



# **Driver Compliance with 20 MPH Limits in Scotland**

## **A Social Marketing Plan**

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## Executive summary

Mark Ruskell, MSP, commissioned Alan Tapp and Adrian Davis to provide a strategy based on social marketing to maximise driver compliance with nationally rolled out 20mph limits across Scotland. This section summarises our recommended strategy. The main report which follows contains more details for our recommended campaign strategy and alternative strategies. We support our recommendations throughout by explaining the research-based insights on 20mph attitudes and behaviours that informed their development. Cost estimates are provided at the end of the report.

We know from various UK cities' 20mph schemes over the last ten years that signs-only limits, perhaps accompanied by limited local 'soft measures' (typically small scale local PR and local engagement/consultations) will generate an average drop in speed of about 1-1.5 mph (e.g. Portsmouth, signs-only) through to 2.7mph (e.g. Bristol: signs plus city-wide PR and engagement).

However, these and similar roll-outs have not delivered the kind of compliance levels that you have indicated you seek for Scotland (see Appendix 1 for some calculations to support this assertion). We would describe the above (1-3mph drops in speed) changes as incremental, whilst the compliance levels you seek we would describe as step-changes (at least 5mph, and ideally closer to 10mph drops). We contend that the difference between incremental changes and step-changes is vital: it is anticipated that step-changes in compliance could change the culture of the way the people of Scotland use their streets. If car speeds drop to 20mph or below, evidence suggests levels of residential activity (encapsulated by the 'Living Streets' concept) can substantially rise. Another way of putting this culture change is that cars shift from being 'dominant' to being 'guests' on residential roads and busy high streets. This distinction between incremental (within current paradigm) versus step-change (paradigm shift) drops in speeds is an important one to draw in setting up the various options you have and for our recommended approach in this report.

Figure 1 summarises the options available, their likely effect size in speed reductions, and estimates of relative costs and time to implement. These options include the recommended option that we detail in this report – this option is highlighted in bold and red font in Figure 1. We follow the table by summarising this option in more detail.

**Figure 1: Intervention options for driver compliance with 20mph speed limits**

<b>Activity</b>	<b>estimated effect - drop in average speed/mph</b>	<b>likely budget for Scotland – broad estimate</b>	<b>probability of success to achieve cited speed drop</b>	<b>Relative difficulty of implementation</b>	<b>Relative timeframe of delivery</b>
signs only 20mph limits	1.0	£20m*	High	easy	very quick
signs only limits plus very basic local community engagement	1.5	+ £500k	High	easy	12 months
signs only limits plus well organised city-wide engagement	2.7	+ £3m	High	medium	3 years
<b>Limits + engagement + marketing campaign** (see main report)</b>	<b>3 - 5</b>	<b>+ £28m</b>	<b>Medium</b>	<b>easy</b>	<b>10 years</b>
<b>Above + dedicated police enforcement (see West Midlands case study in main report)</b>	<b>5 - 8</b>	<b>+ £14m</b>	<b>High</b>	<b>medium</b>	<b>10 years</b>
Above + changes to driver learning and training	8	+ £10m	high	very hard	10 years
in-vehicle intelligent speed adaptation enforced by legislation	10	Relatively low	very high	very hard	10 years
Average speed cameras SPECS across Scotland 20 Limit areas	10	+ £50m	very high	very hard	10 years

\*based on £1.7m Bristol costs (incl signs, monitoring, TROs), estimated to Scotland via population multiplier of 12.

\*\*note this is social marketing without police enforcement. Doing both together is highly recommended

## Recommended strategy - summary

- Our recommended approach is to combine three strands: targeted enforcement, a population level social marketing 'culture change' campaign, and community level engagement activities. If we can identify the correct strategy, these three strands should act in synergy, reinforcing each other to create powerful behaviour change.
- The social marketing campaign could choose from a small number of key messages (we go into considerable detail in the main report) but our recommendation would seek to build *social disapproval of residential speeding*. We want to make speeding in 20mph limit areas socially unacceptable on the grounds that speeding has created a hostile environment, preventing residents from living what should be a normal, civilised life where they and their children can venture out without anxiety. We are challenging the culture in which speeding on residential roads has become normalised and mostly unchallenged. We are 'calling this out' - re-awakening people to what we hope they would then come to see as a 'daily insanity' of cars dominating how they live their lives in their own locality.
- Public relations will back up this campaign. PR will be vital in countering opposition, and helping create a 'national conversation' - seeking social consensus for changed attitudes and a zero-tolerance policy towards speeding in residential areas and busy high-streets. Local engagement activities, modelled on the successful work done in Bristol and elsewhere, will bring this debate down to local level, consulting and ensuring street by street residential buy-in to the new zero-tolerance. Local engagement could take the form of school based campaigns and education; village and town hall consultations on local roll-out plans. Local activism could also be tacitly or explicitly encouraged - the use of 'pace cars' - pledges to drive below or at the speed limit, community speed watch groups, or even demonstrations locally in support of the culture change.
- But residential buy-in is not a guarantee of driver compliance. Thus, crucially, legal enforcement is required at a high level of visibility. We propose enforcement models based on the successful work done in the West Midlands (see main report for details). This would need to be consistently enforced for a significant period of time (we suspect up to ten years) to permanently change individual driving habits, and embedding a new social culture of driver behaviour.
- Finally, we'd highlight two methods that in the longer term could achieve complete compliance: the use of average speed cameras (SPECS), and in-car intelligent speed adaptation (ISA). The technology for both options is already fully developed and available. SPECS is a realistic option and worthy of consideration now, albeit we imagine the expense would preclude a full roll-out. ISA would likely encounter considerable public and political opposition and we would predict is better left dormant until the appropriate policy window opens up.

## Methodology

To research our work for this report we scoped various sources, in particular our own work on 20mph limits that stretches back to 2011 and includes a number of academic papers, sector reports, and data that includes three national surveys of GB adults for which we commissioned YouGov between 2013 and 2017. We also made use of our significant knowledge and involvement in the City of Bristol implementation of 20mph limits. Finally, we scoped other material from secondary sources paying particular attention to Professional and sector reports including those reporting on the Think!

campaigns for drink-driving and 30mph limits. In pulling together the recommendations we made use of social marketing principles; the psychology of driver behaviour, and the sociology and social psychology of population level culture changes.

### **Other Recommendations**

We'd regard commissioning marketing professionals as essential: a specialist advertising or social marketing agency with national campaign experience and similarly a well-resourced public relations agency. These would require a brief: an example creative brief is provided in the report. We have estimated cost breakdowns within the report, but would estimate £2m pa for 5 years for the kind of communications power you would need.

Whilst social disapproval is our primary recommended communications platform, other message strategies are also important and we discuss these additional options in detail in the main report. Particularly important is the 'social norming' of support, in other words emphasising that there is clear majority support for 20mph limits amongst the population, thereby publicising the popular feeling regarding residential speed limits, allowing supporters the confidence to say 'most people are on our side'. These so-called social norming campaigns have been shown to be effective in fields as diverse as student binge drinking and timely completion of tax returns.

# Main Report

## Nature of the challenge

Driver compliance within 20mph limit areas is very low. Department for Transport 'free flow' statistics quote 84% non-compliance in the UK for 2016. On the face of it, this non-compliance is surprising given the clear, consistent majority support for 20mph limits amongst the public. However, digging below the surface reveals the reasons for this apparent contradiction.

Firstly, psychology. A series of complex psychological traits encourage non-compliance – we discuss these in detail in Appendix 2, but in brief these traits – drivers' beliefs that they are good drivers, they are in control, drivers' bad habits, and their tendency to copy other road users – tend to combine to create a psychological 'force-field of resistance' to simple influence techniques. These traits are key in understanding why 'standard' educational or campaign messages do not work very well<sup>i</sup>. In this report we discuss these problems and suggest solutions.

Second, sociology. There is an implicit social acceptance across Britain and indeed much of the world that speeding is part of everyday life – including on 20mph roads. Social disapproval of *excessive* speeding (perhaps > 30mph in a 20mph limit) may exist but 'everyday' speeding (25 – 30mph) is typically noted without comment, tacitly accepted as – ok, not ideal – but tolerated. 'Everyday' speeding has become normalised. It is this normalisation, this social tolerance of everyday speeding that we particularly concentrate on – making the case that if this can be changed, i.e. if everyday speeding meets with the same levels of social disapproval as drink driving – we will have succeeded in setting the conditions for subsequent driver compliance with 20mph limits.

## Recommended campaign strategy

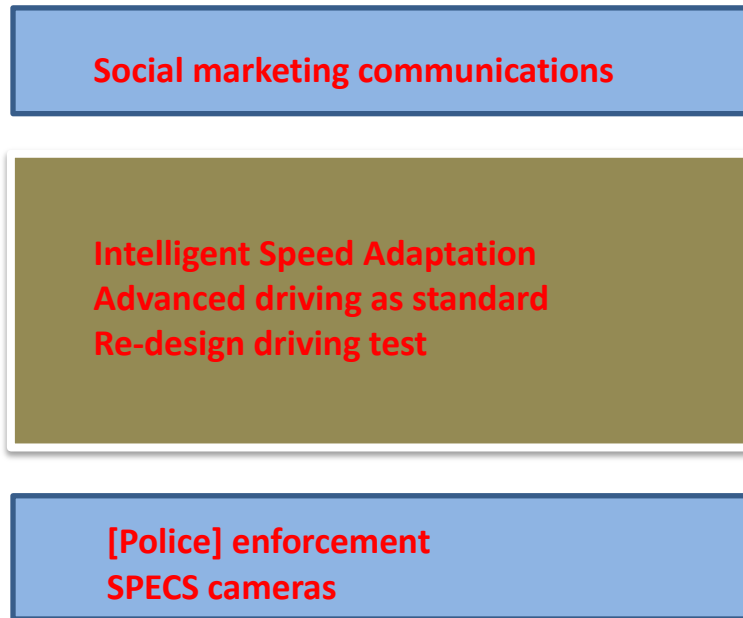
To create a step-change in driver compliance the recommended strategy takes the form of a 'sandwich' of a base layer of enforcement, a top layer of national level social change communications, and a mid layer of local level community engagement and activism.

**Figure 2: Driver compliance with 20mph limits: proposed strategies**



Longer term, while recognising the political challenges, we suggest consideration of potentially radical new policies. In particular we would identify standardisation of in-car Intelligent Speed Adaptation, making changes to the driving test and mandating advanced driving, and the widespread installation of average speed limit SPECS cameras.

**Figure 3: Driver compliance with 20mph limits: proposed longer term strategies**



Let us return to the immediate, and come back to our primary recommendations (Figure 2) that we now discuss in detail.

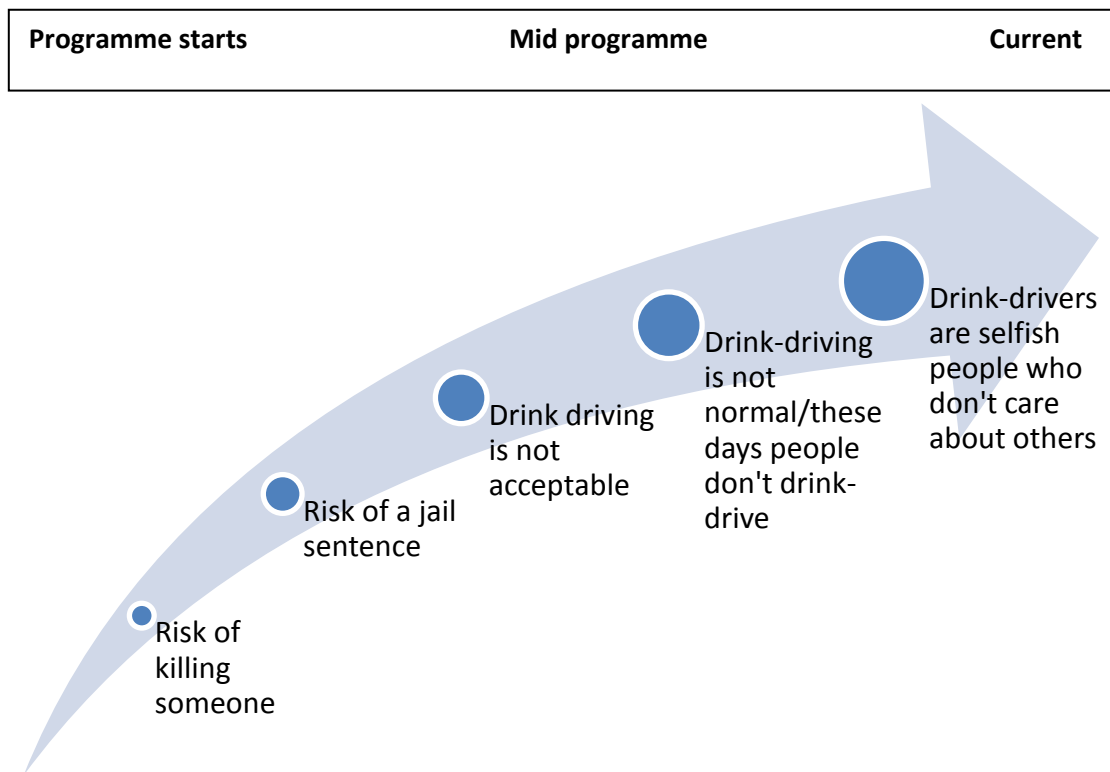
### **Social Marketing Communications**

The recommended strategy centres upon the use of social marketing communications to generate *social disapproval of speeding* in residential areas (and hence *social approval of compliance*). For a variety of reasons we will make clear such a change in attitudes to speeding will *not* change driver behaviour directly. However, public approval of the 20mph 'vision' will create the pre-conditions to support greater enforcement. Thus, in Figure 2 above the 'top layer' (communications campaign) provides 'air-cover' for the foundational 'base layer' (enforcement). Both the campaign and the enforcement will mutually reinforce one another: enforcement will disrupt the current norm of non-compliance - forcing a rethink of driving cultures. Likewise, if the campaign does its job then the enforcement is met with approval - there is public 'permission' to enforce.

Why are we recommending ***social approval of compliance as the key strategy?*** We have carefully examined what has worked (and not worked) in shifting driver behaviour. We started by noting that the most successful behaviour **step-changes that we seek** in driving have emerged from reductions in drink-driving rather than speeding, and this led us to examine drink-drive campaigns in detail and to learn from these. The Think! campaign on drink-driving (Department for Transport) comprised a three-stage campaign in which messages raising awareness of risks were followed by the promotion of the social unacceptability (de-norming) of drink-driving, and finally by a campaign of 'social

identity' change. Thus, **stage 1** - 'drink-driving' can lead you to kill someone (updated to 'drink driving will get you a jail sentence') was followed by **stage 2**: 'drink-driving is not acceptable', (then 'drink-driving is not normal' (these days people don't drink-drive')) and finally by **stage 3**: 'drink-drivers are selfish people who don't care about others' (Figure 4).

**Figure 4: The trajectory of anti-drink drive marketing over 30 years**



Can we adapt the drink-driving lessons to 20mph limit compliance? In some ways speeding is a more difficult challenge than drink-driving: it is strongly embedded as a normative driving practice and a very difficult behaviour to change. However, as 20mph limits are a very recent change to society there is a window of opportunity created by their novelty. Their novelty provides an opportunity to explain the wider benefits, in particular to explain that the consequences of speeding in residential areas go beyond collision risk, and to begin the process of embedding a norm of compliance.

Examining a possible first stage – heightening awareness of risk – we see that traditional speeding campaigns have only had *limited success* in changing behaviour through highlighting risks of *consequences to others*. Indeed, the drink-drive work suggests that risks *to one-self* are more powerful (being caught, losing license, and the public shame of being labelled a drink-driver). Thus, the first recommendation we make is that campaigns for 20mph limits should focus on the **risks to one-self of being caught speeding**. This message must have credibility and thus must be backed with a genuine threat – a form of enforcement. At the moment the risks of speeding centre on the fines and possible loss of license. In tandem with the second stage of the drink-driving campaign, a second



recommendation of the proposed campaign is therefore to **increase the social-risk of being caught** – the public shame of speeding. In Britain, public levels of shame for speeding at present are very low.

Finally, mimicking the last stage of the drink-drive work, we need to **bring social unacceptability from the general (society) to the specific (me)**. A final stage of the campaign is therefore proposed that makes clear that people who choose to speed in 20mph limits are selfish and do not share the values of the majority. The idea is that this will force individuals to confront their behaviour and test it against their self-identity as a ‘good citizen’ whose behaviour lives up to that label. The evidence from Think! is that, unlike the deterrent effect of fines, the deterrent effects of social disapproval are long lasting.

What kind of messages will work in building social unacceptability of speeding? We have learned a great deal about social marketing in the last couple of decades. The most effective messages are based on an insight that taps into an emotional response or insight of some sort. The ban on smoking in public places is a case in point. Whilst hard hitting adverts emphasised how passive smoking can cause cancer, the cosmetic downside of public smoking - messy hair and clothes - led to the legislation going ahead and being welcomed. We suggest that an analogous idea is required in the 20mph sphere. One bold idea would be to **focus not on drivers but on residents**. We could target residents with the message that ‘motorists in your neighbourhood are stopping you living a better life’ and ‘it's time to put people before cars in our streets’.

It is tempting to coalesce this ‘residents lives are affected’ theme around *children*. After all, we know from speeding work that children as a group typically generate the most positive responses from GB adults – and it is a key concern among repeat findings from our YouGov surveys of Great Britain adults. On the other hand there may be a trap inadvertently sprung here: typically drivers tend to accept the message about child vulnerability but mentally excuse their bad behaviour by offering an exchange: ‘ok, we will drive carefully close to schools and then we’re fine to speed up’, hence ignoring the dangers elsewhere. For this reason, if the aim is to encourage compliance throughout a 20mph limit area, we would urge caution in only using children’s welfare as the message.

Creative ideas could be explored that would place speeding on the same platform of social disapproval as smoking in public places, sexism at work, crowd racism at sports grounds, or similar formerly ‘accepted’ but now anti-social or unpleasant behaviours that have now largely been consigned to the past. Another creative platform example might be the idea of “do you belong”. So, ‘as a resident in your own street do you sometimes feel you ‘don’t belong’?’ *‘Why is motor-traffic prioritised – why should ‘they’ take over your street? Cars should be guests’*. Such an idea could then move to the transformative “we should all belong” - a message that promotes the idea of prioritising communities as living spaces where people feel safe, and have a *tangible* sense of belonging.

Finally, we should not forget the importance of brands and slogans. We may be able to learn from existing work in the sector: work done by local authorities and of course third sector campaigners such as 20s Plenty. Slogans and straplines such as *“A little bit slower, a whole lot better”* (Bristol City Council) and *“20s plenty where people live”/ “It’s time for 20”* (20s Plenty) may be appropriate to test in Scotland.

## Support messages

Typically, headline messages would be supported by a platform of other communications. There are a number of possibilities that we will outline here, but which would need to be concept-tested in communications research before deployment.

### Reasons to support 20mph limits

Perhaps the most obvious message platforms would emerge from our own work on 'reasons to support' / 'reasons to oppose' 20mph limits. Messages would centre on bolstering reasons to support, and countering reasons to oppose.

Our YouGov survey work (Figure 5 below) illustrates GB adults and Bristol adults' responses for why they might support 20mph limits. Support at the moment is based on the belief that 20mph limits can help reduce accidents, and to benefit children. The ideas discussed above are aligned to reasons lower down the list - healthier ways of life, quality of life and so on. As can be seen these reasons to support have plenty of scope to be expanded among the population.

**Figure 5: 2017 YouGov Survey of GB and Bristol Adults: Reasons to support 20mph limits**

q7. Here are some reasons people might support 20mph speed limits. Which of these do you agree with? Please tick all that you agree with. 20mph limits will ...

	Bristol 2017	GB 2017	GB 2015	GB 2013
	B	A	B	C
Unweighted base	508	3078	4251	4075
Effective base	448	2783	3845	3829
mean fewer serious accidents on the roads	69%	72%	73%	68%
mean children can play more safely	58%	56%	59%	57%
make our streets more pleasant to live in	41%	41%	41%	40%
reduce noise	34%	30%	31%	31%
encourage more walking and cycling	35%	33%	30%	27%
reduce pollution	28%	23%	22%	21%
improve the quality of life	23%	26%	20%	15%
improve traffic flow	21%	20%	18%	15%
encourage a healthier way of life	17%	16%	15%	14%
reduce congestion	17%	15%	12%	9%

*Note: The table includes additional letters (A, B, C) indicating agreement levels for specific reasons. A callout box highlights that there is a 'Slightly greater appreciation across GB and Bristol since 2013 of "more sophisticated" reasons to support 20mph limits', pointing to the bottom half of the table. The 'lettertogether' logo is visible in the bottom right corner of the table area.*

### Countering opposition

As you know, 20mph limits are politicised and contested within society, and there are organised opponents to be aware of, if small in number. This is a key rationale for employing a PR agency as well as a paid-for communications (advertising) agency. 'Reasons to oppose' 20mph limits are going to be distorted and exaggerated by opponents. This kind of propaganda will need to be countered – the public view on 20mph limits is malleable, and the public grasp of facts to support or oppose may be fragile (see figure 6).

**Figure 6: 2017 YouGov Survey of GB and Bristol Adults: Reasons to oppose 20mph limits**

q8. Here are some reasons people might oppose 20mph speed limits. Which do you agree with? Please tick all that you agree with. 20 mph speed limits will...

	Bristol 2017	GB 2017	GB 2015	GB 2013
	B	A	B	C
Unweighted base	508	3078	4251	4075
Effective base	448	2763	3845	3829
be ignored by many drivers so of limited benefit	58% A	54%	55%	55%
not be policed and enforced effectively	51%	49%	51%	50%
be pointless as many people will ignore them	51% A	46%	48%	47%
make journey times longer	46% A	39%	43%	38%
increase congestion	36%	33%	36% A	35%
increase pollution	28% A	22% BC	19%	19%
make the quality of life worse for local residents	7%	9%	11%	11% A
be too expensive	11% A	8%	9%	10% A
increase accidents	11% A	6%	7% A	7%

But some worrying higher negativity (of GB) within Bristol.

Each point will need counter-messaging:

- “no-one sticks to them so what’s the point” countered by “more and more people are complying”;
- “they increase congestion and hence pollution” countered by “20mph limits help traffic run smoothly and actually reduce congestion”.
- “they are stopping the economy moving” countered by “20mph limits reduce congestion and are good for the economy and our health”;
- “the police won’t enforce the limits” countered by “there’s a new crackdown on speeding by the police – they are serious”.

The ‘front line’ of countering opposing arguments and putting our case forward will be the media, and this is where a professional PR agency will become vital in proactively helping create a narrative that puts compliance with 20mph on the front foot, emphasising the pro-20mph arguments (residents before cars; injury prevention; health and wellbeing; activities, etc) and countering the negatives as above. Regular real-life stories can be sought and written up for media use.

### Social diffusion: the importance of word of mouth

One option for us is to use the model of social diffusion - society consisting of people who influence each other. We have used a variant of social diffusion theory (Geoffrey Moore’s ‘Crossing the Chasm’ model, Figure 7) to illustrate the kind of groups that different people in society might belong to according to their knowledge of the benefits of 20mph limits, and their attitude to these benefits:

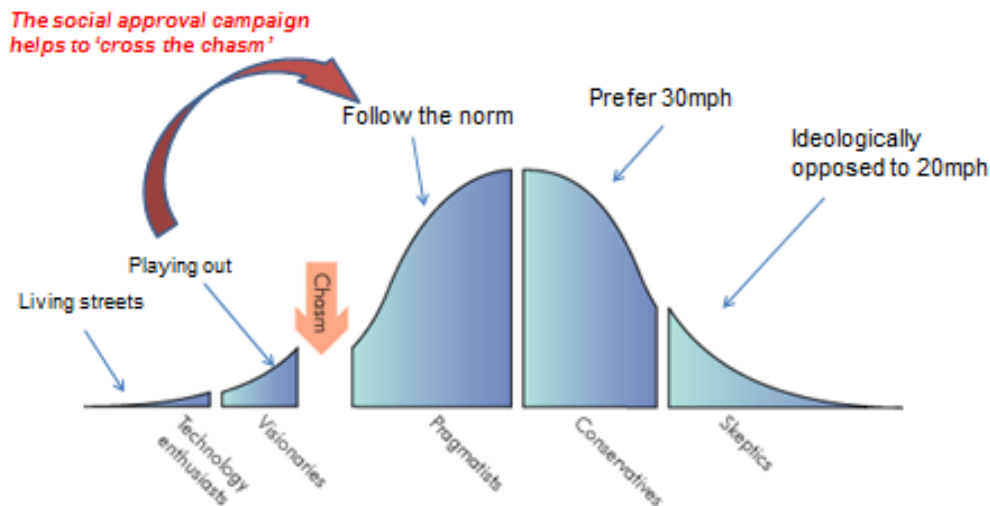
Figure 7: Applying 'Crossing the Chasm' to 20mph limits



***If we get to the pragmatists we reach a societal tipping point...***

Figure 7 illustrates how the 'pragmatists' who have no ideological opposition to 20mph limits or compliance - but no particular feelings of support either - will tend to follow the norm, which as we know is at present primarily non-compliance. The role that a national campaign might have in diffusing the benefits of 20mph limits through society depends on its ability to move beyond its heartland support with organisations such as Playing Out and Living Streets. The campaign needs to 'cross the chasm' to reach the 'pragmatists' - ordinary people who live the kind of mainstream British life that will include car ownership and use, jobs, ferrying their kids around, etc. A social approval campaign can, over time, cross this chasm by engendering a feeling of normality to compliance - *'everybody around me is complying - so I will comply as well'*. Once we start to convert enough drivers to this new behaviour, a 'tipping point' is reached (Figure 8) in which an act of non-compliance would transgress the social norm - non-compliance would be *noticed*, and disapproved of.

Figure 8: The campaign will help 'cross the chasm'



### Social norm marketing

So called 'pluralistic ignorance' is commonplace in 20mph limit discourse amongst the public: while a clear majority of the public consistently support 20mph limits, *they believe that they are in the minority*. Incredibly, in 2017 our YouGov poll found *only 13% of GB adults* believe that 'most people in the country support 20mph limits' whilst the same poll found that 72% respondents actually did support 20mph limits on busy streets. The mirror of this is also true (think Jeremy Clarkson): a 'false consensus' has built up in which a minority of 20mph limit opponents believe they speak for the majority - they are very vocal, fuelled by a confidence built upon the silence and lack of confidence of the majority.

This might be seen as frustrating but in fact there is a clear opportunity here to reverse these positions, and there is clear benefit in doing so. People jump on band-wagons – if they feel they are in the majority they become emboldened. A sustained effort of campaigning is proposed to explain to the silent majority that they should feel confident *because they represent the views of most people*. Thus, promoting messages like 'the latest (2017) poll shows that X% of the Scottish (72% of the British in 2017) public support 20mph limits on busy streets: this is because people don't like speeding where residents live' are likely to be effective in reducing pluralistic ignorance.

### Countering Scepticism

In our survey work we've found high levels of public disbelief that 20mph limits 'work' in getting general compliance (because of 'other drivers'). Once more these are important considerations for possible counter-messaging:

- *'People will ignore 20mph limits because they don't see themselves getting caught by the police'* countered by *'Enforcement is being ramped up'*.
- *'If 20mph limits were introduced most drivers would not stick to them'* countered by *'we are serious about enforcement and other drivers will be caught if they don't comply'*.
- *'20mph limits are a good idea in theory but are unlikely to make a worthwhile difference'* countered by *'join the growing numbers who want to make residential roads nice places to live by driving with consideration'*.

### **Conscious and unconscious factors affecting driving**

As we explain in Appendix 2, there is strong evidence in the literature that copycat and unconscious driving behaviours help create non-compliance norms, and need to be addressed through campaigning and enforcement. In our own survey work we found high levels of agreement with the following statements:

- Most people who break 20mph speed limits don't mean to, they simply didn't notice the limit was 20mph (*Excusing the Behaviour*)
- I tend to drive at the speed of other people on the road (*herd behaviour*)
- It is just too difficult to stay at 20mph (*excusing the behaviour*)
- If I think a road with a 20mph limit is clear I will be more likely to drive more quickly than 20 mph (*consciously breaking the limit*)
- I tend to unconsciously drive faster than speed limits quite often (*unconsciously breaking the limit*)
- I use my own judgement, not speed limits, to decide on my speed on the road (*consciously breaking the limit*)
- I am a better than average driver (*self enhancement bias*)

Campaigning can work to influence these damaging behaviours and build alternative beliefs. We discussed above the difficulty of communications on its own changing behaviours – communications ideas such as these would need to be underpinned with local engagement and police enforcement.

- Most people who break 20mph speed limits don't mean to, they simply didn't notice the limit was 20mph (*Excusing the Behaviour*): *Message: 'No excuses!'*
- I tend to drive at the speed of other people on the road (*herd behaviour*): *Message: 'Your driving is too important to just copy others'*
- It is just too difficult to stay at 20mph (*excusing the behaviour*): *Message: 'No excuses!'*
- If I think a road with a 20mph limit is clear I will be more likely to drive more quickly than 20 mph (*consciously breaking the limit*): *Message of social disapproval: 'this driving is not acceptable'*.
- I tend to unconsciously drive faster than speed limits quite often (*unconsciously breaking the limit*): *Message: 'you are a guest on someone's street: it is too important to lose concentration'*
- I use my own judgement, not speed limits, to decide on my speed on the road (*consciously breaking the limit*): *Message: 'your judgement is not acceptable: keeping to the speed limit is part of being a good citizen'. 'Speeding is rude'.*
- I am a better than average driver (*self enhancement bias*): *Message – mocking self enhancement bias/puncturing the ego/use humour to mock.*

## Social Marketing Communications: operational matters

Marketers have a well-oiled process for creating professionally produced marketing communications. Central government departments in Westminster use these processes routinely (and no doubt in Scotland too), however some public sector organisations have for understandable reasons stayed 'in-house' and produced their own material.

**We very strongly recommend the use of professional agencies.** You will need a communications specialist research agency to undertake 'insight work' (building on what we provide here in this report), and what is called concept testing in which 4-5 message concepts are tested in focus groups – primarily around the themes of 'social disapproval', 'putting people before cars' and 'enforcement will be serious', but also support messages including collision reduction and children playing. The creative and media strategies can then be created by a marketing communications agency – an example of how you might brief such an agency is given in the boxed item next.

### Creative Brief for 20mph Limits

**Client:** Scottish Parliament.

**Behaviour change:** Greater driver compliance with roll-out of signs-only 20mph limits.

**Product:** Signs only 20mph limits. Signs-only 20mph speed limits are increasingly being introduced by local authorities in Great Britain as a means of reducing road traffic casualties and improving residential quality of life. Signs-only 20mph speed limits have signs placed on poles and painted on the road surface indicating the speed limit. They do not usually feature traffic calming and do not therefore force drivers to reduce their speed to 20mph or below. An obvious advantage of signs-only 20mph speed limits is that because they do not usually involve costly traffic calming measures, a far larger number of streets can be covered than with more expensive 20mph traffic calmed zones. The Road Traffic Regulation Act (Amendment) Order 1999 suggests that 20mph limits are appropriate for roads where average speeds are already below 24mph.

**Target Market:** All drivers in Scotland, with particular focus on men aged 17-25 (aggressive youth), 35-55 (bad habits, high mileage), women drivers (busy professionals and/or school run).

**Strategy:** Focus is on making speeding in 20mph areas as socially unacceptable as drink driving. We want to break the implicit culture that it's 'alright' to break speed limits. We want to challenge the assumption that "residential roads are for cars" and replace it with "residential roads and busy high streets are for local people: cars travelling through are guests". An interesting strategy option may be to link with Scottish identity: that 20mph limits can be part of a new, modern Scotland in which quality of life satisfaction is as important as economic activity.

**Proposition:** Residential 20mph limits are not just 'another speed limit'. They are putting local people first, not least the safety of our children. Put people before cars.

**Desired public response:** I *must* drive considerately in residential areas and busy high streets.

**Tone of voice:** Engaging, listening and consulting, but also determined and serious.

### **Support for the message:**

Each 1mph reduction in speed in urban areas equals a 6% reduction in collisions.

30kph residential limits (18.6mph) are common in Scandinavia and Germany and these countries have high residential quality of life including high levels of walking and cycling.

Police enforcement is vital to create the step change we need for signs-only 20mph.

Public support for 20mph limits is consistently around 70% and this goes up for residents who live in 20mph limit areas. 20mph limits have clear, consistent majority public support. They are popular.

Public anger about speeding on their roads is consistently one of their biggest frustrations in British attitude surveys.

**Competition to be aware of:** Various vested interests including car and road lobbies, pro-car campaign groups; plus traditional 'road safety' officer views, i.e. their narrow focus on casualty reduction rather than a broad focus on changing speed-cultures.

**Mandatory:** All copy to be cleared to meet legal and regulatory requirements. Must be appropriate for Scottish Government, or partner organisation.

**Media requirements:** Headline campaign recommend led by national TV to achieve public sharing of message ("so that everyone knows that everyone knows"). Online viral messaging via social media.

Local engagement media: press ads for detailed explanations and consultation. Local (roadside) posters. Household leafletting around local roll-outs. Community face-face engagement and consultations pre-implementation.

### **Public Relations/Publicity**

Finally, and in our view, this is extremely important, ***we recommend a PR agency is hired over an extended period to create ongoing stories in the media*** relating to the transformative power of a properly compliant 20mph limit on people's lives.

*A very important part of the social change campaign will come from public relations.* Even with significant spend it is unlikely that social advertising could do the job on its own. A professional PR firm should be commissioned to undertake national and local stories that are drip-fed regularly to the media and online. This might be expected to take place over a 2-3 year period before and during the 20mph limit roll-out. As an example from a different sector, when fluoridation of water was introduced in the North East of England there was significant local opposition. To explain, fluoridation took considerable PR effort: a 12 month period was used in which a PR agency released a story most weeks, for example about children with bad dental problems who were not able to solve their own dental hygiene, and how fluoridation was vital for this – and dental hygiene improved as a result.

PR will also be vital for 20mph limit campaigning because you will encounter significant minority opposition whose minority status may be hidden by how loudly they are able to shout, and a media



only too willing to stir up controversy. Some opposition groups are well organised and able to access media outlets with arguments that often have dubious factual accuracy or evidence. This kind of opposition may be troublesome if not countered: as we noted just above, our 2017 survey of attitudes found very low agreement that 'most people support 20mph limits', even though the same survey found high support for 20mph limits on busy streets. It is likely that the loud noise from an opposing minority has contributed to this negativity.

That completes the section on the use of social marketing based advertising in a national context. We now move to the 'sandwich filler' in our original model – the use of community engagement to localise messages and embed behaviour change.

## Community Engagement Activities

Looking back to Figure 2 we see our communications strategy is supported by a 'mid-layer' of engagement activities.

The first objective of this 'mid-layer' is **community engagement**. Community consultation events can help overcome local opposition and secure buy-in at local levels. This strategy moves the debate from the general (social support for 20mph limits) to the personal and specific (my own locality). This personalisation and localisation of a national push would be vital for success. Making the intervention 'real' and personal is central to the success of building support.

We can learn from the Bristol experience. The recent Pilkington et al<sup>ii</sup> analysis of Bristol data found an average drop of 2.7mph using Automated Traffic Count data, superior to the 1.4mph found in Portsmouth. This might be because Bristol did a sizeable amount of work to garner support (publicity, events, school work, and local community engagement meetings), and some (albeit limited) work on compliance via Community Speed-Watch groups, and asking council vehicle drivers and those in the NHS to drive at 20mph thereby acting as 'pace cars'. The premise to take into the Scotland recommendations is that 'activated' communities – if well supported – might be able to help localise and 'action' the national communications campaign.

Community engagement is capable of deployment at a street-by-street level. As part of our work for this report we re-consulted with the Bristol 20mph team and they explained that their strategy included:

- Attendance at localities (small areas one at a time) and giving presentations to local residents in a town or local hall.
- Explaining which roads were planned as 20mph limits and why.
- Asking for views, promising that feedback would be seriously considered with a view to adjusting plans and making sure these adjustments were publicised so that local people knew they were being listened to.

Interestingly, loud and vocal opposition often followed the public presentation - from a few vocal people; but this was typically followed by quiet support face to face, and useful feedback offered after the formalities finished. Once again this 'loud opposition, quiet support' reflects the 'pluralistic ignorance' that is commonplace in 20mph limit discourse.

The second objective is to **encourage activism**. From our Bristol consultation we would conclude that:

- The processes of local consultation detailed above can sometimes activate people willing to help as volunteers.
- This help could manifest itself in small ways (for example signing petitions, window stickers with pledges to keep to speed limits on residential roads/busy streets) and larger ways (for example neighbourhood speed watch groups, or even taking part in demonstrations).
- So called 'pace cars' are an important example of how volunteers could effectively change behaviour: our discussions with police (see next section) indicate that only one in four

drivers in typical free flow conditions would need to comply in order to achieve complete compliance among all drivers.

- Community speed watch groups could be very effective but it is believed that committed police support over time is vital for these speed watch groups to succeed. They are further discussed under the 'enforcement' section next.
- Finally, it may be possible to work (quietly?) with local campaigners such as Living Streets, Playing Out, Sustrans and 20s Plenty. They would be able to mobilise a more active constituency that could create local momentum using devices such as petitions, protest letters, and local events such as occupy the roads; "die-ins", and so on.

With respect to volunteering and activism, you may like to note these survey results in Figure 9 from our YouGov polls 2013 - 2017 for GB and Bristol.

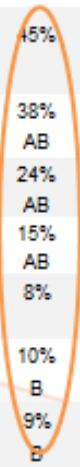
**Figure 9: 2017 YouGov Survey of GB and Bristol Adults: Reasons to oppose 20mph limits**

q17. Would you be willing to play an active role in supporting new 20mph limits by doing the following? Please tick all that apply, if any.

	Bristol 2017	GB 2017	GB 2015	GB 2013
	B	A	B	C
Unweighted base	508	3078	4251	4075
Effective base	448	2763	3845	3829
I would not be able to or be interested in playing an active role in supporting new 20mph limits	58%	52%	52%	45%
By driving at 20mph limits myself even if others do not	32%	34%	33%	38%
By signing a pledge to support 20 mph	18%	20%	22%	24%
By using a rear window sticker to show my support for 20mph limits	9%	12%	12%	15%
By getting involved in neighbourhood campaigning	5%	7%	7%	8%
By joining a neighbourhood speed watch campaign	7%	8%	8%	10%
By using a speed gun as part of a neighbourhood campaign	7%	8%	8%	9%

High potential for activism in 2013 has dissipated somewhat but still encouraging?.

Unweighted base  
Effective base



We now can move on to the final strand of the three-pronged strategy for compliance – enforcement.

## Enforcement

Figure 2 at the front of the Report indicated that the ‘foundation strategy’ for compliance is enforcement.

The social marketing activities discussed so far are primarily there to build shared beliefs that prime the public to support compliance. But for the reasons we’ve explained we do not anticipate that communications alone can do the difficult job of generating compliant behaviour. In other words, supportive beliefs and driver compliance are poorly connected without a strong intervention, and the evidence, such as it is, suggests that the key to compliance is something that *actively intervenes* on people's driving. Powerful active interventions are possible with ideas like in-car technology and driver training, but the most obvious intervention is some kind of legal enforcement – starting with the police themselves.

In many ways an active police enforcement campaign could be regarded as ‘social marketing’ in that it is a key part of the message being sent out - that the authorities are serious, and are willing to prioritise the issue. There is little doubt that active, visible police enforcement would ensure compliance. Central to this plan would be the necessary resourcing of a police force accordingly – but our West Midlands casework (coming up) indicates this may not be as prohibitively costly as might be thought. Added to this is that one of the key outcomes of a national campaign is the possibility that it would provide the public support and hence political opportunity for resources to be allocated accordingly.

But what about the police themselves? There has been much discussion in the road safety profession about the attitude of the police and a possible (unofficial) reluctance to co-operate on 20mph speed limits, probably based on resource grounds. We note this quote from a Steer Davies Gleave Report<sup>iii</sup>: *“Enforcement of 20mph speed limits is possible, and does take place (using both fixed speed cameras and mobile enforcement by police). However, the police’s recently revised guidelines state that whilst enforcement of 20mph speed limits will be considered, it cannot take the place of proper engineering”*.

### Case study - West Midlands Police

We decided to dig somewhat deeper and spoke directly to traffic officers from West Midlands Police (WMP). They explained that they have taken a positive attitude to enforcing their 20mph limits, and have a small but dedicated team deployed to this. The WMP are well known for their innovative approach to road safety: cycling campaigners’ networks applaud their work on encouraging cycling by enforcing laws on close-passing of cyclists. Our contacts in WMP also explained that they have ideas for re-igniting community speed-watch groups who, they say, can be a successful part of the ‘enforcement mix’ if given ongoing support.

In further contact, our WM policeman explained more about the kind of tactics that he claims are very successful locally in enforcing compliance in 20mph limits. In the West Midlands they have a team of ‘6+1’ i.e. a commander and 6 police traffic officers who – it is claimed – can effectively cover the West Midlands (population 2.5m). This seems a very modest resource for such a large area but he insisted that they are able to be effective even with such a small force. They deploy an extremely interesting combination of enforcement, the use of social media, and local community volunteers, in particular the use of ‘pace cars’. Their tactics are as follows. The WMP specifically target vulnerable

locations at specific times. So, they avoid the rush hour when the volume of traffic makes compliance self-enforcing. They may choose a school location at mid afternoon when free flow traffic means a danger of speeding. They might use a speed gun, wearing black, (not high-visibility jackets) and they might **ticket twenty or more speeders** at that one location. Many of these offenders might be parents. The police then tell the headteacher of the school and then ask the school to **post on social media** explaining how many were booked and what for, and inviting comment. The police themselves will post on Twitter. Any comments, positive or negative, are responded to – and the story rolls and rolls for some time – inviting comment, and often picked up by the local press/radio etc. The police **deliberately seek publicity** for what they are doing, and invite comment – their view is that the more publicity they get the better – because word will spread and more drivers will be aware of their enforcement activities. They have the support of their senior officers for this approach. The senior ‘cover’ is important because some of the commentary is hostile (why aren’t you catching real criminals etc) – and so an attitude of being publicly engaged, responsive, but robust and determined, is essential. In total they might catch fifty offenders in a day, but the act of booking plus the use of social media (Twitter and Facebook in particular) they find has a significant behaviour change effect. As the police officer said to us ‘it’s what drivers think, not what you’re doing that matters’ – in other words a level of caution amongst drivers – a credible threat of detection – is enough to get compliance.

The West Midlands police also use **neighbourhood speed watch teams** that they try and support. Finally, another insight to note is that the police will ensure that taxi drivers and local commercial vehicles including buses are also caught and ticketed. Their logic is that these local professional drivers, not enjoying being caught speeding and not wanting to be caught again, will be very unlikely to re-offend. In doing so they will act as ‘**pace cars**’ – complying with the limit and hence forcing cars behind them on the road to also comply. In busy but ‘free flow’ conditions only 1 in 4 cars needs to be actively compliant to force all traffic to comply. In summary, what the WM police are doing could be described as a creative combination of enforcement and marketing to create the social conditions (local discussion, drivers cautious about being caught and being more careful) for compliance.

In seeking corroboration for the West Midlands case study we noted this from research on the effectiveness of traffic policing.<sup>iv</sup>

*Effective traffic policing involves a range of both overt and covert operations and includes a mix of automatic and more traditional manual enforcement methods. It is important to increase both the perceived and actual risk of detection by ensuring that traffic law enforcement operations are sufficiently intensive, unpredictable in nature and conducted as widely as possible across the road network. A key means of maintaining the unpredictability of operations is through the random deployment of enforcement and/or the random checking of drivers. The impact of traffic enforcement is also heightened when it is supported by public education campaigns.*

‘Public education’ is probably a euphemism for the use of public relations and communications to influence.

That completes our immediate recommendations. Before we move to cost estimates, as promised here is a short section discussing possible future options you could consider.

## Longer term solutions for behaviour change: Technological enforcement

There are at least two longer term options for enforcement that would be completely transformative – average speed cameras (SPECS) and in-car intelligent speed adaptation (ISA). In fact, both of these options are technically fully developed and in theory available now. Both these options would move **all motorists** to 100% compliance more or less overnight – a full 10mph drop in average speeds. They would remove the need for expensive police enforcement, or for road engineering. They are challenging (SPECS is very expensive for a national roll out, and ISA would require legislation and might create civil unrest!) but their transformative characteristics merit inclusion in this report.

**SPECS** is an average speed measurement camera system originally manufactured by Speed Check Services Limited, from which it takes its name. We recently spoke to an average speed camera business representative from a firm called Jenoptik. His vested interests are noted and more independent evidence is required, however, he insisted that in theory SPECS cameras could be used in entry and exit points in 20mph areas, and quoted a typical cost of about £50k for a pair of cameras (we have crudely estimated £250m to cover all Scotland's residential roads based on 1 pair of cameras per 1000 of population). Thus, a considerable one-off fixed-cost would be required for large scale deployment of these cameras in residential areas. Such deployment would also be culturally new to anywhere in Great Britain, and so require consultation and public relations to gather public support. The 'prize' is that average speed cameras work extremely well on trunk roads – in trials on motorways and A roads (a high profile trial on the A9 in Scotland is an example) their effect in shifting the 85th percentile speed is almost completely in line with the reduction in the speed limit. Average speeds in the A9 in Scotland dropped from just over 60mph to 50mph 'overnight'. Killed and seriously injured numbers have also reportedly dropped by 62% in 2016, according to news reports. Interestingly, SPECS cameras are also seen as 'fair' by motorists in a way that GATSO speed cameras are not. The challenge with SPECS systems is their deployment in more complex residential road systems with many entry and exit points – ideas are under consideration by suppliers and we believe this is worthy of ongoing contact.

We checked for police views of SPECS and our contacts in WMP confirmed that the police are very supportive of SPECS. They see no downside other than cost, and their own view of the evidence accords with the sector itself (that they work extremely well). Our WM police opinion was that an excellent system of enforcement in a complex 20mph limit area would be to have main throughways covered by SPECS, some side-street calming if possible, but if not spot-location police enforcement + social media + community speedwatch, as described above.

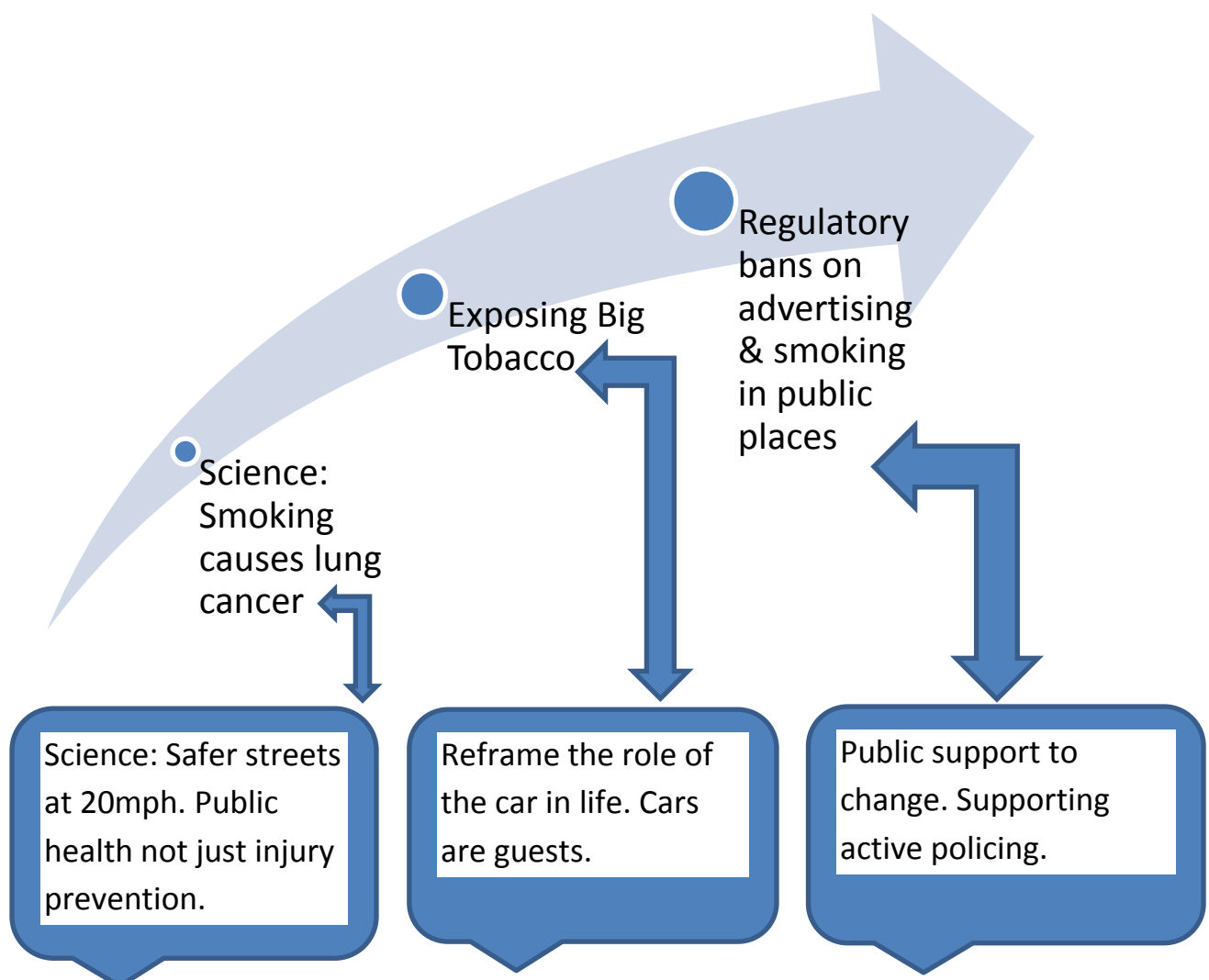
**Intelligent Speed Adaptation** uses in-car technology - black boxes and GPS – to potentially automatically adjust the speed of the car based on the speed limit. The technology to do this already exists and in theory could be fitted to new vehicles with little difficulty. We acknowledge the significant policy hurdles that would need to be overcome, and do not spend much time here discussing this option other than to note its potential, probably as a part of the increasing momentum behind automated driving.

Finally, under the heading of 'longer term solutions', we note the promise of post-test **driver training**. One of the authors leads a project examining the potential of advanced driving in improving safety amongst young men. An initial trial has led to successful outcomes as measured by reduced

black-box identified aggressive events. Such ideas would of course take time and resource to deploy, and are only of interest for long term horizons (perhaps ten years plus) in terms of this report. We also note the inadequacy of the current driving test in speed limit compliance (stick to the limit to pass your test and then don't worry after that), and ideas such as **changes to the driving test** to emphasise the wider ramifications of speeding in residential areas, and advanced driver training enforced by regulation would also be worthy of trial.

Finally, you asked us about lessons to learn from the public's changed attitudes and behaviour towards smoking. The decline of smoking and the ban in public places can be attributed to a long timeline (fifty years!) of education (smoking causes lung cancer), marketing (campaigning activities including exposing the sinister practices of Big Tobacco) and law enforcement (regulatory bans on advertising) (Figure 10). An analogous strategy for 20mph limit compliance – which we have inculcated into the ideas discussed here – would include education, marketing and law enforcement. In the same way that social marketers reframed arguments against Big Tobacco, social marketers can similarly reframe the role of the car in modern life, for example, helping expose car manufacturers as selling us a false dream of driving 'freedom'.

**Figure 10: Learning from the change in attitudes and behaviours towards smoking**



## Costings

The costs in this section are **estimates only**. We have done our best to obtain some verification for these estimates but have had very limited success verifying costs from official sources within your timescales. We therefore recommend that it is imperative that you obtain formal quotes before setting budgets.

Cost estimates are now provided for each of the three strands of our recommended approach, beginning with a Scotland-wide social marketing campaign to change beliefs with respect to 20mph limit compliance.

### Social marketing costs

We recommend TV advertising, supported with some paid-for social media. We also recommend Public Relations.

#### TV advertising media cost estimates.

A 'culture change' campaign of the type we recommend would require a number of campaigns with different creative executions spread through the year, with our proposed three phases of culture change probably requiring a longer time frame of ten years to embed and change cultures.

TV campaigns are planned in terms of 'reach' (% of target audience reached by one advert), and 'frequency' (number of times the audience has an opportunity to see the advert). TV is then costed in 'cost-per-thousand' (CPT) i.e. the amount it costs to reach each thousand of the target audience. Our target audience is best rounded to all 'adults in Scotland'<sup>1</sup>, around 4.5m adults. The CPT of TV varies but an average might be say £5, meaning one advert reaching the adult population of Scotland might cost say £22,500.

Using these figures and the industry norms for campaigning of this type (regular 'burst' campaigns across a wide variety of channels to reach the whole population) we estimate say £2.5m media costs per annum, with a requirement that such campaigning would run for ten years to create a genuine culture change. Therefore, a total of £25m to cover a ten year period.

Social media costs: We would guesstimate £250k p.a. = £2.5m over ten years

Agency creative costs: we would estimate £250k as a retainer for the ten year period.

Public Relations: We would estimate £500k agency fees for PR spread over ten years.

**Thus, a ten-year estimated total of approx. £28m. (£2.8m pa)**

### Engagement cost estimates

We are basing our estimate on actual costs we were able to obtain for the Bristol roll out of their 20mph limit areas. Bristol undertook various engagement activities. Best estimates for the roll out of

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<sup>1</sup> The population of Scotland ages 16 and over was 4,480,000 according to mid year estimates for 2016. <https://www.nrscotland.gov.uk/files//statistics/population-estimates/mid-year-2016/16mype-cahb.pdf> accessed 26th March 2018.



the Bristol city-wide 20mph were £2,010,000 between 2012 and 2016. This comprises five elements as shown in Figure 11.

**Figure 11: Estimated costs for implementation of 20mph in Bristol**

<b>Aspects of 20mph implementation</b>	<b>Cost 000</b>
Staff (Engineering Practice, Enumerators, TRO team, etc	£450
Contractor costs - for all physical works and Vehicle Activated Signs (VAS)	£980
Monitoring: household interview surveys, YouGov Tracker surveys, and all of the Automatic Traffic Counters and Manual Classified Counts)	£230
Legal fees for Traffic Regulation Orders	£100
<b>Public consultation/engagement</b>	<b>£250</b>
	<b>£2,010</b>

Converting these figures to a Scotland equivalent we used relative populations as a rough conversion guide. Bristol has a population of about 450,000, whilst Scotland's is 5,400,000 – a factor of approximately 12. The key figure from Bristol is that of 'public consultation /engagement', which converting to **Scotland would give a cost estimate of £3m, spread over, say, 3 years.** This might assume that most of the budget is front loaded over, say, the first 3 years, but that engagement activities become self-sustaining thereafter.

### **Enforcement costs**

This estimate is very basic. We have created a cost estimate by converting the West Midlands Police (WMP) case study, discussed earlier, to a Scotland-wide equivalent, taking the information we have informally gathered from WMP in good faith. Please note our information gathering was not able to be formalised and these cannot be regarded as official figures.

The WMP information was that they have a dedicated team of 5 officers plus one commander to cover their area, a population of 2.5 million. We guestimate that each officer costs circa £50k pa, thereby calculating the WM team costs circa £350k pa. A direct conversion to Scotland using only population differences would suggest a figure of say £700k pa. However, we estimate that the rurality of Scotland would make policing 20mph limits a considerable challenge compared to the urban density of West Midlands. Therefore, we have doubled this figure to **£1.4m pa (let's keep the estimate consistent as required for ten years) for Scotland to gain the same effects. Thus, a ten-year total of £14m.**

We also note the confidence expressed by our WM contact in the successful increase in compliance, and we were informed this has been verified by independent data, but we could not obtain access to this data within the timeframe of this report.

**Grand total estimate for all marketing, engagement and enforcement costs across Scotland for ten years would be £4.5m per annum or ten-year cumulative total of £45m.**

## Appendices

### Appendix 1: what is a reasonable mph target for compliance?

Observed data (GB free flow stats) currently paints a grim picture with 2016 figures of 84% non-compliance<sup>v</sup> on 20mph limit streets compared to 46% on motorways and 52% on 30mph roads. To take a driver's perspective for a moment, there are a number of factors in play here. Driving below 20mph is 'hard' in the sense that it is easy to exceed 20mph at least at some point. 20mph limits are set across residential roads which were not originally engineered for 20mph limits, so many 20mph limit roads 'encourage' speeds of up to 30mph. This supports the view that 24mph (10% +2) *may* be a 'reasonable' measure of compliance. This has been the general rule of operation for police enforcement (formerly managed by ACPO, now the National Police Chief's Council (NPCC)).

The above narrative is the kind of argument that drivers might present. However, a resident's perspective might be quite different in that compliance with 24mph would likely not be sufficient to create the step-change in residential street use discussed in this report. Vehicle speeds of 24mph are probably too high for allowing children out unsupervised for example. With this argument in mind a recent quote by Anthony Bangham<sup>2</sup> is very interesting:

*"Our priority for action is always going to be the most dangerous drivers but the reality is many drivers now routinely drive above the speed limit. Of course common sense must be applied, but there should not be a 'comfort zone' over the speed limit where it is considered safe to speed. The limit is the limit for a reason".*

Police Chiefs' Blog: Chief Constable Anthony Bangham - *Road enforcement must be Proportionate.*

With both drivers and residents' perspectives in mind, what targets should be set for compliance? One way to examine the speed limit, and the % of vehicles that comply at any one time, is to attempt two estimated bell curves of traffic speed variance, one with a 'target' compliance of 24mph and the other with a target compliance of 20mph and then apply the data we have to approximate to these bell curves.

The Atkins Report on Portsmouth and the Pilkington et al Report for Bristol report an average speed of between 25 and 28mph on roads before 20mph limits were installed. Let us simplify and say a pre-20mph limit average speed might be 26.5mph. We can model a bell curve using the GB free flow statistics that tell us only 16% of traffic drives at under 20mph. Therefore, a standard deviation of 1.0 (roughly two-thirds of traffic) is approximately +/- 6.5mph from the mean.

We might agree a target of 24mph compliance. In reality this might be modelled as setting a target of 80% of free-flowing traffic driving at 24mph or less. If the mean is 26.5 and SD is 6.5mph then currently about 35% of traffic is compliant with 24mph. The task therefore is to shift the 35% figure to 80%.

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<sup>2</sup><http://www.npcc.police.uk/ThePoliceChiefsBlog/PoliceChiefsBlogCCAnthonyBanghamRoadenforcementmus.a.spx> accessed 25th March 2018.

Portsmouth's drop in average speed was found by Atkins to be 1.4mph, taking the average speed in Portsmouth from about 28mph to about 26.5mph – nowhere near enough to shift the % of compliance to 80% below 24mph, (let alone 20mph).

Bristol's drop in average speed was found by Pilkington et al to be 2.7mph. This took the average speed down to 23.8mph from pre-intervention average of 26.5mph. The Bristol intervention therefore brings 50% of traffic into line with the 24mph target of compliance. Our view is that while this is encouraging for the city, it is still not enough to create the 'step-change' in compliance we seek: 50% of traffic is still breaking the limit, and in any case the limit is set at 24mph not at 20mph. With the Bristol reductions applied to a true 20mph limit, only about 30% of traffic would be compliant.

These calculations are there to illustrate the step-changes required in speed reductions to bring about a 'culture change'. A culture change is defined here as a clear majority of drivers (let's say 80%) compliant with a 20mph limit. Bristol has made good progress and yet these estimates suggest only 30% of drivers currently comply. To improve that 30% figure to 80% requires the kind of intervention power that we suggest in this report.

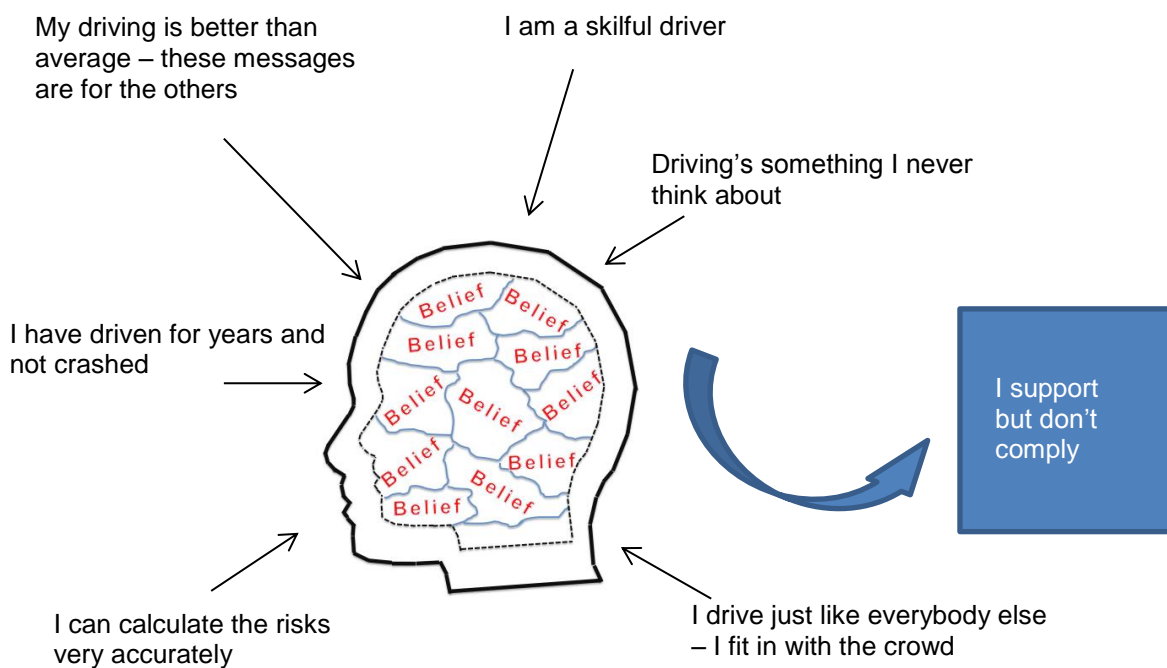
## Appendix 2: 20mph attitudes and behaviours – insights: why fear appeals and general education are often ineffective

There are some very common approaches to compliance which haven't been recommended, in particular general education (drive safely or you will collide with something) and so called 'fear appeals' (hard-hitting campaigns highlighting the consequences of collisions). The evidence for educational campaigns (including schools based work, visits from firefighters, etc) is that they have very modest or no discernible effects on driving behaviour<sup>vi</sup>. The evidence<sup>vii</sup> on 'fear appeals' is that they may have a small effect (small improvements in compliance) but not the step-changes we need for a transformation in 20mph areas.

Why are these activities relatively unsuccessful in changing driver behaviour on their own?

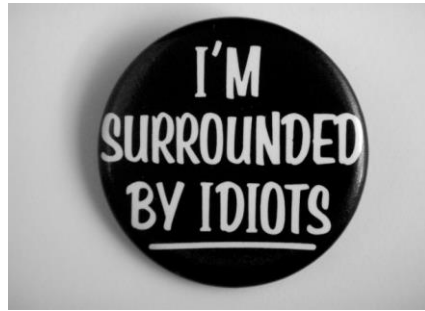
Their lack of success can be attributed to the cumulative impact of complex driver psychologies of which at least five linked effects come together to create a 'force-field of resistance' to 'standard' education or fear based approaches. We bring these together, illustrated in Figure 12.

**Figure 12: The cumulative effect of driving psychological tendencies**



We explain each of these effects briefly below, using photos to illustrate each one.

### Self Enhancement bias



The phenomenon of **self enhancement bias** explains the well-known “speed limit paradox”: ‘everyone supports speed limits, no-one obeys them’. Self-enhancement bias is the illusion that many drivers suffer from that they are better than average drivers: (“Yes we need speed limits for all those terrible drivers on the road – but I’m a good driver so don’t need them personally”). So, people personalise their speed limits.

### The illusion of control



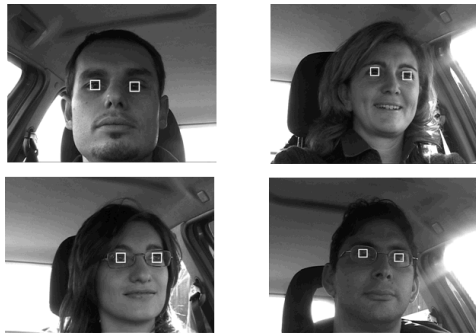
The **illusion of control** effect describes how drivers gain false feedback from having driven for a long time and not had consequences. Their driving may be defective, even dangerous, but they ‘get away with it’ because crashes are relatively rare events.

### Instrumental risk-taking



Some drivers are **instrumental risk calculators** who assess the risks and take a calculated gamble that they will ‘get away with it’ (either a collision or getting caught).

## Automaticity



The **Automaticity** effect describes driving automatically with very low cognitive activity – unconscious, habit-based driving.

## Copycat Drivers



Finally, many drivers exhibit **copycat behaviours**: driving at the speed of other drivers around you. Part of this effect is a feeling of wanting to “keep up with traffic”.

As we saw earlier in Figure 12, these psychological ‘blockers’ combine to explain why an attitude (support) does not predict a behaviour (compliance). However, this does not mean that support is not important and we should just concentrate on driving behaviour. As we have explained in the main body of the report, support is very important because it helps us create public disapproval for flouting 20mph limits, and hence creates the conditions for enhanced enforcement.

## References

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<sup>i</sup> McKenna, F. 2010a Education in road safety – Are we getting it right? Report for RAC Foundation. Report Number: 10/113.

<sup>ii</sup> Pilkington, P., Bornioli, A., Bray, I. and Bird, E. 2018 The Bristol Twenty Miles Per Hour Limit Evaluation (BRITE) Study. Project Report. University of the West of England. Available from: <http://eprints.uwe.ac.uk/34851>.

<sup>iii</sup> Steer Davies Gleave. 2014 Research into the impact of 20mph zones and limits.

<sup>iv</sup> Bates, Lyndel J., Soole, David W., & Watson, Barry C. 2012 The effectiveness of traffic policing in reducing traffic crashes. In Prenzler, Tim (Ed.) Policing and Security in Practice: Challenges and Achievements. Palgrave Macmillan: United Kingdom, pp. 90-109.

<sup>v</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/533244/free-flow-vehicle-speeds-great-britain-2015.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/533244/free-flow-vehicle-speeds-great-britain-2015.pdf)

<sup>vi</sup> McKenna, F. 2010b Education in road safety – Are we getting it right? Report for RAC Foundation. Report Number: 10/113.

<sup>vii</sup> R. Elvik, T. Vaa, A. Høy, A. Erke, M. Sørensen (Eds.), 2009 The Handbook of Road Safety Measures, 2nd revised edition. Elsevier: Amsterdam.