

Transport and Environment Committee

10.00am, Tuesday, 27 August 2013

South Central Edinburgh 20mph Limit Pilot Evaluation

Item number	7.3
Report number	
Wards	All

Links

Coalition pledges	
Council outcomes	CO21
Single Outcome Agreement	SO2 and SO4

Mark Turley

Director of Services for Communities

Contact: Steven Murrell, Project Officer, Road Safety

E-mail: steven.murrell@edinburgh.gov.uk | Tel: 0131 469 3699

Executive summary

South Central Edinburgh 20mph Limit Pilot Evaluation

Summary

This report provides an evaluation of the South Central Edinburgh 20mph Limit Pilot (Pilot) project which aims to reduce vehicle speeds through signage and surface markings. The evaluation examines changes to vehicle speeds and volumes, road traffic incidents, and the attitudes of residents to walking, cycling, and the local environment. It also assesses feedback from key stakeholders and resident's travel habits.

Benefits evidenced through the Pilot are lower vehicle speeds, and strong residential support for 20mph limits. Road incident reductions are anticipated due to the reduction in average vehicle speeds.

A strategy is presented for the potential roll-out of 20mph limits to all residential streets, main shopping streets, city centre streets, and streets with high levels of pedestrian and/or cyclist activity. Subject to final approval of the Local Transport Strategy in January 2014, a programme will be implemented to extend 20mph limits to all residential streets, main shopping streets, city centre streets, and streets with high levels of pedestrian and/or cyclist activity.

Recommendations

It is recommended that the Committee:

- 1 notes the positive progress made under the Pilot; and
- 2 approves the draft strategy set out in this report for rolling out 20mph limits to all residential streets, main shopping streets, city centre streets, and streets with high levels of pedestrian and/or cyclist activity.

Measures of success

The Council's Active Travel Action Plan (ATAP) encourages an increase in walking and cycling journeys in the city to a level that meets health and local environment objectives, with slower speed limits being a key factor in encouraging this. Pilot success can be based on a willingness shown by south central residents to undertake more journeys by foot or bicycle.

In 2010 the Council, as part of the [Streets Ahead Road Safety in Edinburgh](#) partnership (involving Police Scotland, Scottish Fire and Rescue Service and NHS Lothian),

developed the Road Safety Plan for Edinburgh to 2020 (RSP) adopting the challenging targets contained in the Scottish Government's Road Safety Framework. The Pilot will be seen as successful if it contributes towards a reduction in vehicle speeds, and importantly an associated reduction in the number and severity of road traffic incidents.

Financial impact

The pilot costs were met from the approved annual Road Safety capital budget, with costs spread across the financial years 2010-13, reflecting the extent of the project. The cost of the pilot is in the order of £213,542, and comprises the following key elements:

- £112,792: signage and surface markings;
- £61,340: staff costs;
- £13,760: attitude surveys (50% funded by the Scottish Government);
- £7,530: vehicle surveys;
- £15,000: consultation costs; and
- £10,000: campaign advertising.

Equalities impact

The Pilot takes into account the road safety needs of all users, notably vulnerable users such as pedestrians, cyclists, young and older people. Due regard has been given to the protected characteristics (Age, Disability and Religion & Belief) through the Pilot, and its associated consultation and design processes.

Sustainability impact

The Pilot encourages a slower and safer environment for journeys to be undertaken by the environmentally friendly modes of walking and cycling, both of which are key target groups within the Road Safety Plan for Edinburgh to 2020, and are the central focus of the Active Travel Active Plan – both plans promote the implementation of 20mph limits.

Consultation and engagement

The Pilot was developed through consultation with Streets Ahead partners, elected members, council officers including Streetscape Working Group and the South Neighbourhood, as well as the following wider stakeholders:

• Lothian Buses	• Local businesses
• Residents	• ctc (Cycle Touring Club)
• The Scottish Government	• Living Streets
• Pupils, teachers and parents from various south central primary schools	• Grange and Prestonfield, & Marchmont and Sciennes Community Councils
• Residents associations i.e. Blacket Association	• Spokes

All stakeholders were engaged through the following consultation stages (outlined in the approved Committee papers detailed in section: *Background Reading/External References*):

- September 2010- report outlining proposals for a large-scale pilot of a 20mph speed limit in residential streets, and the consultation requirements for these proposals. Transport, Infrastructure & Environment Committee recommendation was to proceed with the public consultation for the 20mph pilot.
- November 2010- consultation exercise to reduce the speed limit from 30mph to 20mph with consultation leaflets delivered to up to 11,000 households and businesses, with public exhibitions, and workshops undertaken to obtain views of a wide range of stakeholders and user groups.
- February 2011- report advising the Committee of the consultation exercise results, and seeking approval to commence the statutory procedure to promote the Traffic Regulation Order (TRO) for a 20mph speed limit in south central Edinburgh.
- May 2011- TRO promotion process: erecting statutory notices across all affected streets, as within The Scotsman newspaper, providing notification, and inviting feedback with regards to the speed limit change.
- August 2011- TRO consultation results reported.

- November 2011- report requesting a variation to the TRO to remove short cul-de-sacs and to restrict the speed of vehicles to 20mph on Mayfield Road on the approach to its junction with Ratcliffe Terrace, an area not covered by the original TRO. Both of these changes were to reduce the level of signage, a key concern raised by the public, the Blakett Residential Association and the Grange and Prestonfield Community Council.

Local Councillors have been made aware of the recommendations of this report, with no adverse comment received.

Councillor Rose requested a meeting. This was held on 15 July 2013 to discuss the report findings.

Councillor Main provided feedback, requesting that Greenbank and Braidburn be considered for future 20mph implementation.

Background reading/external references

- Background Paper - Report to the Transport, Infrastructure and Environment Committee 21 September 2010 titled "20mph Speed Limit Pilot in South Edinburgh"
http://www.edinburgh.gov.uk/download/meetings/id/28100/20mph_speed_limit_pilot_in_south_edinburgh
- Background Paper - Report to the Transport, Infrastructure and Environment Committee 8 February 2011 titled "20mph Speed Limit Pilot in South Edinburgh"
http://www.edinburgh.gov.uk/download/meetings/id/31404/item_25
- Background Paper - Report to the Transport, Infrastructure and Environment Committee 2 August 2011 titled "South Edinburgh 20mph Limit Pilot– Response to Traffic Regulation Order Consultation"
http://www.edinburgh.gov.uk/download/meetings/id/32958/item_23-south_edinburgh_20mph_limit_pilot-response_to_traffic_regulation_order_consultation
- Background Paper - Report to the Transport, Infrastructure and Environment Committee 29 November 2011 titled "20mph Speed Limit Pilot in South Edinburgh – Variation to Traffic Regulation Order"
http://www.edinburgh.gov.uk/download/meetings/id/34253/item_30-20mph_speed_limit_pilot_in_south_edinburgh-variation_to_traffic_regulation_order

- Background Paper - Call for comments on revision of DfT's speed limit circular, December 2009 <http://www.dft.gov.uk/pgr/roadsafety/speed-limits/pdf/guidance.pdf>
- Background Paper - DfT Circular 01/2006 Setting Local Speed Limits <http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/dftcircular106/dftcircular106.pdf>
- Background Paper – Transport Research Laboratory, Report 421: The effects of drivers' speed on the frequency of road accidents <http://20splentyforus.org.uk/UsefulReports/TRLReports/trl421SpeedAccidents.pdf>
- Background Paper - Royal Society for the Prevention of Accidents, Inappropriate Speeds <http://www.rospa.com/roadsafety/adviceandinformation/driving/speed/inappropriate-speed.aspx>
- Appendix 1: Speed limits across south central Edinburgh
- Appendix 2: Location of vehicle speed and volume surveys
- Appendix 3: Vehicle speed results
- Appendix 4: Volume changes
- Appendix 5: Resident attitude survey results
- Appendix 6: Representations received

South Central Edinburgh 20mph Limit Pilot Evaluation

1. Background

- 1.1 Based on the Transport, Infrastructure and Environment Committee's decision of 2 November 2011, this report provides an evaluation of the South Central Edinburgh 20mph Limit Pilot project and incorporates representations received.

2. Main report

- 2.1 For a number of years, the Council's Local Transport Strategy (LTS) has aspired to 20mph being the speed limit for residential streets and streets with high levels of pedestrian activity. The development of 20mph limits on such streets is a key element of the LTS and both the Council's Active Travel Action Plan (ATAP), and the Road Safety Plan for Edinburgh to 2020 (RSP). The Council has adopted challenging targets to increase levels of cycling in the city and reduce the number of road traffic incidents. Lowering speeds helps to encourage increased levels of walking and cycling, while reducing the severity of potential incidents.
- 2.2 The Council has implemented many 20mph zones, with physical traffic calming features that now cover approximately 50% of the city's residential streets. These have a proven track record of casualty reduction and are self-enforcing. They are, however, costly to implement and the benefit of casualty reduction is falling relative to the significant levels of expenditure. Such physical traffic calming measures also require additional maintenance expenditure.
- 2.3 With a relaxation of UK traffic calming legislation in 2011, it is now possible to create 20mph zones without solely relying on the use of physical traffic calming features at set intervals. Features that were previously confined to 20mph limit areas, e.g. repeater signs and surface markings, can be incorporated instead. Where speeds or road traffic incidents remain a pressing concern, physical traffic calming measures may continue to be used.

- 2.4 Area-wide 20mph limits were first introduced in residential streets, city-wide, in Portsmouth. Portsmouth's vision was for speeding on residential streets to become as unacceptable as drink driving. Initial results of the Portsmouth scheme were encouraging, with a reduction in average speeds (greatest on roads with the highest 'before' speeds), and indications that casualties have fallen.
- 2.5 Several English local authorities have since followed this approach by implementing 20mph as the default speed limit for residential streets, including Oxford, Bristol, Warrington, Islington, and Hackney. A greater number have made the political commitment to 20mph limits in principle, for example Norwich and Birmingham¹.
- 2.6 With current levels of available funding available to the Council, it would take many more years to introduce physically traffic calmed 20mph zones to all residential areas. Depending on the scale of implementation, however, 20mph limits may be introduced at 1/6th of the cost of traditional 20mph zones. 20mph limits also offer opportunity for street clutter reduction and localised, flexible solutions, to speeding vehicles in residential areas.
- 2.7 Furthermore, the consultation exercises identified a strong wish, within the south central Edinburgh community, for 20mph streets. It is important, however, to assess the contribution 20mph limits make towards reducing speeds, encouraging walking and cycling, creating 'liveable' streets for people and reducing incidents and their severity.
- 2.8 2006 Department for Transport (DfT) guidance suggests that 20mph limits are appropriate for roads where average speeds are already low (below 24mph). The DfT (2009) also encourages highway authorities to introduce 20mph zones or limits into streets which are primarily residential in nature and into town or city streets where pedestrian and cyclist movements are high, such as around schools, shops, markets and playgrounds.
- 2.9 Based on this guidance, and on consultation feedback (notably concerns raised by Lothian Buses and Police Scotland), Committee approved a 20mph limit TRO to cover the majority of south central streets. The following through routes, in addition to a series of short culs-de-sac (for signage reduction purposes), were excluded from the TRO and so remain with a 30mph speed limit:
- The north-south Marchmont Road/Kilgraston Road/Blackford Avenue/West Mains Road/Esslemont Road route; and
 - The east-west Church Hill/Strathearn Road/Grange Road route.

¹ <http://www.20splentyforus.org.uk/>

- 2.10 To enable this, the Council received authorisation through the Scottish Government to implement an area-wide 20mph Limit Pilot across south central Edinburgh. At the request of community and residential groups the authorisation also allowed for a slight reduction in the number of signs used within the Pilot area so minimising the visual impact on conservation and heritage areas.
- 2.11 The scheme was launched on 23 March 2012, via an outdoor public event in the heart of Marchmont comprising representatives from the community (Sciennes and James Gillespie Primary Schools, Grange and Prestonfield Community Council; local ward councillors; and neighbourhood police), as well as Streets Ahead Partners, Road Safety Scotland, Transport Scotland and the local media.

Evaluation

- 2.12 In order to evaluate the scheme, a number of 'before' and 'after' surveys were undertaken to provide a baseline of data against which the scheme was evaluated. The evaluation methods and results are detailed in Appendices 2-6.
- 2.13 **Vehicle speed & volume surveys:** 48 'before' speed surveys were undertaken across a sample of street locations in the pilot area, including streets on the external boundary. Speed surveys were undertaken at the same locations after implementation. Of these, 20 locations remained with a 30mph limit, while 28 locations changed to the new 20mph limit.
- 2.14 For the 28 locations that had their speed limit changed to 20mph, average 'before' speeds were 22.8mph, while 'after' speeds fell to 20.9mph; an average fall of 1.9mph. Speeds after implementation also reduced on the 20 locations that remained with a 30mph limit, though the average fall was only 0.8mph (to 25.4mph), less than the fall witnessed across 20mph limit streets.
- 2.15 There were 12 'before' locations (from the 28 locations reduced to 20mph) where the average speed exceeded 24mph, an average of 25.8mph. The average 'after' speed at the same 12 locations was 22.4mph. An average drop of 3.3mph (see Appendix 4 which clarifies decimal place rounding) on these streets.
- 2.16 Four locations across the pilot saw slight increases in average vehicle speeds from the 'before' to the 'after' survey: Rillbank Crescent from 14.9 to 15.6mph, Causewayside (north end) from 21.1 to 22.3mph, West Mayfield from 21.9 to 22.5mph, and Prestonfield Avenue (south end) from 21.9 to 22.5mph.

- 2.17 Four locations continued to have average speeds at or above 24mph, namely Lauder Road, West Savile Terrace, Oswald Road and East Mayfield, though all four locations saw a drop in vehicle speeds (from 0.7mph on Oswald Road to 3.6mph on East Mayfield). To ensure speeds fall towards 20mph, it is proposed that permanent engineering changes are made to these streets from a suite of options including additional signs and markings, Vehicle Activated Speed (VAS) signs², physical traffic calming measures, or road narrowing, in consultation with local residents and community groups.
- 2.18 In-terms of vehicle volumes, which were measured as part of the speed surveys, there was an overall increase in the number of vehicles on most (34 from the 48 locations measured) 20mph and 30mph streets from the 'before' to the 'after' period. No locations, however, experienced a notable volume increase (or decrease). Due to the overall increase in vehicles on most streets, it is not possible to clearly determine any noticeable displacement of traffic from 20mph roads to 30mph roads (or vice-versa) as a result of the Pilot.
- 2.19 Based on stakeholder representations received throughout the Pilot monitoring period (see Appendix 7), additional speed surveys were undertaken by the Police's Traffic Support Wardens at certain locations experiencing high vehicle speeds as often reported by the public.
- 2.20 For locations where, following the Wardens' presence, speeding traffic remained a pressing concern, additional signs or surface markings were installed. In some instances, it was also arranged for a mobile VAS sign, which flashes up a '20 Slow Down' message to speeding drivers, to be temporarily erected at locations for a period of two-to-three weeks.
- 2.21 The speed surveys have demonstrated that the 20mph speed limit has resulted in an overall positive drop in speeds in the majority of cases. The average speed of vehicles on streets, provided with a 20mph speed limit, has dropped by an average of 1.9mph from 22.8mph to 20.9mph. Although 75% of the surveyed 20mph streets continue to have average vehicle speeds in excess of 20mph, in all streets (except the four locations for further attention) speeds remain lower than 24mph, the DfT threshold recommended for the effective operation of 20mph Limits.

² A Road Safety scheme on Causewayside is proposed (four permanent VAS signs) to compliment the Quality Bike Corridor (Kings Building to George Square), and help address the slight speed increase evidenced at its north end.

- 2.22 **Road incident analysis:** most areas of road safety concern have previously been treated across the Pilot area. Assessing incident reduction as a direct result of the Pilot is restricted, however, as currently there only exists verified incident data covering a nine month period following the Pilot's launch on 23 March 2012. There is limited value in analysing data covering this period, as analysis usually spans a three or five year period. Incident data will therefore be monitored and reported on for the three year period following the launch of the Pilot.
- 2.23 With the modest reductions in average speed experienced in general across the Pilot's streets, it can be expected that the number and severity of collisions will also fall. This is based on evidence³ stemming from a Transport Research Laboratory report identifying that a 1mph reduction in average speeds on urban roads with already low average speeds (akin to the Pilot's streets), results in a 6% reduction in incident frequency. Since the average speeds on 20mph streets fell by nearly 2mph, incident reductions of a higher order can be expected.
- 2.24 The Royal Society for the Prevention of Accidents summarises as follows "higher speeds mean that drivers have less time to identify and react to what is happening around them, and it takes longer for the vehicle to stop. It removes the driver's safety margin and turns near misses into crashes".
- 2.25 **Attitude surveys:** over 1,000 door-to-door household attitude 'before' and 'after' surveys were undertaken across the Pilot, with both surveys being carried out as independent samples.
- 2.26 The main benefits of the Pilot, as viewed by residents, are (in priority order) safety for children walking about the area, safety for children to play in the street, better conditions for walking, less traffic incidents⁴, and better cycling conditions.
- 2.27 Analysis of trends in relation to these benefits show:
- The proportion of children (all school ages) walking to school increased marginally from 63% to 65%.
 - The proportion of older primary school children allowed to play unsupervised outside their home, on the pavement, or in the street rose from 31% to 66% 'after'.
 - When considering how safe their street is for walking and cycling, the majority felt that speeds were safe (78% compared with 71% 'before').

³ TRL report 421, "The effects of drivers' speed on the frequency of road accidents") looked at more than 300 sections of road and more than 2 million observations of vehicle speed. Its overall concluding comment was "The value of restraining speeds in terms of saving unnecessary death and injury is clearly great."

⁴ See Road Incident Analysis

- Respondents consider traffic speeds in the local area as safer for both walking and cycling. For cycling, 18% view it unsafe (compared to 26% 'before'), while for walking 12% viewed it unsafe (17% 'before').
- The proportion of children (all school ages) cycling to school increased from 4% to 12% 'after' survey; with increases notable amongst older primary school age children cycling to school (from 3% to 22%).

2.28 The overall level of support for the 20mph speed limit has increased from 68% 'before' to 79% 'after', while the proportion of respondents strongly supporting the 20mph speed limit increased significantly from 14% 'before' to 37% 'after'. Only 4% were opposed, from 6% 'before'.

2.29 Appendix 5 specifically details the attitude surveys, whilst the table below summarises some important 'before' and 'after' survey findings.

	Before findings	After findings
% of support for the scheme	68%	79%
% of support for the scheme from households with children	83%	94%
% of respondents with children	10%	12%
% of respondents cycling once a month	15%	16%
% of respondents who agreed that traffic speeds affected how safe people felt walking in the local area	32%	24%
% of respondents who agreed that traffic speeds affected how safe people felt cycling	25%	20%
% of people who felt current traffic speeds were about right		
■ On their street	71%	78%
■ On busier roads	50%	68%
% of regular cyclists considering traffic speeds unsafe	51%	21%

2.30 Not reflected in the table is additional information regarding the change in residents' travel behaviour within the Pilot area, for the year period following the launch of the Pilot. The net change (the difference between the overall increase and decrease in mode use) was +7% for journeys by foot, +5% for journeys by bicycle, -3% for journeys by car. This reflects a net increase in levels of walking and cycling within the Pilot, while levels of car use in the Pilot reduced overall.

2.31 There was a change in the makeup of the sample between the before and after survey, with the 'after' sample containing 10% more car owners and 10% fewer people in the 20 to 29 age group. This should not have had a major effect on the outcomes of the survey as reported above. It is likely, however, to have impacted on the reported main and next main modes of residents' travel. For example the percentage of respondents reporting car as their main mode of travel increased from 20% to 25%.

2.32 Collectively, these conditions offer the ingredients to create 'liveable' streets, and help encourage behaviour change through increased active travel in the longer-term.

Future Strategy

- 2.33 On the basis that Committee approves, in principle, the issues outlined in the Local Transport Strategy report (also submitted 27 August 2013), a process will be developed to take forward the recommended action of implementing a programme of extending 20mph limits to all residential streets, main shopping streets, city centre streets, and streets with high levels of pedestrian and/or cyclist activity.
- 2.34 A commitment to a phased roll-out of 20mph limits to all residential streets, main shopping streets, city centre streets, and streets with high levels of pedestrian and/or cyclist activity, will be included in the new draft LTS for its second consultation phase.
- 2.35 It is possible for the Council to apply, through the Scottish Government, to implement 20mph limits on an area wide basis. It is recommended that, following on from the evident success of the Pilot, the Council makes an authorisation request to the Scottish Government to apply 20mph Limits to the type of streets outlined above.
- 2.36 Authorisation will offer the Council the flexibility to continue its 20mph programme, with the application of 20mph speed limits to streets in Edinburgh primarily serving as a means of improving liveability and encouraging more active travel, while contributing to reductions in road collisions and casualties. 20mph limit implementation offers a more time and cost-effective approach, relative to the traditional reliance on 20mph zones with physical traffic calming measures.
- 2.37 It is recommended the Council creates a process to enable the development of a timetable and criteria including:
- i) definition of a strategic city wide 30mph (and above) network, including the routes through the city centre, building on principles in street design guidance;
 - ii) definition of main shopping streets and other areas to be considered for 20mph Limits;
 - iii) streets to be considered for a suite of permanent engineering measures (ie streets with high numbers of road traffic incidents or high traffic volumes or average speeds);

- iv) a rationale/priority order for implementing 20mph limits to these areas; and
- v) seeking approval from the Scottish Government for a citywide 20mph Traffic Regulation Order

2.38 On the basis of Committee approval, the intention would be to report back to Committee detailing resource implications, timetabling and criteria associated with a future roll-out of 20mph limits.

3. Recommendations

3.1 It is recommended that the Committee:-

- 3.1.1 notes the positive progress made under the Pilot; and
- 3.1.2 approves the draft strategy set out in this report for rolling out 20mph limits to all residential streets, main shopping streets, city centre streets, and streets with high levels of pedestrian and/or cyclist activity.

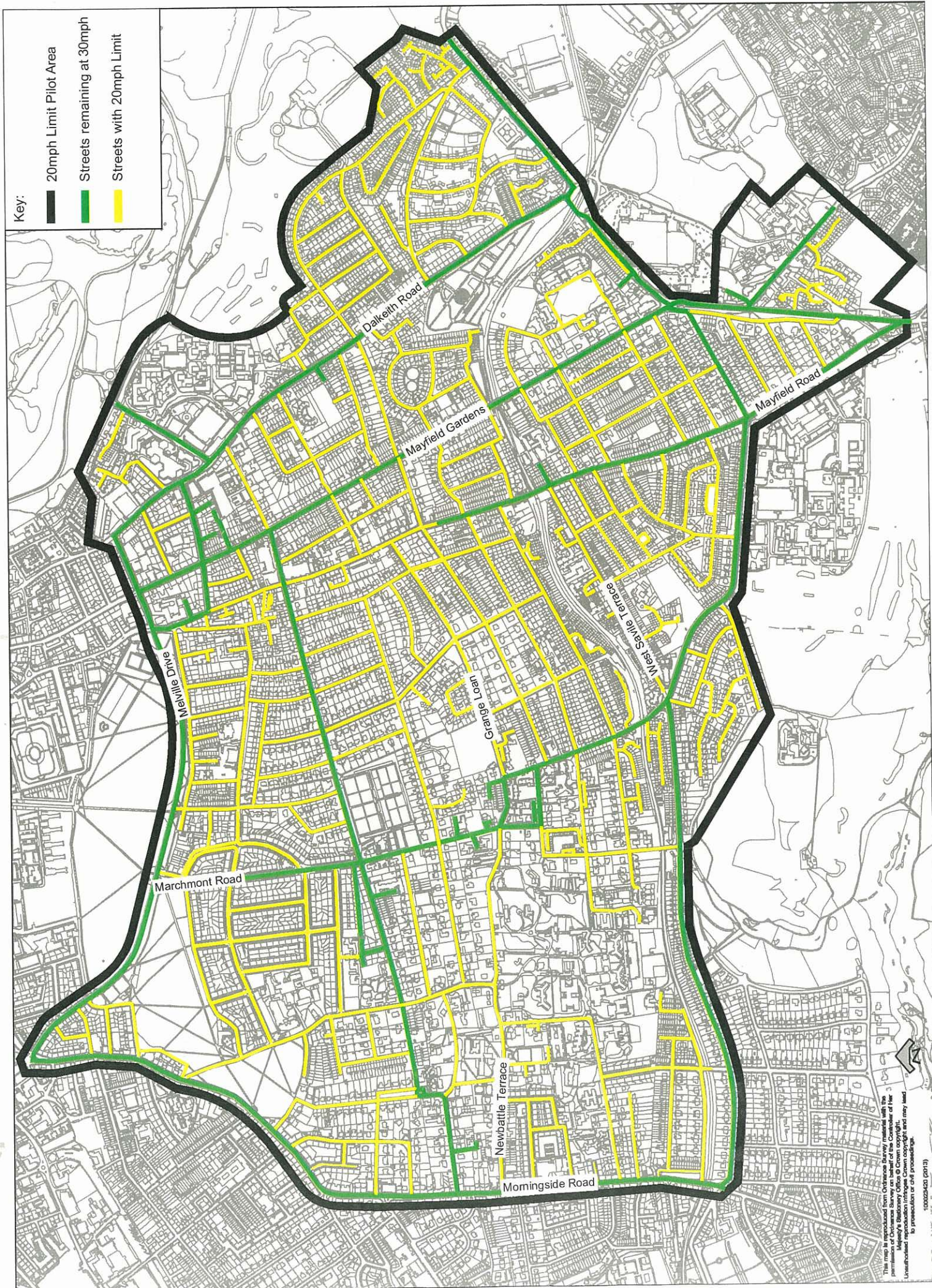
Mark Turley

Director of Services for Communities

Links

Coalition pledges	46 - Consult with a view to extending the current 20mph traffic zones
Council outcomes	CO21 - Safe – Residents, visitors and businesses feel that Edinburgh is a safe city.
Single Outcome Agreement	SO2 - Edinburgh's citizens experience improved health and wellbeing, with reduced inequalities in health. SO4 - Edinburgh's communities are safer and have improved physical and social fabric.
Appendices	Appendix 1 - Speed limits across south central Edinburgh Appendix 2 - Location of vehicle speed and volume surveys Appendix 3 - Vehicle speed results Appendix 4 - Volume changes Appendix 5 - Resident attitude survey results Appendix 6 - Representations received

Appendix 1 - Speed Limits across south central Edinburgh

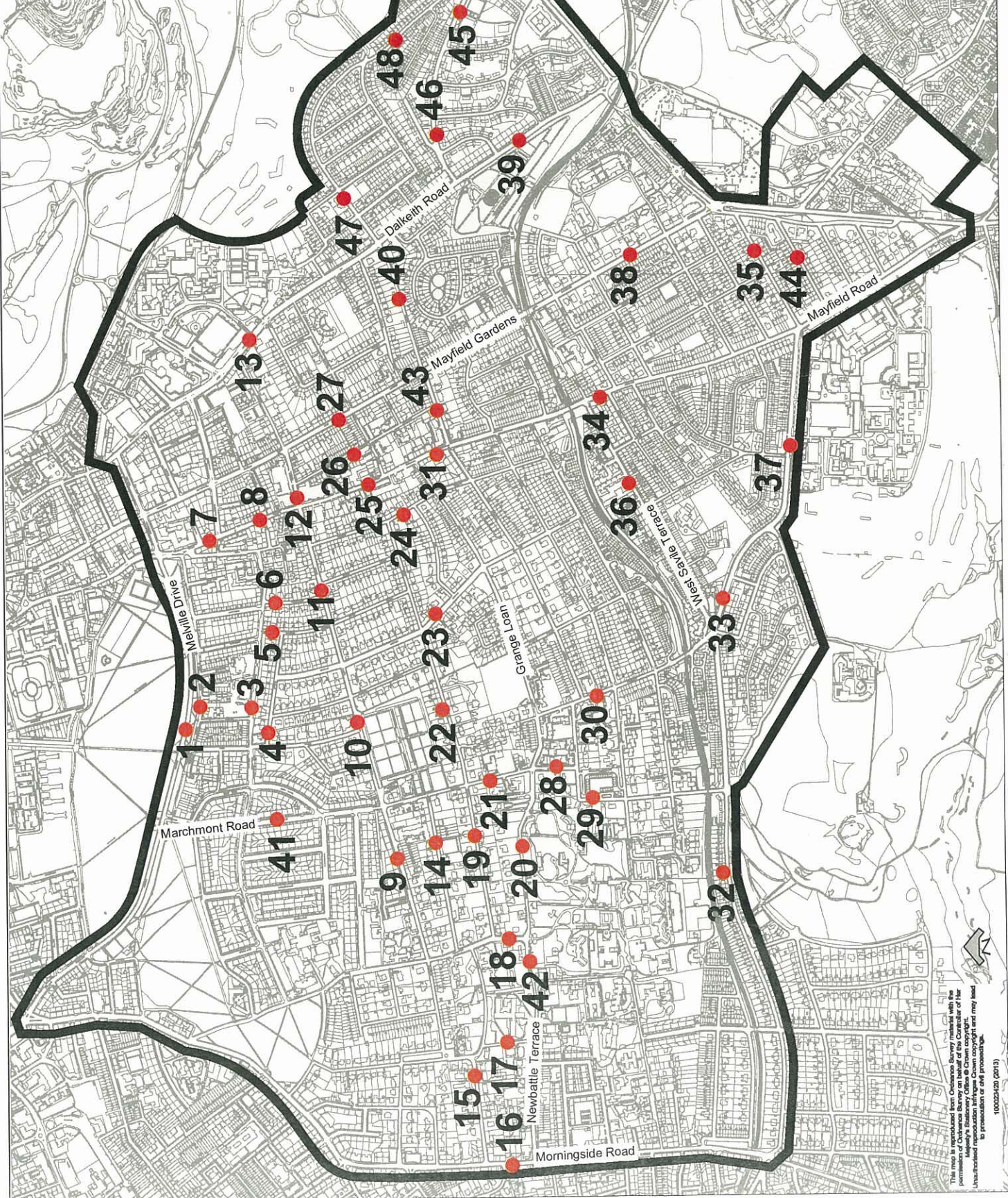


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Appendix 2 - Location of vehicle speed and volume surveys

Notes:

- 01 - Melville Drive
- 02 - Rilbank Crescent
- 03 - Sciennes Road
- 04 - Hatton Place
- 05 - Tantallon Road
- 06 - St Catherine's Place
- 07 - Summerhall
- 08 - Causewayside (North)
- 09 - Strathearn Road
- 10 - Beaufort Road
- 11 - Grange Road
- 12 - Salisbury Place
- 13 - Dalkeith Road (North)
- 14 - Hope Terrace
- 15 - Church Hill Place
- 16 - Morningside Road
- 17 - Pitsligo Road
- 18 - Whitehouse Loan
- 19 - Blackford Road
- 20 - Grange Loan
- 21 - Kilgraston Road (North)
- 22 - Dick Place
- 23 - Lauder Road
- 24 - Findhorn Place
- 25 - Causewayside (South)
- 26 - Upper Gray Street
- 27 - Minto Street
- 28 - Kilgraston Road (South)
- 29 - Oswald Road
- 30 - Blackford Avenue (North)
- 31 - Ratcliffe Terrace
- 32 - Cluny Gardens
- 33 - Blackford Avenue (South)
- 34 - Mayfield Road
- 35 - Esslemont Road
- 36 - West Savile Terrace
- 37 - West Mains Road
- 38 - Craigmillar Park
- 39 - Dalkeith Road (South)
- 40 - East Mayfield
- 41 - Marchmont Road
- 42 - Newbattle Terrace
- 43 - West Mayfield
- 44 - Hallhead Road
- 45 - Prestonfield Avenue (South)
- 46 - Prestonfield Avenue (North)
- 47 - Priestfield Road (North)
- 48 - Priestfield Road (South)



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Appendix 3 – Vehicle Speed Surveys

- 2.1 During May and June 2011 vehicle speed and volume were surveyed across a sample of 48 street locations across the Pilot area, including both 20mph and 30mph streets, to establish 'before' speeds and volumes. This process was repeated again in May and June 2013 at the same locations to establish 'after' speeds and volumes.
- 2.2 20 of the locations surveyed remained with 30mph limits in operation, while 28 locations had their speed limits changed to the new 20mph limit.
- 2.3 For the 20 locations which retained a 30mph speed limit, average 'before' speeds were 26.14mph, while 'after' speeds fell to 25.39mph; a fall of 0.76mph –without any direct intervention to these streets. These are shown below:

Survey locations with limits remaining at 30mph:

Street Name	'Before'	'After'	Change
Melville Drive	26.3	24.3	-2.0
Summerhall Place	23.8	20.4	-3.4
Strathearn Road	24.0	25.9	1.9
Beaufort Road	26.6	28.0	1.4
Grange Road	27.6	27.5	-0.1
Dalkeith Road	26.8	24.8	-2.0
Church Hill Place	26.0	25.7	-0.3
Morningside Road	21.9	22.2	0.3
Kilgraston Road: north	26.75	28.20	1.45
Minto Street	25.9	23.9	-2.0
Kilgraston Road: south	25.0	22.9	-2.1
Blackford Avenue	24.4	26.6	2.2
Cluny Gardens	30.0	26.0	-4.0
Blackford Avenue	23.9	25.6	1.7
Mayfield Road	23.9	24.5	0.6
Esslemont Road	26.10	25.45	-0.65
West Mains Road	28.8	27.4	-1.4
Craigmillar Park	29.4	28.0	-1.4
Dalkeith Road	29.70	25.05	-4.65
Marchmont Rd	26.50	25.75	-0.75
30mph locations: averages	26.14	25.39	-0.76

Notes: combined average speeds for both directions of traffic flow; two decimal places shown in-part to clarify rounding issues

- 2.4 For the 28 locations (shown below) that had their speed limit changed from 30mph to 20mph, average 'before' speeds were 22.8mph, while 'after' speeds fell to 20.9mph; an average fall of 1.9mph.

Survey locations with limits reduced from 30 to 20mph:

Street Name	'Before'	'After'	Change
Rillbank Crescent	14.85	15.60	0.75
Sciennes Road	21.2	19.5	-1.7
Hatton Place	19.8	17.3	-2.5
Tantallon Place	16.80	12.65	-4.15
St Catherines Place	20.2	19.1	-1.1
Causewayside: north	21.1	22.3	1.2
Salisbury Place	19.5	19.1	-0.4
Hope Terrace	19.9	18.7	-1.2
Pitsligo Road	24.4	19.25	-5.15
Whitehouse Loan	25.1	22.1	-3.0
Blackford Road	24.7	23.3	-1.4
Grange Loan	28.0	18.8	-9.2
Dick Place	25.9	22.7	-3.2
Lauder Road	26.5	25.1	-1.4
Findhorn Place	23.0	19.2	-3.8
Causewayside: south	24.1	22.9	-1.2
Upper Gray Street	19.4	19.3	-0.1
Oswald Road	24.7	24.0	-0.7
Ratcliffe Terrace	22.6	22.5	-0.1
West Savile Terrace	27.2	24.7	-2.5
East Mayfield	29.80	26.25	-3.55
Newbattle Terrace	24.5	19.5	-5.0
West Mayfield	21.9	22.2	0.3
Hallhead Road	22.1	21.3	-0.8
Prestonfield Avenue: south	21.5	22.7	1.2
Prestonfield Avenue: north	22.7	22.5	-0.2
Priestfield Road: north	23.6	22.4	-1.2
Priestfield Road: south	24.7	20.7	-4
20mph locations: averages	22.8	20.9	-1.9

Notes: combined average speeds for both directions of traffic flow; two decimal places shown in-part to clarify rounding issues; 'before' surveys for Prestonfield Ave & Priestfield Rd undertaken April 2010

- 2.5 This implies that there has been a general fall in overall speed limits, even on the streets in or around the pilot, where no speed limit changes have been implemented (through routes). The nature of the fall in surveyed speeds identifies that the fall on streets with a new 20mph speed limit, is notably higher (by a ratio of over 2.5:1) than the fall witnessed on the 30mph through routes.

- 2.6 Due to the DfT guidance recommending against the use of 20mph Limits on streets with vehicle speeds at or above 24mph, it is worth examining any changes to vehicle speeds across such streets across the pilot. 12 locations, as shown below, experienced 'before' speeds above 24mph, and were locations where the speed limit was reduced from 30mph to 20mph.

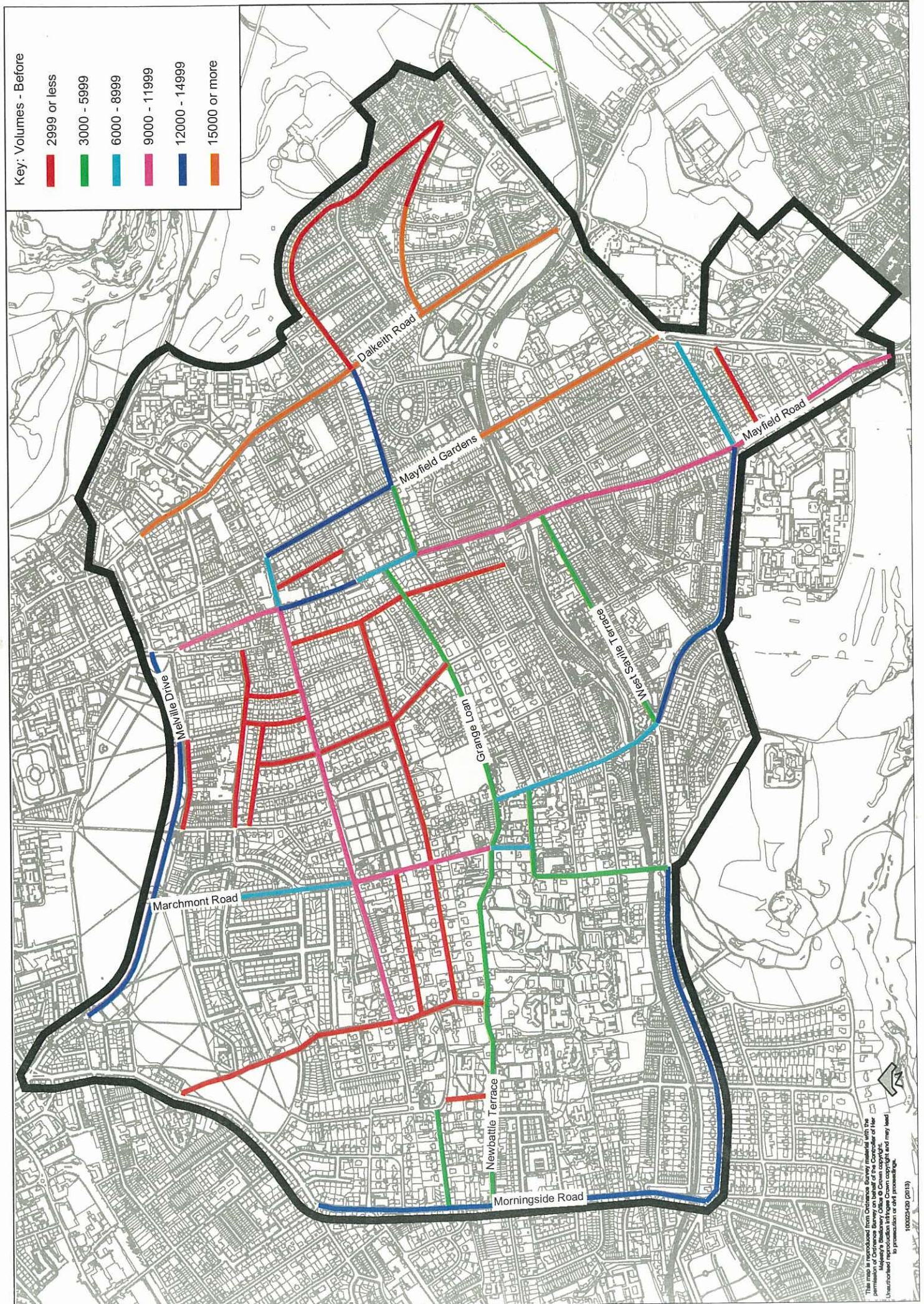
Survey locations with speeds at or above 24mph:

Street Name	'Before'	'After'	Change
Pitsligo Road	24.4	19.25	-5.15
Whitehouse Loan	25.1	22.1	-3.0
Blackford Road	24.7	23.3	-1.4
Grange Loan	28.0	18.8	-9.2
Dick Place	25.9	22.7	-3.2
Lauder Road	26.5	25.1	-1.4
Causewayside: south	24.1	22.9	-1.2
Oswald Road	24.7	24.0	-0.7
West Savile Terrace	27.2	24.7	-2.5
East Mayfield	29.80	26.25	-3.55
Newbattle Terrace	24.5	19.5	-5.0
Priestfield Road: south	24.7	20.7	-4
20mph locations: averages	25.78	22.44	-3.34

Notes: combined average speeds for both directions of traffic flow; two decimal places shown in-part to clarify rounding issues; 'before' survey for Priestfield Rd undertaken April 2010

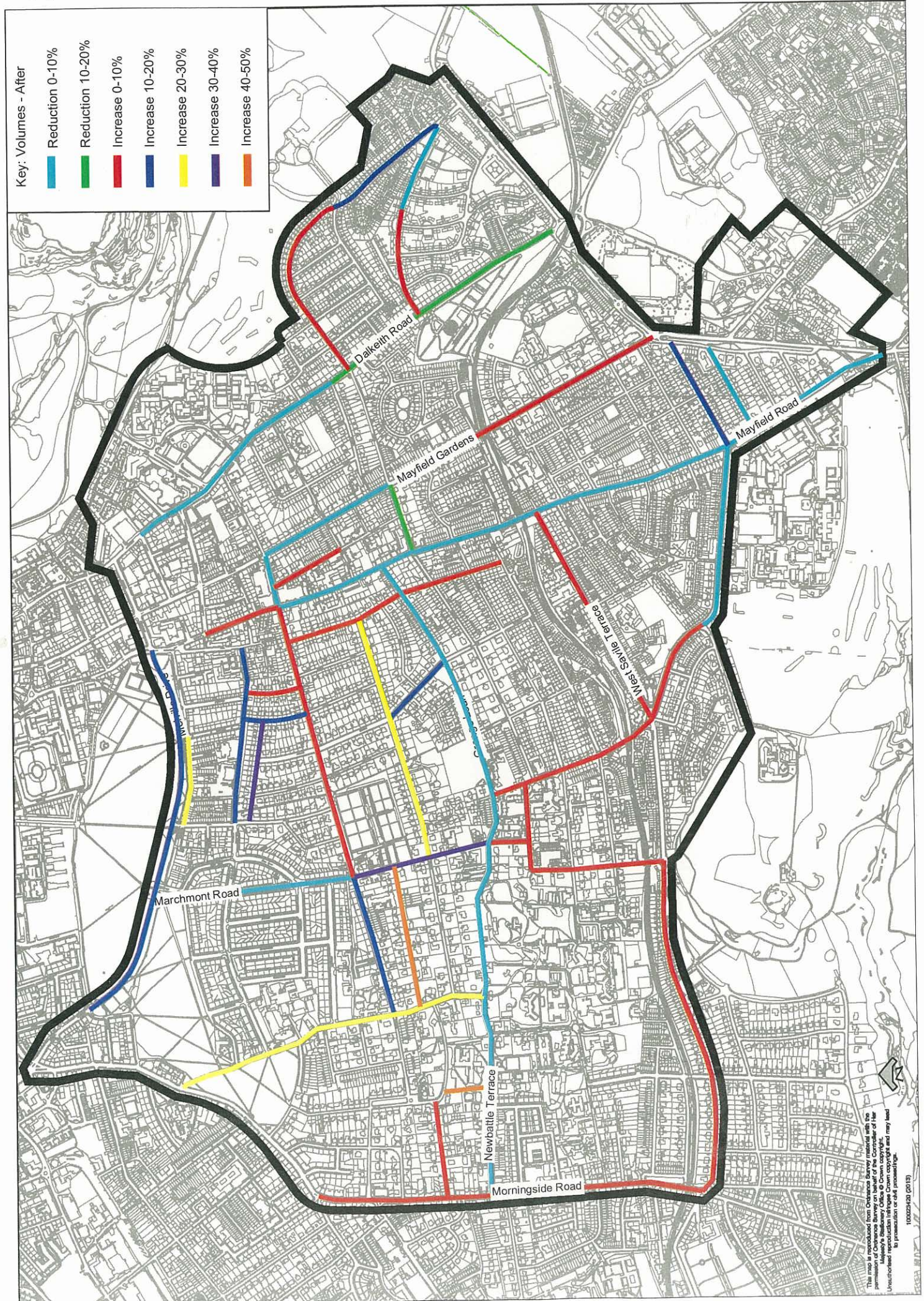
- 2.7 For these 12 locations, the average 'before' speed was 25.8mph, while the average 'after' speed was 22.4mph; a drop on average of 3.4mph. This, as was the case in Portsmouth, signifies a greater drop in speeds on streets which experienced the highest 'before' speeds.
- 2.8 This demonstrates an overall positive drop, taking the majority of speeds below the 24mph DfT threshold for using 20mph Limits. The 'after' surveys identified that four (from 12 'before') locations continued to have average speeds at or above 24mph: namely Lauder Road, West Savile Terrace, Oswald Road and East Mayfield.

Appendix 4 - Volume changes



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Appendix 4 - Volume changes



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Appendix 5 – Residential Household Attitude Surveys

Over 1,000 door-to-door households ‘before’ surveys were undertaken in December 2011 and January 2012, with the same number of ‘after’ surveys repeated in February and March 2013; to establish residents attitudes to the Pilot, to walking and cycling, and to their local environment.

The ‘before’ and ‘after’ surveys were both carried out utilising the same sampling and survey methodology in order to yield survey data upon which behaviour and attitudes can be assessed. The surveys were carried out as independent samples in order to allow for the collation of the same number of interviews across each survey period, providing the same level of robust data for each survey.

It should be noted that for each survey period there is a margin of error associated with the survey data due to the fact that the surveys were completed through a sample of residents and not every single resident living in the survey area. Therefore, there may be variance between the ‘before’ and ‘after’ surveys due to chance being a factor of the change in sample.

Key differences observed in the sample profile of the ‘before’ survey respondents compared to the ‘after’ survey respondents are:

- i) Fewer younger respondents were surveyed in the 20-29 age group (34% in the ‘before’ survey and 24% in the ‘after’ survey);
- ii) Fewer students were surveyed (29% in the ‘before’ survey and 22% in the ‘after’ survey’); and
- iii) More car owners were surveyed (63% did not own a car in the ‘before’ survey and 53% did not own a car in the ‘after’ survey).

The following sections summarise the key significant findings from the ‘before’ survey compared to ‘after’ survey.

Attitudes towards 20mph speed limit

A large majority of respondents (79%) are in support of the 20mph speed limit compared to 4% who oppose. This is a significant increase from 68% of respondents supporting in the ‘before’ survey, and 6% who opposed it. Importantly, respondents were significantly more likely to strongly support (14% ‘before’ and 37% ‘after’).

Households with children are more likely to support the 20mph limit with 94% (83% ‘before’) of households with children in support compared to 77% (67% ‘before’) of households without.

Analysis by street speed limit indicated that respondents who live in the 20mph streets are slightly more likely to be in support (80%, 70% 'before') than those in 30mph streets (72%, 64% 'before'). Additionally, the proportion opposing the speed limit is marginally higher in 20mph streets (5%, 6% 'before') than in 30mph streets (1%, 5% 'before').

Respondents were asked, unprompted, about the benefits of the 20mph speed limit. The main benefits suggested by respondents were regarding safety for children, better conditions for walking, cycling and less accidents. These benefits were also the main benefits that were perceived in the 'before' survey.

In terms of the disadvantages, 8 in 10 respondents said they could not think of any disadvantages of the proposed 20mph speed limit in the 'before' survey. This has risen to 89% in the 'after' survey.

There was an increase in the proportion of respondents stating that they felt that traffic speeds on their street was 'just about right', rising from 71% 'before', to 78% 'after'. The perception of traffic speeds on 'busier roads' being 'just about right', changed more increased from 50% 'before' to 68%.

The 'before' survey indicated that respondents (soon to be) living in 20mph streets were more likely to worry about traffic speeds (34%) than those living in 30mph streets (27%). 'After' surveys indicate that such concerns decreased to 24% and 20% respectively.

Children's Travel and Play

Due to the small number of households interviewed who had children, analysis of questions regarding children's safety although interesting, are not statistically significant.

Just over one in ten respondents (12%) interviewed stated they had at least one child under the age of 16 living in their household (similar to the 'before'). Analysis by proposed street speed limit revealed that more households within the 20mph streets had children in the household (13%) than in 30mph streets (8%).

Fewer respondents cited the benefit of safety for children walking and playing in the street in the 'after' survey than had cited this as a perceived benefit in the 'before' survey (walking: 45% 'before' and 34% 'after'; cycling: 39% 'before' and 29% 'after').

Analysis of trends in relation to travel to school shows some interesting differences compared to the 'before' survey. Most notably:

- The proportion of lower primary school age children walking to school has increased from 58% in the 'before' survey to 74% in the 'after' survey.

- The proportion of older primary school children cycling to school has increased from just 3% in the 'before' survey to 22% in the 'after' survey.
- For all children, there has been a decrease in the use of a car as a method of transport to school (21% in the 'before' survey and 13% in the 'after' survey).

All respondents were asked about their perception of traffic speeds for older primary school children. This increased from 67% to 73% in the 'after'.

There has been an increase in the proportion of older primary school age children who were allowed to play unsupervised outside their home, on the pavement or in the street (rising from 31% 'before' to 66% 'after').

Compared to the 'before' survey, there has been an increase in the perception of safety for older primary school children walking, with the feeling of safety increasing from 67% 'before' to 73% 'after'.

Despite positive changes in behaviour, comparison to the 'before' survey results in relation to factors that influence parents' and guardians' attitudes to children's independent travel and street play indicates that there is now a higher level of concern about all factors (stranger danger, mixing with other children without adult supervision, danger from traffic and pollution from traffic) when compared to the 'before' survey.

Attitudes towards traffic speeds for walking and cycling

The majority of respondents considered traffic speeds for walking (up to 86% from 81%) and cycling (up to 74% from 65%) very or fairly safe.

Respondents who live in 20mph streets are more likely to consider traffic speeds in the local area to be very or fairly safe for cycling than those who lived in 30mph streets (75% in 20mph streets compared to 69% in 30mph streets).

The proportion of respondents feeling that traffic speeds were unsafe for cycling has decreased from 26% 'before' to 18% 'after', with 12% in the 'after' considering traffic speeds unsafe for walking (17% 'before').

When asked about perceptions of safety for cycling, cyclists and non cyclists indicated higher levels for feelings of safety in the 'after' survey (77% for regular, and 75% for non or infrequent cyclists) compared to the 'before' (52% for regular, and 67% non or infrequent cyclists).

Respondents living in 20mph streets are significantly more likely to consider traffic speeds to be safe for walking (76%) and cycling (50%) than in 30mph streets (63% safe for walking and 38% for cycling 'before').

Concern shown by regular cyclists towards traffic speeds has fallen from 65% in the 'before' survey to 46% in the 'after' survey.

Whilst traffic speed remains the main concern of those outlined, in-terms of concern relating to safety for both walking and cycling in the local area, the level of concern has decreased for walking (32% 'before' to 24% 'after') and cycling (25% to 20% 'after'). Traffic volumes are the second greatest level of concern, though again levels of concern fell from the 'before' to the 'after' for both walking (23% to 18%) and cycling (21% to 17%).

Travel Methods and Reasons

Travel by foot remained ('before' and 'after') the most common travel method, while there was an increase in those travelling by foot most often in the local area (from 38% to 44% 'after'). Travel by foot overall, however, went down from 80% to 73% (main & next main mode of travel combined).

Analysis by speed limit indicates that the proportion of respondents living in the 20mph streets travelling by foot has risen from 36% 'before' to 44% 'after'. There has not been a significant change for respondents living in 30mph streets.

Travel by bicycle, as the most common travel method, remained at 9%, though it decreased as main travel mode (6% to 4%), while increasing as the next main mode (3% to 5%).

Travel by car or van, as the most common travel method, increased from 28% to 40%, increasing as both the main mode (20% to 25%) and next main mode (8% to 15%) of travel

When asked about travel over the last year in the local area, there were notably different results to the above in-terms of net increase/decrease by mode of travel. Travel by foot increased 7% (16% increase 'before'), cycling increased 5% (8% increase 'before'), while travel by car or van decreased 3% (2% increase before).

Appendix 6 – Representations Received

Following the launch of the Pilot, a variety of stakeholder representations were been received from residents, Councillors and community representatives. Through Service Requests and other forms of communication, the Council has been aided by local feedback. In many cases this included locations still experiencing issues with speeding vehicles.

Service Request Topics	Number of related enquiries
Scheme rational	2
Statistics underlying the scheme	1
Evaluation measurement methods	1
Scheme costs	4
Alternative methods to the pilot approach	1
Governance of the pilot and its possible roll-out	1
Anticipated impacts on congestion	1
Road traffic incident statistic details	3
Speeding traffic concerns (issues of enforcement were cited in the majority)	1 Cluny Gardens, 3 West Savile Terr, 1 Duncan St, 3 Priestfield Rd, 1 Prestonfield Ave, 1 Lauder Rd, 1 Dick Pl, 1 Blackford Rd, 1 Newbattle Terr, 1 Kilmaurs Rd, 1 Mortonhall Rd, 1 Causewayside/Ratcliffe Terr, 2 West Mayfield, 2 Whitehouse Terrace, 1 Hallhead Rd
Lack of enforcement (specifically)	2
Parking concerns	2
Street clutter concerns	3
No knowledge of the scheme/consultation process	2
Speeding cyclists	1
Difficulties faced by crossing pedestrians	2
Wish to extend the scheme elsewhere	1 Braid Ave, 2 Braid Cres, 1 Braidburn Terr, 1 Greenbank Lane, 1 Corstorphine/Murrayfield
Physical traffic calming enquiry	2
Issues with signage and surface markings	4
Questioning the effectiveness of the scheme	1
Council's efforts regarding 20mph limits/zones	6

Note: topics do not include consultation exercise feedback as detailed in previous TIE reports under *background reading/external references*.

The Council has no powers to enforce speed limits; this has to be undertaken by the police. The wardens offer a high visibility presence, undertake spot-check speed surveys, and issue Community Speed Concern letters to drivers who exceed the 20mph speed limit by 5mph. The wardens allocated a significant amount of resources to assist the Council in monitoring speeds at various locations and times – see the bottom of this Appendix.

The long-term sustainability of such resourcing remains a concern for the Police. A statement received from Lothian and Borders Police (prior to becoming Police Scotland) regarding the Pilot approach reads “*Lothian and*

Borders Police believe the best means of securing long-term reduction in speed is through education, encouragement or physically preventing motorists from speeding through engineering solutions such as speed bumps.

Enforcement is another option, should motorists fail to respond to education or encouragement efforts by all of the agencies involved in the promotion of road safety but should come after alternative effort has been made and proportionate to the other issues that the police service deal with”.

It remains to be seen what the formal stance from Police Scotland will be towards resourcing and enforcement of 20mph Limits.

Police Support Warden Surveys

Street	Date	Average speed (& direction)	Letters issued	Av. letters per visit
Blackett Ave	24/01/2013	21.6 (E) & 21 (W)	10	2
	25/01/2013	19 (E) & 19.7 (W)		
	31/01/2013	18.1 (E) & 18.7 (W)		
	07/02/2013	20.1 (E) & 29 (only ove veh.)		
	07/02/2013	20.1 (E) & 29 (only ove veh.)		
Blackford Road	08/02/2013	n/a & 25.7 (W)		
	04/09/2012	27.8 (S) & 32.7 (N)	13	4
	12/09/2012	20.7 (S) & 22.8 (N)		
Causewayside	02/10/2012	23.5 (E) & 24 (W)		
	23/07/2012	22.1 (direction not given)	100	10
	24/07/2012 AM	21.5 (direction not given)		
	24/07/2012 PM	21.4 (direction not given)		
	19/04/2013	19.7 (N) & 19.5 (S)		
	22/04/2013	21.5 (N) & 21.8 (S)		
	24/04/2013	21.4 (N) & 19.7 (S)		
	26/04/2013	21.2 (N) & 20.6 (S)		
	11/05/2013	22 (N) & 21.7 (S)		
	16/05/2013	20.8 (N) & 21.5 (S)		
	21/05/2013	21.4 (N) & 22.5 (S)		
Clinton Road	29/04/2013 AM	20.4 (E) & 19.4 (W)	11	2
	29/04/2013 PM	n/a & 23.5 (W)		
	30/04/2013	23.4 (E) & 25.8 (W)		
	02/05/2013	22.6 (E) & 30 (W)		
	09/05/2013	20.5 (E) & 18.8 (W)		
Dick Place	21/05/2013	27 (E) & 16 (W)		
	10/09/2012	23.1 (E) & 21 (W)	4	1
	12/09/2012	23 (E) & 19.1 (W)		
	14/09/2012	18.5 (E) & 20.7 (W)		
East Mayfield	02/10/2012	24.1 (E) & 23 (W)		
	14/09/2012	28 (E) & 24 (W)	28	9
	28/09/2012	23.3 (E) & 23.6 (W)		
Findhorn Pl	03/10/2012	20.1 (E) & 20.3 (W)		
	23/07/2012	21.4 (direction not given)		
Kilmaurs Rd	17/09/2012	18.2 (N) & n/a		
	03/10/2012	19.1 (N) & 15.5 (S)		
Lauder Road	11/09/2012	25.1 (N) & 24 (S)	9	5
	28/09/2012	24.7 (N) & 21.1 (S)		
Hallhead Rd	18/02/2013	22 (E) & 21 (W)	2	1
	21/02/2013	15 (E) & 16 (W)		
	22/02/2013	27 (E) & 21.5 (W)		
Mayfield Terr	25/01/2013	19.7 (E) & 22.7 (W)	2	1
	31/01/2013	18 (E) & n/a		
	06/02/2013	19 (E) & 24 (W)		
Mortonhall Rd	08/02/2013	21.3 (E) & 18.3 (W)		
	03/09/2012	23 & 23	52	9
	03/09/2012	22 (E) & 25.4 (W)		
	04/09/2012	23.2 (E) & 31.2 (W)		
	05/09/2012	22.3 (E) & n/a		
Newbattle Terr	17/09/2012	23.5 (E) & 17.5 (W)		
	28/09/2012	22 (E) & 22.5 (W)		
	12/09/2012	23.7 (E) & 21.9 (W)	15	8
	28/09/2012	22.2 (E) & 22.4 (W)		

Oswald Rd	24/07/2012	26.1 (direction not given)	221	11
	25/07/2012	23 (direction not given)		
	26/07/2012	24.6 (direction not given)		
	03/09/2012	21.9 (N) & 27.3 (S)		
	04/09/2012	28.3 (N) & 20.8 (S)		
	17/09/2012	23.8 (N) & 22.5 (S)		
	24/09/2012	25.1 (N) & 22.9 (S)		
	22/02/2013	21.1 (N) & 21.5 (S)		
	28/02/2013	24.6 (N) & 19.3 (S)		
	01/03/2013	20 (N) & 27.1(S)		
	05/03/2013	22.1 (N) & 26 (S)		
	02/04/2013	22 (N) & 21.1 (S)		
	08/04/2013	22.6 (N) & 20.2 (S)		
	23/04/2013	20.1 (N) & 20.7 (S)		
	25/04/2013	19.8 (N) & 20.6 (S)		
	26/04/2013	21.3 (N) & 19.4 (S)		
	07/05/2013	21.5 (N) & 25 (S)		
	11/05/2013	21.4 (N) & 21.6 (S)		
	16/05/2013	20.5 (N) & 21.3 (S)		
	21/05/2013	23 (N) & 19.7 (S)		
Priestfield Rd	23/07/2012	19.9 (direction not given)	62	7
	14/09/2012	23.4 (W) & 21.9 (E)		
	19/09/2012	20.4 (W) & 19 (E)		
	21/02/2013	22 (W) & 20.2 (E)		
	28/02/2013	20.2 (W) & 18.8 (E)		
	01/03/2013	19.7 (W) & 21 (E)		
	08/03/2013	21.1 (W) & 17.3 (E)		
	02/04/2013	19.3 (W) & 21.5 (E)		
	08/04/2013	19.1 (W) & 21.2 (E)		
Ratcliffe Terr	24/07/2012	22.6 (direction not given)	6	6
South Oswald Rd	03/09/2012	19 (E) & 27.9 (W)	27	9
	04/09/2012	19.8 (E) & 24.3 (W)		
	05/09/2012	20 (E) & n/a		
West Mayfield	23/07/2012	20.3 (direction not given)	8	8
West Saville Terr	20/04/2012	26.8 (E) & 25.7 (W)	498	15
	23/04/2012	22.6 (E) & 22.3 (W)		
	24/04/2012	26.2 (E) & 26.9 (W)		
	27/04/2012	25.9 (E) & 24.4 (W)		
	30/04/2012	27.4 (E) & 27.9 (W)		
	01/05/2012	25.8 (E) & 24.3 (W)		
	02/05/2012	22.3 (E) & 22.4 (W)		
	03/05/2012	26.0 (E) & 25.8 (W)		
	23/07/2012	23.6 (direction not given)		
	11/09/2012	25 (E) & 24.5 (W)		
	24/09/2012	26.3 (E) & 22.9 (W)		
	02/10/2012	24.9 (E) & 24.7 (W)		
	24/01/2013	22.5 (E) & 22.4 (W)		
	28/01/2013	20.9 (E) & 23 (W)		
	31/01/2013	26.9 (E) & 23 (W)		
	06/02/2013	19.3 (E) & 25 (W)		
	07/02/2013 AM	24 (E) & 24.5 (W)		
	07/02/2013 PM	22.1 (E) & 22 (W)		
	08/02/2013	21 (E) & 20.3 (W)		
	18/02/2013	22.4 (E) & 22.6 (W)		
	20/02/2013	20.9 (E) & 26 (W)		
	21/02/2013	23 (E) & 23.1 (W)		
	01/03/2013	21 (E) & 19.7 (W)		
	05/03/2013	22 (E) & 24.1 (W)		
	12/03/2013	24 (E) & 23.5 (W)		
	02/04/2013	22.8 (E) & 21.5 (W)		
	03/04/2013	22.1 (E) & 22.3 (W)		
	24/04/2013	23.5 (E) & 22.5 (W)		
	26/04/2013 AM	24.1 (E) & 20.9 (W)		
	26/04/2013 PM	22.6 (E) & 21.9 (W)		
	07/05/2013	23.1 (E) & 22.8 (W)		
	13/05/2013	22.1 (E) & 24.2 (W)		
	21/05/2013	20.1 (W) & 25.2 (E)		
Whitehouse Loan (south end)	10/09/2012	23.5 (N) & 21.8 (S)	23	8
	12/09/2012	21.4 (N) & 24 (S)		
	19/09/2012	24.2 (N) & 24.7 (S)		
Whitehouse Terr	12/09/2012	22.4 (E) & 25.9 (W)	16	8
	19/09/2012	22.9 (E) & 21.3 (W)		

Note: Average mean of 26-28mph, or double figures for warning letters per average visit; Average mean of 24-26mph, or greater than 5 warning letters per average visit; Average mean of <24mph, or 5 or fewer warning letters per average visit