of reference of the review were to:-

(a) Examine the national and local policy framework relating to the introduction of 20mph zones;

(b) Consider best practice and the experiences of other local authorities; and

(c) Explore proposals for piloting the introduction of 20mph zones in Sunderland.

4. Membership of the Task and Finish Working Group

4.1 The membership of the Group consisted of Councillor Elizabeth Gibson (Chair), Councillor John Kelly and Councillor Peter Wood.

5. Methods of Investigation

5.1 The following methods of investigation were used for the review:

(a) The commissioning of Jacobs Consultants to undertake research into the introduction of 20mph zones and prospective pilot areas. The final report of Jacobs has provided the evidence base for the study;

(b) A site visit to North Tyneside Council to share their experience of introducing 20mph zones;

(c) Evidence from the Police and the Northumbria Safety Initiative on the implications of 20mph zones on road safety and speed management; and

(d) Evidence from Council Officers including representatives from the Engineers, Road Safety and Planning sections.

6 Policy Framework

6.1 Sunderland Local Road Safety Strategy and the Tyne and Wear Local Transport Plan makes specific reference to the benefits of reducing speed as follows:

(a) Ensuring transport systems are safe whilst reducing the incidence and severity of transport-related accidents. The **road safety** strategy specifically refers to a concern for pedestrians in road safety planning;

(b) Maintaining and improving personal **accessibility** and linkages within Tyne and Wear; and

(c) Reducing the adverse **impacts of transport** on our environment

6.2 The Manual for Streets is supportive of lower vehicle speeds in order to encourage a sense of place. The lower speeds are to be achieved through sensitive design rather than unsympathetic vertical traffic calming. Manual for Streets encourages the creation of public realm where people feel secure to meet and interact. The encouragement of a sense of place supports the objective stated in the Community Strategy as The Most Liveable City.

6.3 There is considerable benefit to be gained from relating transport policies and investment to wider policy objectives across the Council; for instance linking transport to wider initiatives for improving housing, health and wellbeing and contributing to the vision of making Sunderland "The Most Liveable" city.

6.4 Sunderland City Council has adopted a Supplementary Planning Guidance note on Urban Design - *Residential Design Guide (2008*) which provides guidance on the quality and layout of future developments across the City. Within this guidance, there is reference to the development of Home Zones – creating shared spaces for all road users without the prevalence of highways infrastructure – road markings, kerbs, signs etc. Many local planning authorities aspire to these standards in modern new developments.

6.5 Meanwhile there is a need to address existing road safety and traffic management in established residential areas. 20mph treatments – zones and limits – can be an effective means of achieving many of the outcomes of Home Zones within established areas of the City.

6.6 Therefore, traffic authorities such as Sunderland City Council may, subject to satisfactory consultation, introduce 20 mph speed limits and 20 mph zones on local roads within their administrative area. These measures need to be considered in the context of wider Network Management Planning for the local authority road network but, in this context, can provide benefits to the authority such as:-

(a) Improved Road Safety;
(b) Enhanced environmental quality and liveability in residential areas;
(c) More sustainable travel behaviours through encouragement of walking, cycling and public transport;
(d) Efficiency gains in operations, for instance making it easier to recruit and retain School Crossing Patrols; and
(e) Opportunities to capture private sector funding contributions as part of the development planning process.

Review of the Options - 20 mph speed limits

6.7 The Department for Transport is nearing completion of a national review of policy on speed limits. This is due to report in March 2010. In the context of this review, DfT state the following;

"Research into signed-only 20 mph speed limits shows that they generally lead to only small reductions in traffic speeds. Signed-only 20 mph speed limits are therefore most appropriate for areas where vehicle speeds are already low. This may for example be on roads that are very narrow, through engineering or on-road car parking. If average speeds are already around 24 mph on a road, introducing a 20 mph speed limit through signing alone, is likely to lead to general compliance with the new speed limit. Early research from the area-wide 20 mph limit in Portsmouth suggests that greater reductions can be achieved through signed only limits where previous average speeds were significantly above 20 mph.

The implementation of 20 mph limits over a larger number of roads should be considered where the conditions are right. Highways authorities are already free to use additional measures in 20 mph limits to achieve compliance, such as some traffic calming measures and vehicle activated signs or speed cameras".

Variable 20 mph limits

6.8 Highway authorities have powers to introduce 20 mph speed limit that apply only at certain times of day. These variable limits may be particularly relevant where for example a school is located on a road that is not suitable for a regular 20 mph zone or limit, for example a major through road.

20 mph zones

6.9 20 mph zones are areas subject to a 20 mph speed limit that is supported by appropriate orders, zone entry signs and if necessary physical measures within the zone to ensure that speeds driven are generally consistent with the 20 mph speed limit.

6.10 20 mph zones are very effective at reducing collisions and injuries. Research has shown that overall average annual accident frequency may fall by around 60%, and the number of accidents involving injury to children may be reduced by up to two-thirds. Zones may also bring further benefits, such as an overall reduction in traffic flow, where research has shown a reduction by over a quarter (Webster and Mackie, 1996), as well as a shift towards more walking and cycling.

6.11 20 mph zones are predominantly used in urban areas, both town centres and residential areas, and in the vicinity of schools. They may also be used around shops, markets, playgrounds and other areas with high pedestrian or cyclist traffic, though they should not include any major through roads. It is generally recommended that they are imposed over an area consisting of several roads.

6.12 There may be cases where a wider area is considered for a 20 mph zone, but contains small individual roads or stretches of road where average speeds are already so low that a signed-only limit would be appropriate to achieve compliance. However, the introduction of 20 mph zones and 20 mph limits bordering immediately on each other should be avoided where possible as this and the signing to indicate this may be confusing for road users. DfT recommends including these roads as part of the zone and use the available lighter touch traffic calming measures, such as overrun areas rather than more substantive engineering measures.

Policy Framework

6.13 The review of the prevailing policy framework reveals a strong basis in legislation and national policy guidance for the adoption of 20mph in residential areas as a key policy within the highway and traffic management planning for Sunderland. Adoption of such a policy would address any residual uncertainty or lack of clarity in the Council's policy framework on this issue. Such a policy would sit well with the overall strategic framework for highways and traffic management in the City, with strong links to strategic implementation plans such as the Speed Management Strategy, the Traffic Management Plan and the Road Safety Strategy.

6.14 It is suggested that the Council consider the adoption of an "*enabling policy*" as the most practical means of ensuring suitable revision to the current policy framework is achieved whilst managing any obligations placed upon the Council to react with local highways expenditure. An enabling policy coupled with a transparent and evidence-based prioritisation framework will also enable the Council to effectively manage public expectations. Meanwhile, an enabling policy can also assist in ensuring cost-effective and timely delivery of projects as part of a city-wide programme.

6.15 Further work will provide a number of possible "enabling" policy statements for further consideration by the Council. For illustration, the following policy statement is provided;

"TS1: The Council may introduce speed reduction and traffic management measures, including 20mph speed limits and 20mph zones, on roads

throughout the City where these contribute to the following outcomes:-

1. *Improving the safety of road-users – especially vulnerable roads users such as pedestrians, cyclists, children, elderly people or people with impaired mobility;*
2. *Improving access to local services and amenities such as shops, schools, community centres, health care facilities and recreational facilities, especially for pedestrians;*

3. *Reducing the incidence of through traffic in order to improve the amenity of residential areas through a reduction in traffic noise, air pollution, or other traffic-related nuisance*

Such measures will be introduced in accordance with wider policies for management of the City's highway network to ensure that the roads network operates coherently and effectively for the movement of people, vehicles and freight. In this regard, particular attention will be paid to the impacts of such measures on pedestrians, public transport, goods vehicles and emergency vehicles".

6.16 Other local authorities have taken similar measures to ensure that 20mph / traffic calming measures are well-founded in the Council's policy framework. As examples:-

North Tyneside Unitary Development Plan (2002-2007) included Policy T10 of UDP stating:

Traffic calming and local safety schemes will be carried out to reduce congestion, pollution and accidents, lessen conflict between vehicles and pedestrians, including people with disabilities and special needs, and improve the local environment.

Also, **South Tyneside Council's Integrated Transport Strategy (2008-11),** states;

One of the overarching strategies of this document is the desire to "Reduce traffic speeds and rat running through residential areas through the implementation of traffic calming, 20mphs zones and Home Zones".

7. Decision Making Framework – Identification of Pilot Areas

7.1 In order to identify and prioritise potential areas in Sunderland for 20mph zones, Jacobs adopted a comprehensive evidence based approach taking into account a broad range of factors. The approach used is summarised below:-

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Planning framework for 20mph in Residential Areas

Is the area under consideration a residential area?	Housing density, population, schools, local shops/services, play areas?
Is there evidence of a road safety problem?	Analysis of accident history, severity, casualties?
Is there evidence of a speeding problem?	Network Analysis of average speeds?
Which roads within the area are suitable for 20mph?	Emergency routes, bus routes, classified roads
What are the characteristics of traffic flow along these streets?	Volume, speeds, vehicle type, destinations?
Is 20mph likely to be acceptable to residents/politicians/public?	Requests to the Council, petitions, consultations
Is 20mph going to be cost effective?	Size of proposed scheme, extent of traffic calming and other measures Coincidence with other measures Coincidence with planned maintenance Coincidence with new developments
Is 20mph going to be self enforcing?	Average speeds before measures 85^{th} percentile speeds before measures Physical measures as part of scheme
Is the project affordable?	What are the likely costs of the scheme? Is core funding (LTP) available? Is there a local ward neighbourhood funding contribution?

7.2 The following sources of data have also been mapped to inform analysis of the potential 20mph zones across residential areas in Sunderland:

Variable	Rational	Data Source
Residential / household density	High household density to identify predominantly residential areas	Census data, Office of National Statistics
Levels of deprivation	High deprivation indices correlate with greater risk of child casualties	Indices of Multiple Deprivation published by Dept of Communities & Local Government
Proximity to schools	Proximity of local schools correlates with prevalence of child casualties. Also encourages greater levels of walk-to-schools	City-wide schools database
Road accident casualties	High incidence of casualties over 5-years gives opportunity for casualty reduction as result of 20mph	Tyne & Wear Traffic & Accident Data Unit at Gateshead Council
Road classification	20mph is more appropriate for local roads / residential streets, hence avoiding classified roads	Roads classification in OS National Land-use Database Sunderland Traffic Management Plan
Bus routes	20mph treatments (especially involving vertical traffic calming) are more deliverable if they avoid core bus routes	Tyne & Wear Joint Transport Statistics Website Nexus

7.3 A four stage approach has been used in order interpret the available data and identify potential areas for 20mph zones:

7.4 **Strategic Overview -** This stage considered evidence covering the whole of the City of Sunderland administrative area. The aim was to understand some of the fundamental geography of Sunderland – residential areas, schools and areas of deprivation – and ensure at the outset that all areas of the City were included for consideration.

7.5 The overview also looked at road traffic accidents throughout the City over a 5-year period (2005-2009). This analysis enabled the study to begin to focus in on areas with proven and persistent road safety problems.

7.6 **Initial Sift** - Is aimed to identify key parts of the city where accident clusters were evident in residential areas. These clusters were considered to be potentially successful applications of 20mph treatments. The initial sift identified 15 areas across Sunderland. The locations and characteristics of these areas are set out in Table 1

7.8 **Refinement -** This stage has looked in greater detail at the characteristics of the 15 areas derived through the Initial Sift. In particular, work has been completed to understand in each area:

(a) the nature of road accident casualties;
(b) the speeds of traffic;
(c) the prevalence of traffic calming features within the areas; and
(d) the level of public expectation / concern relating to traffic speeds

7.9 **Priority Assessment -** An assessment of the respective priorities for 20mph treatments in the 15 areas has been completed with reference to the outcomes of the refinement stage.

Strategic Overview – Findings

Figure 1: Household density and school locations in Sunderland

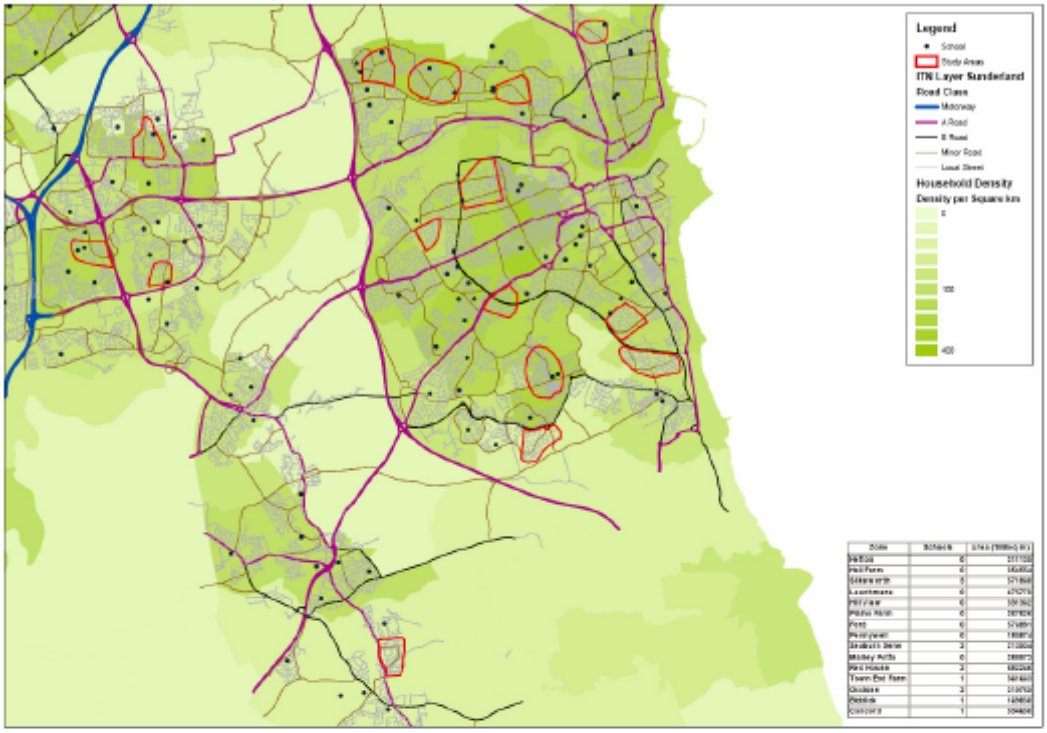
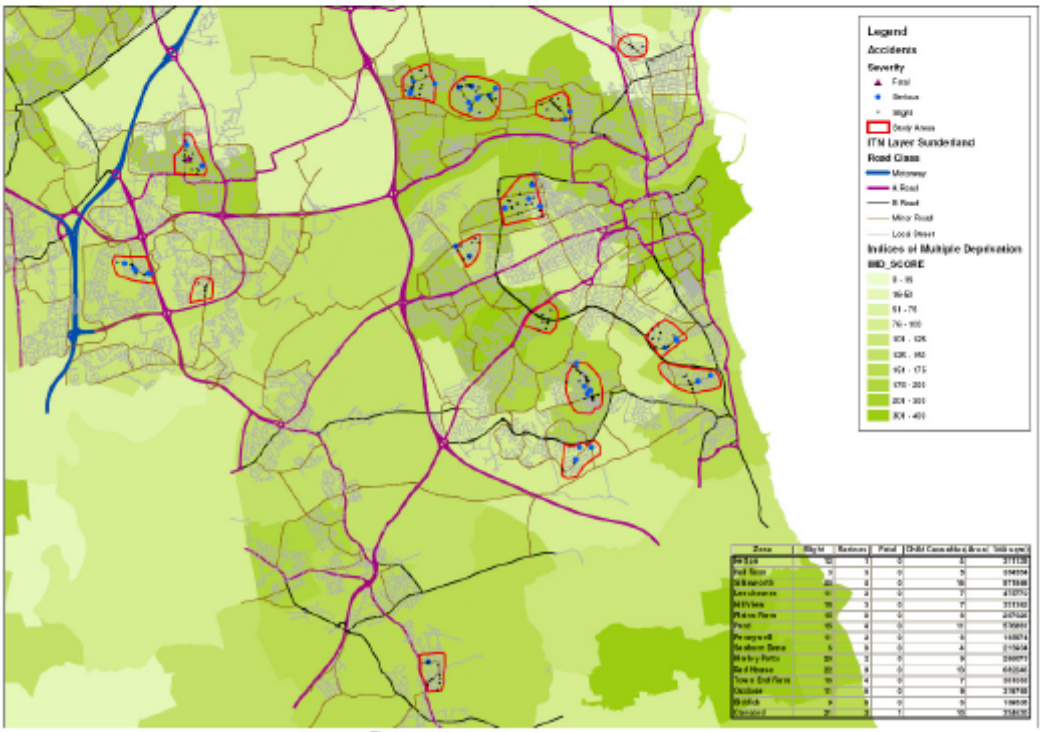


Figure 2: Road accident casualties and the index of multiple deprivation in Sunderland



Initial Sift - Outcomes

7.10 The initial sift identified a set of 15 areas exhibiting the following characteristics:

(a) High density distribution of households confirming their residential nature;
(b) Proximity to schools leading to high exposure to vulnerable (young) road users;
(c) Trend towards higher levels of deprivation (High IMD scores) correlating with increased risk of road accidents; and
(d) Clusters of existing road accident casualties over past 5 years

7.11 Each of these zones is identified graphically in Figure 2, above as an area bounded in red. Summary statistics for each area are as follows:

Table 1: Outcome from the Initial Sift

Area	Area ('000sqm)	5-year casualties - Fatal	5-year casualties - Serious	5-year casualties slight	5-year child casualties	Schools
Hetton	311	0	4	12	6	0
Hall Farm	355	0	5	3	4	0
Silksworth	572	0	16	40	9	3
Leechmere	476	0	7	11	3	0
Hill View	331	0	7	15	6	0
Plains Farm	267	0	6	15	8	0
Ford	577	0	11	15	9	0
Pennywell	186	0	6	11	8	0
Seaburn Dean	214	0	4	6	4	2
Marley Potts	288	0	9	20	12	0
Redhouse	682	0	13	22	8	2
Town End Farm	362	0	7	16	5	1
Oxclose	320	0	6	11	5	2
Biddick	170	0	0	10	5	1
Concord	335	1	2	21	4	1

Road Accident Casualty Analysis

7.12 Comprehensive road accident casualty records have been used to analyse further the nature of each of the road accidents arising within the potential pilot areas over the past 5 years. This information was supplied by the Tyne & Wear Traffic and Accident Data Unit based at Gateshead

Council. It is compiled from analysis of the police records reported following each injury-accident.

7.13 In particular, we wanted to understand which of the accidents involved injuries to Vulnerable Road Users – pedestrians, cyclists, children, elderly people and motorcyclists. Also, the records assist in analysing for which accidents speed of traffic may have been a contributory factor. In these instances it is probable that 20mph treatments have a realistic potential to reduce the severity of injury or to prevent the accident occurring at all.

7.14 Map based analysis, such as below, have been completed for all 19 areas. A summary of the statistics relating to Vulnerable Road Users is presented in Table 2.

Figure 3: Example of Analysis of Vulnerable Road Users

Area	Vulnerable Road Users									Total
	Pedestrians by Age Group				Pedal Cyclists by Age Group				Motor Cycles	Vulnerable
	<16years	16 - 65 yrs	> 65 years	All	<16years	16 - 65 yrs	> 65 years	All		Road users
Hetton	5	1	2	**8**	1	1	0	**2**	1	**11**
Hall Farm	1	0	1	**2**	3	0	0	**3**	0	**5**
Silksworth	4	2	2	**8**	5	4	0	**9**	1	**18**
Leechmere	1	0	0	**1**	2	1	0	**3**	3	**7**
Hill View	4	1	2	**7**	2	0	0	**2**	0	**9**
Plains Farm	6	1	0	**7**	2	0	0	**2**	2	**11**
Ford	4	3	1	**8**	5	1	0	**6**	1	**15**
Pennywell	6	2	0	**8**	2	1	0	**3**	1	**12**
Seaburn Dene	4	0	0	**4**	0	0	0	**0**	1	**5**
Marley Potts	7	2	0	**9**	5	1	0	**6**	4	**19**
Red House	6	0	0	**6**	2	0	0	**2**	3	**11**
Town End Farm	4	1	0	**5**	1	5	0	**6**	3	**14**
Oxclose	5	1	0	**6**	0	2	0	**2**	0	**8**
Biddick	4	2	0	**6**	1	1	1	**3**	1	**10**
Concord	2	4	1	**7**	2	0	0	**2**	5	**14**

Table 2: Exposure of Vulnerable Road Users (Casualties 2005-9)

7.15 As well as considering impacts on Vulnerable Road Users, it is also appropriate to consider the rate of incidence of causalities across the 15 areas. As each of the 15 areas is a different size, we have corrected for the size of each area by expressing this as a casualty rate – casualties per unit area, as below.

Area	Total casualties	Casualties / 1000 sq m
Hetton	16	0.051
Hall Farm	8	0.023
Silksworth	56	0.098
Leechmere	18	0.038
Hill View	22	0.066
Plains Farm	21	0.079
Ford	26	0.045
Pennywell	17	0.091
Seaburn Dene	10	0.047
Marley Potts	29	0.101
Red House	35	0.051
Town End Farm	23	0.064
Oxclose	17	0.053
Biddick	10	0.059
Concord	24	0.072

Table 3: Severity of local accident history – Accidents per unit area

Road Traffic Speeds Analysis

7.16 TrafficMaster data is derived from a range of GPS devices (including SatNav systems) which accurately position vehicles using local roads. Though this information is primarily used for Driver Information and Navigation Systems, it provides a high volume sample of data from which speeds on local roads can be calculated. For some years, the Department for Transport has used this data to monitor the levels of local congestion as part of the Local Transport Planning process. We have used this dataset to derive speed data for the roads within our pilot areas.

7.17 For the successful introduction of 20mph zones, local traffic speeds need to average below 25mph. We have categorised speeds in bands, as follows:-

(a) Below 25mph;
(b) 25mph-30mph;
(c) 30mph-35mph;
(d) 35mph-40mph; and
(e) Above 40mph.

7.18 These banding have been calculated for all 15 areas, and for 3 time periods:

(a) Morning peak period – 7.00 am to 10.00 am;
(b) Inter-peak period – 10.00 am to 4.00 pm; and
(c) Evening Peak period – 4.00 pm to 7.00 pm

Figure 4: Assessment of Road Traffic Speeds using Traffic Master Data

7.19 Figure (3) illustrates the approach and the outcomes for one of the 15 areas. Similar analyses have been completed for all 15 areas for the 3 time periods. To inform the prioritisation assessment, it is important to consider the likelihood that prevailing speeds within each of the 15 areas as such that the 20mph speed limits will be routinely observes by drivers. Enforcement action will only arise, if at all, if speeds routinely exceed 25mph. Hence, we have assessed the proportion of roads within each zones that record an average speed below 25mph, in each of the three time periods.

Table 4: Proportion of road links within the study area with average speeds below enforcement threshold

Area	Proportion road with average speeds below 25mph		
	Morning Peak Period	Inter Peak Period	Evening Peak Period
	7am - 10am	10am-4pm	4pm-7pm
Hetton	100	100	80
Hall Farm	10	20	10
Silksworth	90	100	90
Leechmere	80	80	80
Hill View	60	70	*60*
Plains Farm	80	80	*50*
Ford	50	60	30
Pennywell	*90*	90	90
Seaburn Dene	80	80	80
Marley Potts	90	90	80
Red House	70	80	70
Town End Farm	*30*	50	*30*
Oxclose	50	60	30
Biddick	90	90	80
Concord	40	50	50

Notes: All values rounded to nearest 10%
Values in italics based on smaller sample sizes

Other Prioritisation Criteria

7.20 Further criteria that are relevant to the prioritisation of 20mph zones in Sunderland are;

(a) Proximity to schools;
(b) Likely costs of implementation;
(c) Degree of integration with existing traffic calming; and
(d) Prospects for Public Acceptability

Table 5: Proximity to Schools

Area	Schools
Hetton	0
Hall Farm	0
Silksworth	3
Leechmere	0
Hill View	0
Plains Farm	0
Ford	0
Pennywell	0
Seaburn Dene	2
Marley Potts	0
Red House	2
Town End Farm	1
Oxclose	2
Biddick	1
Concord	1

7.21 Costs of Implementation are difficult to assess with any certainty at this stage, as they will be subject to the nature of specific traffic calming measures planned for each zone. For the purposes of the priority assessment, we have assumed that implementation costs will be proportional to the size of each zone, making allowance for the extent of existing traffic calming within each of the 15 areas, assuming that this is likely to be incorporated into any new scheme. The extent of traffic calming in each area has been assessed through site inspections, and is summarised in Table 6, below.

Table 6: Extend of existing traffic calming in study areas

Area	Existing Traffic Calming within Area	Commentary
Hetton	None	Chicanes and speed cushions in an adjacent area
Hall Farm	None	
Silksworth	Some coverage	Humps along Hawthorn Avenue, also humps in adjacent areas of Lilac Avenue and Redwood Grove
Leechmere	None	
Hill View	Some coverage	Speed cushions on Westheath Avenue
Plains Farm	Extensive coverage	Cushions / humps throughout except Premier Road
Ford	Some coverage	Speed tables at junctions along Fordfield Road, also adjacent to study area along St Lukes Terrace and Front Road
Pennywell	Some coverage	Cushions & build-outs on Portsmouth Road
Seaburn Dene	Some coverage	Humps on Bampton Avenue and Martindale Ave / Hawes Court entrance
Marley Potts	Some coverage	Cushions along Maplewood Avenue
Red House	Some coverage	Humps in Rotherham Road area and also extend out of study area along Ravenswood Road
Town End Farm	None	
Oxclose	None	
Biddick	Some coverage	Speed cushions on Biddick Lane
Concord	Extensive coverage	Except Heworth Road

7.22 Assessment of the prospects for public acceptability has been made through a review of Correspondence and Petitions on record with the City Council. We have recorded any request for traffic calming or representation raising concerns related to traffic speeds within each of the 15 areas. The outcomes of this assessment is summarised in Table 7 below.

Table 7: Written Representations to Council regarding Traffic Speeds / Traffic Calming

Area	No. of requests for Traffic Calming
Hetton	5
Hall Farm	3
Silksworth	9
Leechmere	3
Hill View	7
Plains Farm	9
Ford	5
Pennywell	2
Seaburn Dene	6
Marley Potts	6
Red House	2
Town End Farm	6
Oxclose	4
Biddick	15
Concord	6

7.23 An essential part of the delivery of future traffic calming / 20mph schemes will be Public and Stakeholder Consultation in each of the proposed project areas. Such consultation was impractical at this stage of the planning process. Accordingly, we have used representations to the City Council as an initial indication of prospective public acceptability.

Jacobs has applied the evidence base to compile a set of comparative criteria from the decision-making framework as a basis for identifying priority projects within Sunderland. The considerations for this prioritisation process have been, as follows;

(a) Severity of local accident history;
(b) Exposure of vulnerable road users to accidents;
(c) Likelihood of compliance given traffic speeds;
(d) Proximity to schools;
(e) Likely costs of implementation;
(f) Degree of integration with existing traffic calming; and
(g) Prospects for Public Acceptability.

The metrics used to assess these prioritisation criteria are summarised below;

Criteria	Assessment Metric
Severity of local accident history	Casualties per unit area for each zone of interest
Exposure of vulnerable road users	Incidence of accidents involving children, elderly people, pedestrians, cyclists and motorcyclists
Likelihood of compliance	Proportion of road links within the study area with average speeds below enforcement threshold
Proximity to schools	No of schools per unit area for each zone of interest
Costs of implementation	Initial estimate of scheme costs
Integration with existing traffic calming	On-site survey to assess current traffic calming provision
Public Acceptability	Number of representations to council relating to the zone of interest

Each of the 15 study areas has been ranked against these criteria, in turn, to inform decisions regarding relative priorities. These rankings work in the directions set out in the following table.

Criteria	Direction of Indicator
Severity of local accident history	Highest severity gives highest priority
Exposure of vulnerable road users	Highest exposure gives highest priority
Likelihood of compliance	Greatest likelihood gives highest priority
Proximity to schools	More schools give higher priority
Costs of implementation	Lowest cost gives higher priority
Integration with existing traffic calming	Greater integration gives higher priority
Public Acceptability	Greater acceptability gives higher priority

Priority Rankings for the 15 areas against the assessment criteria are reported in the following table.

	Severity of local accident history	Exposure of vulnerable road users	Likelihood of compliance	Proximity to schools	Costs of implementation	Integration with existing traffic calming	Public Acceptability	*Combined ratings*	Overall Ranking
Hetton	10.5	8	1	11.5	8	13	9.5	61.5	**9**
Hall Farm	15	14.5	15	11.5	10	13	12.5	91.5	**15**
Silksworth	2	2	2	1	11	6.5	2.5	27	**1**
Leechmere	14	13	6.5	11.5	14	13	12.5	84.5	**14**
Hill View	6	11	10	11.5	7	6.5	4	56	**8**
Plains Farm	4	8	9	11.5	2	1.5	2.5	38.5	**3**
Ford	13	3	11	11.5	12	6.5	9.5	66.5	**12**
Pennywell	3	6	3	11.5	3	6.5	14.5	47.5	**6**
Seaburn Dene	12	14.5	6.5	3	4	6.5	6.5	53	**7**
Marley Potts	1	1	4.5	11.5	5	6.5	6.5	36	**2**
Red House	10.5	8	8	3	15	6.5	14.5	65.5	**11**
Town End Farm	7	4.5	14	6	13	13	6.5	64	**10**
Oxclose	9	12	13	3	9	13	11	70	**13**
Biddick	8	10	4.5	6	1	13	1	43.5	**5**
Concord	5	4.5	12	6	6	1.5	6.5	41.5	**4**

Table 8: Assessment of Priority Projects

Note: Where areas share the same characteristics, they are ranked equally with the average of the relevant rankings awarded.
The combined rating is derived by summing the rankings awarded to all criteria
The overall ranking is awarded relative to the values of the combined ratings

7.24 National guidance is published to inform the design and implementation of 20mph zones, ensuring that local approaches are consistent with schemes elsewhere on the nation's road network. The relevant guidance is included in Traffic Signs and General Directions, DfT 2002 and Traffic Advisory Leaflet 09/99, DfT. These documents provide guidance on;

(a) The type and position of necessary road signs;
(b) The nature and position of necessary road markings;
(c) The nature and positioning of speed reduction (traffic calming) features; and
(d) Requirements for illumination of signs.

7.25 Detailed interpretation of guidance is at the discretion of local design engineers and should be undertaken in the context of wider considerations about the nature of the streetscape and its operation including arrangements for parking, pedestrian crossings and public transport especially bus stops, and the overall appearance of the street in terms of materials. Schemes should be design with regard to the approaches included in Manual for Streets, which aims to ensure a more coherent design code for local streets, especially the avoidance of "street-clutter". Such considerations will be informed by factors including costs, public acceptability and potential misinterpretation by road-users. It is advisable that all designs are subject to a formal Safety Audit prior to construction.

Traffic Calming Measures

7.26 Traffic calming involves the installation of specific physical measures to encourage lower traffic speeds. There are many measures available to traffic authorities to help reduce vehicle speeds and ensure compliance with the speed limit in force. Traffic calming measures are required at regular intervals in 20 mph zones and may be used in 20 mph limits.

7.27 A review of 20 mph zone and limit implementation (DfT, 2009) showed that the vast majority of calming measures in use are speed humps, tables, cushions or rumble devices, so called vertical deflections, but highway authorities will want to consider the full set of available measures.

7.28 The Highways (Road Humps) Regulations 1999, The Highways (Traffic Calming) Regulations 1999 and Direction 16 of TSRGD give details of the traffic calming measures that meet the requirements for a 20 mph zone. It is important to consider fully which measures might be appropriate for the specific local requirements. These calming measures range from more substantive engineering measures to lighter touch road surface treatments and include for example:

(a) road humps;
(b) road narrowing measures, including e.g. chicanes, pinch-points or overrun areas,
(c) gateways;
(d) road markings; and
(e) rumble devices.

7.29 The DfT's does not currently advise the use of average speed cameras to enforce 20 mph zones. Transport for London is working with some London boroughs piloting the implementation of some 20mph zones where average speed cameras will play a role in enforcing the speed limit. The evaluation of these pilots will show whether this approach has any benefits over existing measures and whether highway authorities may want to consider whether it is appropriate for their own areas.

7.30 To illustrate the "typical" nature of a 20mph zone designed to comply with the standard guidance, a design template has been provided (see figure 5) below. Jacobs recommends that this is used for illustrative purposes – perhaps as a basis for discussion with stakeholders and as a basis for initial consultation – however the development of schemes within Sunderland should, as a matter of course, refer directly to the publish guidance from Department for Transport as cited previously.

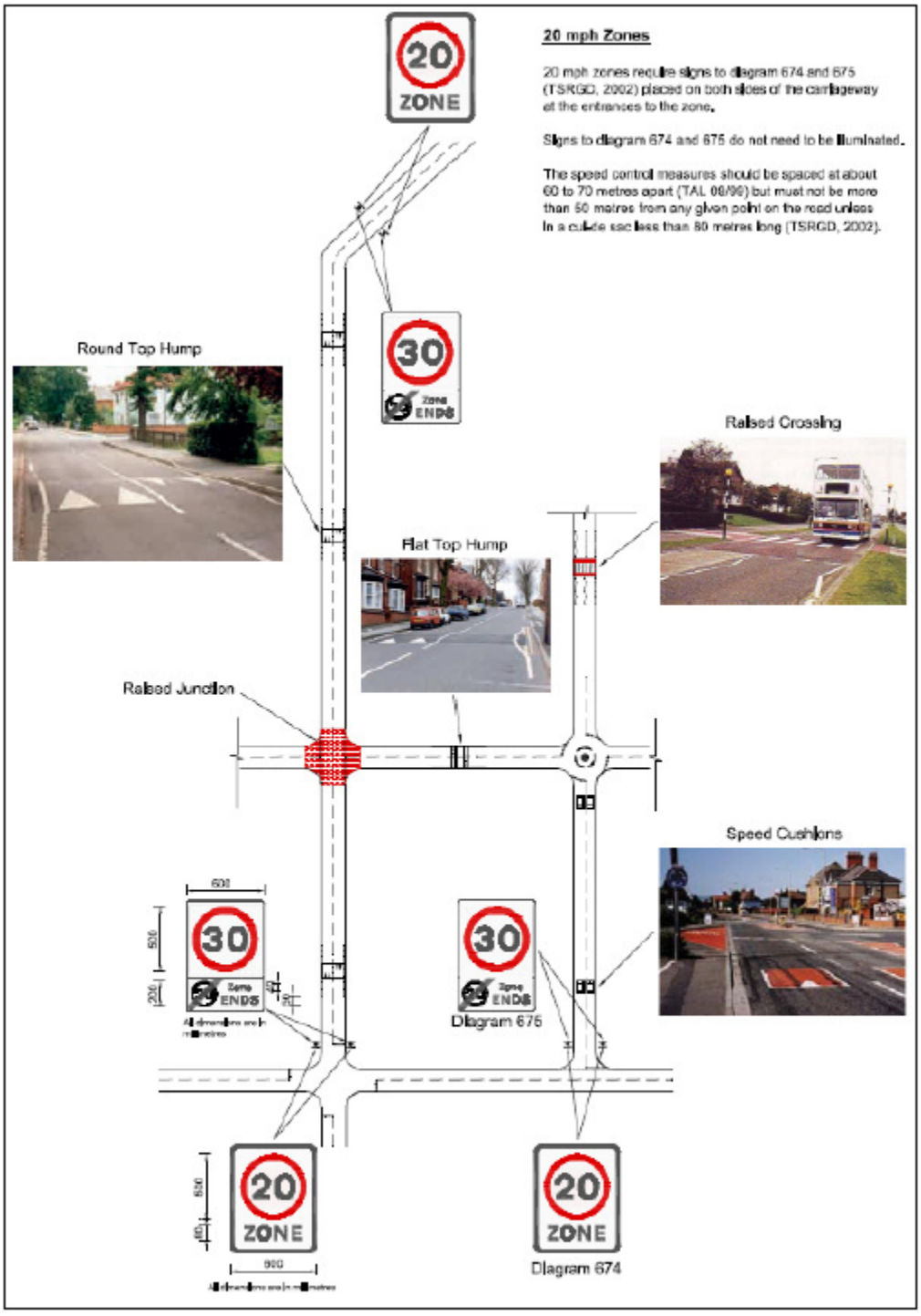


Figure 5: Design template for standard 20mph zone

Making the necessary Legal Orders

8.1 Traffic Regulation Orders are used to solve traffic problems and, in most cases, their effect is to impose a constraint on road users. Examples of such constraints are prohibitions of waiting, speed limits, No Entry etc. – including 20mph speed limits and 20mph zones. These Orders are made by Highway Authorities under the terms of the Road Traffic Regulation, 1984, and regulations exist which govern procedures that must be followed when such an Order is made. There is a need to answer the question "*How long does it take to implement a Traffic Regulation Order?*"

8.2 Unfortunately, it is not possible to give a single answer that will apply to all cases. Although many Traffic Regulation Orders are similar, each one is set in a different context which will determine the length of time of implementation. Indeed unresolved objections to some proposed traffic regulation orders are subject to Public Inquiry procedures. Having to resort to a Public Inquiry to resolve objections will place the timescale outside of the control of the local traffic authority. The authority's delegation scheme may also influence the TRO lifecycle. The following table gives, where appropriate, best and worst case scenarios for each stage of the implementation process.

8.3 The best case and worst case scenarios rarely occur and this, clearly, begs the question "What would be a reasonable timescale for the implementation of a TRO?" It is felt that a time of 30 weeks would, in normal circumstances, be sufficient for the completion of a Traffic Regulation Order.

8.4 It can be seen, from the above, that the time required to implement a TRO can vary substantially from case to case. There are several factors that influence this including:-

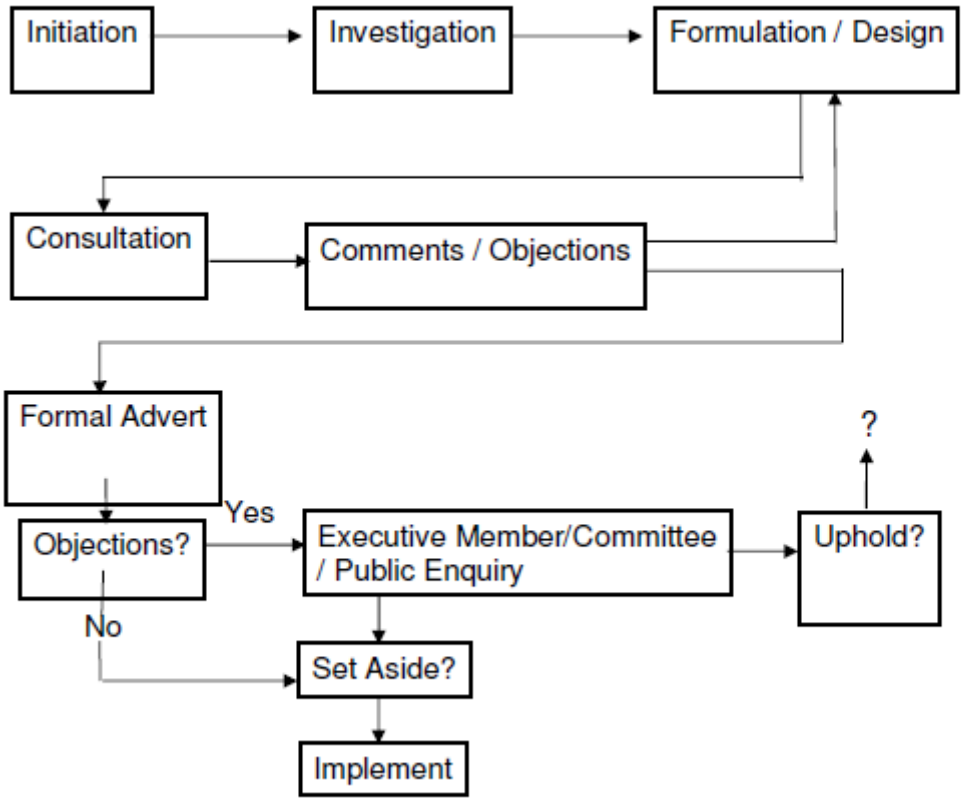
Staff Resources

8.5 Each organisation involved in the making of a TRO must be fully resourced in order to minimise delays. If staff numbers are too low or workload is too high then delays are inevitable.

Objection Handling

8.6 Although there are statutory obligations in the order making process, the detail of how objections are dealt with is determined by the order making authority. It is vital, therefore, that policies are in place that lay down exactly what these procedures should be. Clearly, such policies must satisfy the regulations but they must also be straightforward to operate within reasonable timescales.

Figure 6: Life cycle of a typical Traffic Regulation Order



9. Enforcement

9.1 Appropriate speed limits are one element in this. The Government encourages lower speed limits where these are appropriate in urban areas and in the vicinity of schools, including 20 mph zones. These have proved very successful in reducing collisions and injuries.

9.2 Effective enforcement is also important, including the safety camera programme, where the independent review carried out by University College London and PA Consulting Group and published on 15 June 2004 concluded that the programme reduced the number of people killed or seriously injured at camera sites by 40%, over and above the general downward trend.

9.3 There must also be effective follow-up action on people who break speed limits. But legal penalties are not necessarily the right solution for every offender. Various police forces in the UK have been developing and offering drivers the option of speed awareness courses as an alternative

to formal legal processes. At the national level, the Association of Chief Police Officers in England and Wales plans to work with forces to put in place a national programme of speed awareness courses. These would be offered, as a voluntary alternative to a fixed penalty, to offenders for whom the police felt this was the most productive option. Courses would not be open to offenders who had already been on a course within the previous three years.

9.4 But for other offenders - including repeat offenders who have already been on a speed awareness course - legal action will continue to be the appropriate action. But the level of the penalty needs to fit the crime, and be regarded as doing so, for maintaining public confidence in and respect for the legal process. For the speeding offences which the police and the Crown Prosecution Service (the Crown Office and Procurator Fiscal Service (COPFS) in Scotland) judge to be serious enough to consider a court hearing to be warranted, the system provides a significant degree of flexibility. Magistrates or judges may deal with speeding offenders in a number of ways, according to their judgement of the seriousness of the offence. They may endorse by between three and six penalty points, or disqualify outright, and may additionally fine up to £1,000 (or £2,500 for a motorway offence).

9.5 But the great majority of speeding offences are dealt with through the fixed penalty procedure. Here, the penalty is at present a flat rate of three penalty points and a £60 fine, regardless of the degree of speeding. The figure of three penalty points is determined by the minimum of the range of penalty points specified for the offence in Schedule 2 of the Road Traffic Act Offenders1988. The level of speeds at which speed limits are enforced in England and Wales is an operational matter, at individual police forces' discretion. But the Association of Chief Police Officers *Speed Enforcement Guidelines* suggests the following minimum speeds at which enforcement action is taken, and at which cases should be referred for court action. But the ACPO Guidelines note emphasises that policy is for individual police forces' discretion and that exceptional circumstances may apply to individual cases:

Northumbria Safer Roads Initiative (formerly Northumbria Safety Camera Partnership) states their position to be as follows;

9.6 20mph Zones are expected to be self-enforcing through use of traffic-calming measures. Enforcement action is unlikely as the signing of zones is less than that stipulated in the Highway Code i.e. in the absence of repeater signs road with street lighting are 30mph, leading to unlikely success from any prosecutions. 20mph speed limits are enforceable through the Safer Roads Initiative using appropriate type-approved cameras subject to the following criteria:

(a) All necessary signing – entry / exit signs and repeater signs – is in place;
(b) There is a proven history of road traffic accidents within the speed limit area; and
(c) 85th percentile speeds are at or above the defined national threshold for enforcement (see below).

Speed limit (mph)	ACPO Speed Enforcement Guidelines suggested minimum speed for enforcement action (mph)	ACPO Speed Enforcement Guidelines suggested minimum speed for court proceedings (mph)
20	25	35

10. Performance Reviews

10.1 The Council will wish to monitor the performance of 20mph treatments following implementation. An appropriate monitoring regime will take account of the nature, scale and timing of potential impacts after implementation. For any scheme, the following monitoring arrangements would be informative in both reviewing implemented schemes and in guiding future scheme delivery.

Timescale	Impacts	Monitoring Arrangements
3 months after implementation	Public Acceptability	Review any representations to Council post implementation of scheme Elicit feedback from local Ward committees on impacts and residents views
12 months after implementation	Traffic speeds Traffic flows	Local traffic speed surveys Traffic counts on road within and adjacent to the scheme to assess re-routing effects
3 years after implementation	Accident reductions	Review post implementation accident trends to assess road safety impacts of the scheme

Visit to North Tyneside – Example of Good Practice
On 19 January 2010, the Group visited North Tyneside Council to find out more about their experience of introducing 20mph zones and to tour a number of sites in order to view at first hand the signing and infrastructure in place. The visit was hosted by Paul Fleming (Team Leader, Traffic and Road Safety) and Andrew Flynn (New Development Manager). North Tyneside Council is now in the fourth year of a five year programme to introduce 20mph zones into the city and these are now an integral part of the Council's Road Safety Strategy and Council Plan. It was emphasised that the introduction of 20mph zones should not be seen in isolation but as part of a range of safety measures including education programmes, enforcement and infrastructure works. It was also important to recognise the links with other policy areas including environmental improvements, planning, the encouragement of cycling and walking and safety around schools. The introduction of 20mph zones reflected a proactive approach to speed management and road safety. All new developments and regeneration schemes were being designed to include appropriate safety measures for the introduction of 20mph. With regard to the actual introduction of the 20mph zones, suitable areas were first identified and traffic speed surveys undertaken. If the average speed was 24mph or less then this was considered suitable for a 20mph zone (signs and roundels only). If average speed was above 24mph then traffic calming or other measures such as flashing lights needed to be considered. It was necessary that the schemes were self-enforceable as they will not be enforced by the Police. In terms of consultation, North Tyneside used a standard consultation format, with initial consultation taking place with local ward members and local statutory bodies. The Council had tried to use the minimum engineering solutions compatible with reducing road speeds, with treatments focused on the entrances of estates. This had helped to avoid the extensive use of often unpopular engineering solutions and resulted in less street clutter. The effect of the zones on road speeds are closely monitored and if they were shown to be not having the desired effect then additional engineering works would be considered. However, after survey have shown areas to be largely compliant.

11 Conclusions

11.1 Sunderland City Council, as the Highway Authority, subject to satisfactory consultations and the enactment of appropriate traffic regulation orders, may introduce 20 mph speed limits and zones on local roads within its administrative area. These measures need to be considered in the context of wider Network Management Planning for the local authority road network, but in this context, can provide benefits to the authority, such as:

- Improved Road Safety
- Enhanced environmental quality and liveability in residential areas
- More sustainable travel behaviours through encouragement of walking cycling and public transport.

- Efficiency gains in operations, for instance, making it easier to recruit and retain School Crossing Patrols
- Opportunities to capture private sector funding contributions as part of the development planning process.

11.2 20mph speed limits have to be self enforcing to be successful, as neither the Police nor the Northumbria Safer Roads Initiative have the resources to ensure that low speeds are constantly maintained. Equally the Department of Transport and Home Office guidance is fairly emphatic on the need for them to be self enforcing.

11.3 On most estate roads the average vehicular speeds will be 20mph or just above. However a number of roads will have average speeds above 20mph, which would benefit the community from the speeds being lowered from 30mph to 20mph. Signing alone cannot achieve this. This will inevitably lead to continued problems for residents in those roads as large numbers of drivers continue to drive at higher speeds. Therefore in those instances physical measures to slow the traffic are essential. If the Council determines to roll out a pilot programme of 20 mph zones the measures necessary will therefore vary dependant on local road speeds and public consultations.

11.4 20mph zones and speed limits can play an important role in improving roads safety, whilst contributing to the effective management of urban road networks when they are well integrated into an overall Network Management Plan. National evidence suggests that 20mph can make a meaningful reduction to traffic speeds in the short term, and longer term improvements in road safety.

11.5 The Council should consider adopting an enabling policy as part of its corporate policy framework to signal that 20mph and traffic calming measures are an integral part of its strategic approach to road safety and traffic management. Development of the Council's Local Development Framework Core Strategy provides a good opportunity to adopt such a policy.

11.6 There is strong evidence to suggest that 20mph treatments will be an effective means of improving road safety in residential areas within Sunderland. We have examined 15 prospective areas against a series of criteria and derived a set of priorities as a result. The prioritisation criteria takes account of a range of factors including recorded injury accident history; exposure of vulnerable road users; existing road speeds in an area and the likelihood of compliance to 20mph without physical measures, proximity to schools; cost of implementation; integration with existing traffic calming and perceived pubic acceptability. The Council may

wish to consider further the assessment criteria used and whether it considers additional criteria to be needed.

11.7 The Council should consider developing a small set of pilot projects from within the 15 areas identified in this report. The pilot areas would provide a means of verifying the impacts of 20mph in Sunderland and also in refining the delivery processes. We have set out the likely timescales for development of schemes involving Traffic Regulation Orders. The Council should also make provision for detailed design and formal consultation processes as part of the design phase. Actively engaging residents and stakeholders in the design process will engender buy-in to the schemes and minimise the risk of formal objections to the TRO. One approach would be to develop a clear Communications Plan for the delivery of the programme of schemes.

11.8 The Council should develop arrangements for monitoring schemes both before and after implementation. Local traffic speed surveys are advisable to inform the detailed design process and provide a benchmark for post implementation monitoring. Robust arrangements for monitoring accidents are already in place through the Tyne & Wear Traffic and Accident Data Unit.

11.9 The Council should seek to deliver 20mph treatment through the development planning process by encouraging developers to build these treatments into development plans. The adopted Supplementary Planning Guidance on Urban Design provides a basis for these discussions. We consider that there is an effective hierarchy of approaches that can be discussed with developers – Home Zones, 20 mph Zones, 20mph Speed Limits respectively. Commitment to any of these will be determined by the overall value of the development and any other requirement the Council may place on developers. Each development will need to be handled on a case by- case basis but the Council has some discretion to increase the priority of speed management treatments within these processes.

11.1 Consideration of enforcement issues is important. We recommend further dialogue with the Northumbria Safer Roads Initiative to confirm their policies relating to enforcement of 20mph limits. We consider that this policy has become rather more receptive to enforcement action recently, offering greater potential for 20mph limits as a solution. Nevertheless, it is clear that 20mph limits will only be enforced if there remains a proven history of accidents and speeding after implementation. Given that 20mph zones are effectively self-enforcing, we believe they offer greater certainty of speed reduction and resultant safety benefits at this time relative to 20mph speed limits, admittedly at greater capital costs for implementation of traffic calming.

12 Recommendations

12.1 The Environment and Attractive City Scrutiny Committee's Task and Finish Group have taken evidence from a variety of sources to assist in the formulation of a balanced range of recommendations. The Group's key recommendations are drawn from the findings of the Jacobs report into 20mph zones to the Cabinet are as outlined below:-

(a) That an enabling policy, to signal that 20mph and traffic calming measures are an integral part of its strategic approach to road safety and traffic management, as part of the Local Development Framework Core Strategy be introduced;

(b) That the criteria as suggested by the Jacobs report for assessing 20mph speed limits be adopted;

(c) That consideration be given to developing a set of pilots from within the 15 areas, in order to assess the impact of 20mph zones in Sunderland and to provide an opportunity to refine the delivery process.;

(d) That the development of a Communications Plan for the delivery of the programme of 20 mph schemes be explored;

(e) That arrangements for monitoring schemes both before and after implementation of 20 mph zones be introduced;

(f) That the potential delivery of 20mph schemes through the development planning process through encouraging developers to build these treatments into development plans be explored; and

(g) That further dialogue is undertaken with the Northumbria Safer Roads Initiative to discuss their policies in relation to enforcement of 20mph limits and to explore whether they are receptive to undertaking enforcement action.

11. Acknowledgements

11.1 The Group is grateful to all those who have presented evidence during the course of our review. We would like to place on record our appreciation, in particular of the willingness and co-operation we have received from the below named:-

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Berney Johnson – Former Head of Engineering

Richard Hibbert – Jacobs Consultancy
James Newell – Interim Head of Traffic, Road Safety and Traffic Management
Andrew Jackman – Interim Assistant Head of Traffic, Road Safety and Traffic Management
Ian Pearson –, Principal Engineer, Sunderland City Council
Jeremy Forsberg - Northumbria Road Safety Initiative
Sgt Emmerton – Traffic Division, Northumbria Police
Paul Fleming – Traffic and Road Safety, North Tyneside Council
Andrew Flynn – New Development Manager, North Tyneside Council
Helen Lancaster, Assistant Scrutiny Officer

12. Background Papers

12.1 The following background papers were consulted or referred to in the preparation of this report:

Report of Jacobs Consultants
Agendas of Environment and Attractive City Scrutiny Committee 2009/10

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