

Call for evidence: Understanding Changing Travel Demand

Sustrans submission to the Commission on Travel Demand, February 2017

Introduction to Sustrans

- 1 Sustrans makes smarter travel choices possible, desirable and inevitable. We are a leading UK charity enabling people to travel by foot, bike or public transport for more of the journeys we make every day. We work with families, communities, policy-makers and partner organisations so that people are able to choose healthier, cleaner and cheaper journeys, with better places and spaces to move through and live in.
- 2 In this submission we provide feedback primarily from the perspective of walking and cycling. We have substantial experience in evidencing the benefits of investment in these modes. Sustrans has a long track record in monitoring cycling and walking activity and in evaluating the impact of interventions delivered in support of walking and cycling. We hold extensive data resources that could help to support the work of the commission.
- 3 We hold that travel demand is a highly complex interaction across a range of themes and disciplines, extending well beyond transport. Demand forecasting tends to be constrained by 'current condition' assumptions; but we would also contend that where more ambitious modelling is attempted, the 'future world' assumptions are not based on realistic expectations.
- 4 In this submission we respond to the questions posed by the Commission largely (but not exclusively) from the perspective of walking and cycling; we illustrate points where we reasonably can, or, more frequently, we cite data sets which may prove informative in the context of those points; and we draw out the key conclusions that we want to emphasise.

Response to consultation questions

- **Which aspects of travel demand have changed in ways which have not been anticipated by traditional forecasting approaches in the past twenty years?**
- 5 Most obviously, in the context of cycling, we can point to a growth in levels of cycling that Government sources failed to anticipate throughout the past two decades. For example, Temprow data inputs were based on forecasted decreases in levels of cycling (I am uncertain whether or not this is still the case). The reasons are straightforward enough – observations suggest that cycling declined over the decades up to the start of the 1990s, so the continuation of the observation-based trend line simply followed the set pattern.
 - 6 However, this fails to acknowledge the complexity of factors that have influenced travel patterns throughout the past twenty years, and for twenty years before that. Most fundamentally, investment is the stimulus for change. So pre-1990, when investment in cycling was negligible, levels of cycling fell. Investment was much more heavily concentrated in cars, and patterns of travel reflected this. Since 1990 more investment in cycling saw levels of cycling grow in some

locations. But investment is so modest (particularly relative to investment in other modes) that changes remain limited in most places.

- 7 In terms of walking, patterns are less clear. But there is plenty of evidence to suggest that where investment supports walking, levels of walking increase.
- 8 In the context of this part of our response we would like to flag up the following material:
 - Sustrans modelling work on delivering the Cycling and Walking Investment Strategy, which uses measured responses to intervention to forecast the costs of achieving the Government's target on walking and cycling –
<http://www.sustrans.org.uk/sites/default/files/images/files/Achieving%20the%20Government%27s%20targets%20for%20cycling%20in%20the%20Cycling%20and%20Walking%20Investment%20Strategy.pdf>, <http://www.sustrans.org.uk/blog/what-will-it-take-achieve-govs-bold-aims-cycling-and-walking>
 - Sustrans' Bike Life reports, which suggest a considerable 'latent demand' for cycling that current transport planning often fails to recognise, and identifies some of the barriers –
<http://www.sustrans.org.uk/bike-life/overall-survey>
 - Our response to recent Webtag consultations also carries some relevance here –
<http://www.sustrans.org.uk/blog/valuing-transport-schemes-high-risk-low-returns>,
<http://www.sustrans.org.uk/blog/how-do-we-value-travel-time>
- 9 Further, we have recently conducted some exploratory work on travel trends in Scotland. This work is not yet published (we can make this work available to the Commission). But the observations make for some interesting reading. Notably:
 - The number of trips being made by car is showing a recent increase after a period of reduced car travel; the overall share of trips that are made by car is falling; the proportion of people driving every day is similar to the figure for ten years ago, but lower than a more recent peak; the proportion of licence holders among several age groups is decreasing; licence holding by women is growing whilst the proportion of men with driving licences is stable or falling
 - The share of all trips that are made by walking has grown substantially in recent years; the increase in walking is not attributable to walking to school; speed and volume of traffic are deterrents to cycling; the levels of walking and cycling on the National Cycle Network are growing markedly.
- 10 We comment specifically on the predict-and-provide paradigm later in the text.
 - **How do these changes relate to the way in which the activities that we participate in have changed? What other factors might explain change?**
- 11 The list of parameters that influence travel demand is huge. Maybe they can be broadly grouped into the personal and domestic determinants, response to society and community, and macro-level drivers.

- 12 At the personal level, we can suggest that travel complexities (e.g. moving family members to multiple different locations), workplace constraints (time or arrival and departure), and income would be key factors. These might be set against the increased recognition of the contributions of walking and cycling to personal health, the use of leisure time, and individual responses to perceptions (in cycling and walking terms, 'normalisation'). There are also issues around age, gender (we have a useful blog on this theme due for release any day now), life-stage, etc.
- 13 In terms of society and community, there are a whole host of issues that could elicit what we might call a positive response, such as air quality and participation and engagement, and a set of factors that might make choosing cycling or walking more challenging, such as issues around local environments and perceptions of safety/security.
- 14 At the macro level the most obvious drivers might include economic and technological changes. But other challenges such as climate change ought to be taken into account too.
- 15 These feels like a rather non-substantive answer to the question posed. But the reality is that the palette of influences is so extensive, and the interactions are so difficult to disentangle, that it is difficult to sensibly articulate.
- 16 Sustrans' response to this challenge is to attempt to design our interventions around a 'socio-ecological model' that seeks to address the cultural/ community, environmental and individual components that affect travel choice. In practical terms, this means that ideally an intervention would be part of a package that engages a community, changes an environment, AND supports individuals. Our approach is described in a little more detail later in the text.
- 17 The broad premise of our approach is distilled from evidence collected around interventions. Particular examples of relevant data resources and evidence of impact include:
 - Bike Life, as above, which reveals much about attitudes to and perceptions of cycling in the seven participant cities - <http://www.sustrans.org.uk/bike-life/overall-survey>
 - Travel behaviour surveys – we have a small number of very highly detailed studies of travel behaviour in a handful of cities. These are incredibly rich in detail about how people move around and why they make the choices they make
 - Evidence of more-than-the-sum-of-the-parts impact for 'joined-up' delivery is best characterised by work we have on schools that shows that where we build a safe route AND support people to walk or cycle, uptake is greater (unpublished research – can be made available)
 - There is also good evidence of the benefits of investing revenue alongside capital funding, most notably in <https://www.gov.uk/government/publications/sustainable-travel-projects-revenue-and-capital-investment>
- **How do these vary spatially? Are there distinctions between central, suburban and rural areas and are there differences between cities?**
- 18 We have extensive analyses that show the extent of difference in different settings. The contrast between, for example, data from travel behaviour surveys in rural areas (we have data from the

Yorkshire Dales and surrounding areas) with equivalent data for cities (e.g. Edinburgh and Glasgow) show all the degrees of difference that you might expect. We also hold examples in small towns (e.g. Kirkcaldy) where patterns also show key differences.

- 19 Programmes which include interventions of comparable nature in very different settings can also be very revealing. The best example we hold may be Connect2, where we have similar evaluations of 84 schemes which are in very diverse settings – urban and rural, high population density and low population density, serving different types of destinations, varied ‘extents of environmental change’, varied extents of community engagement, etc. See http://www.sustrans.org.uk/sites/default/files/images/files/publications/Sustrans_Transforming_Local_Travel.pdf, <http://www.sustrans.org.uk/sites/default/files/images/files/Sustrans%20Fit%20for%20Life.pdf>

- **How do they vary over time? Are there particular times in the week where demand has changed or seasonal variations which have emerged?**

- 20 Walking and cycling are subject to significant temporal variation. But this is to some extent a function of provision. We observe in cities that seasonal variation in cycling is much less pronounced than is the case on leisure routes in rural areas. We infer the blindingly obvious – that family leisure rides are more likely to be influenced by weather conditions than commuter cycling.
- 21 Sustrans maintains a database of cycle (and some pedestrian) count material. We have data from several thousand sites across the UK, some data sequences now going back for up to 15 years. This is an incredibly rich data resource. The data is typically an hourly, bi-directional flow. In most instances we know details about the location of the sites in terms of the nature of the route and the destinations served. Some unpublished analysis exists. This can be shared with the commission. Access to the database can be provided.

- **What methods can be used to incorporate greater uncertainty in demand? Have they been deployed and to what effect?**

- 22 The question of whether to suggest that demand forecasting needs to be more sophisticated, or whether it needs to be lighter touch, is a challenge in itself. Sustrans wants to see a situation where investment is driven by pragmatism. But pragmatism means different things in different settings, and the consequence of what might be seen as pragmatic over the past 20 years is exactly what has led to the predict-and-provide catastrophe that means that (beyond HS2) investment in roads is by far the most significant part of the transport investment profile for the current Government.
- 23 If more sophisticated demand forecasting would result in greater recognition of the role of walking and cycling, and correspondent investment in support of this, we would be happy to commend it.
- 24 However, we anticipate that in the current climate more sophisticated demand forecasting might in fact mean an over-emphasis on new technological solutions such as electric cars and autonomous vehicles. Electric cars have not seen uptake in demand at the rates of more optimistic

forecasts (although there is some alignment with some of the more pessimistic forecasts). And autonomous vehicles have so many challenges of implementation that it is impossible to see that they will offer significant change to transport provision within any sensible time frame – by which time we may well be in the throes of more significant disruption due to climate change.

- 25 Perhaps we have to conclude that factors in demand are so complex that we can't reasonably expect to be able to accommodate all variables, so demand modelling is necessarily flawed.
- 26 At a very practical level, one way to reflect uncertainties in demand is through transparency and sensitivity in modelling and forecasting. It would be more helpful if the assumptions made in demand modelling work were more transparent. This may not be favoured by modellers and scheme promoters, because it does mean that they would be likely to face more questions about why their assumptions are as they are. In terms of sensitivity, the range of possible outcomes is always helpful in almost any context. But again, the breadth in range that we might anticipate seeing in some instances may not flatter the modellers and promoters.

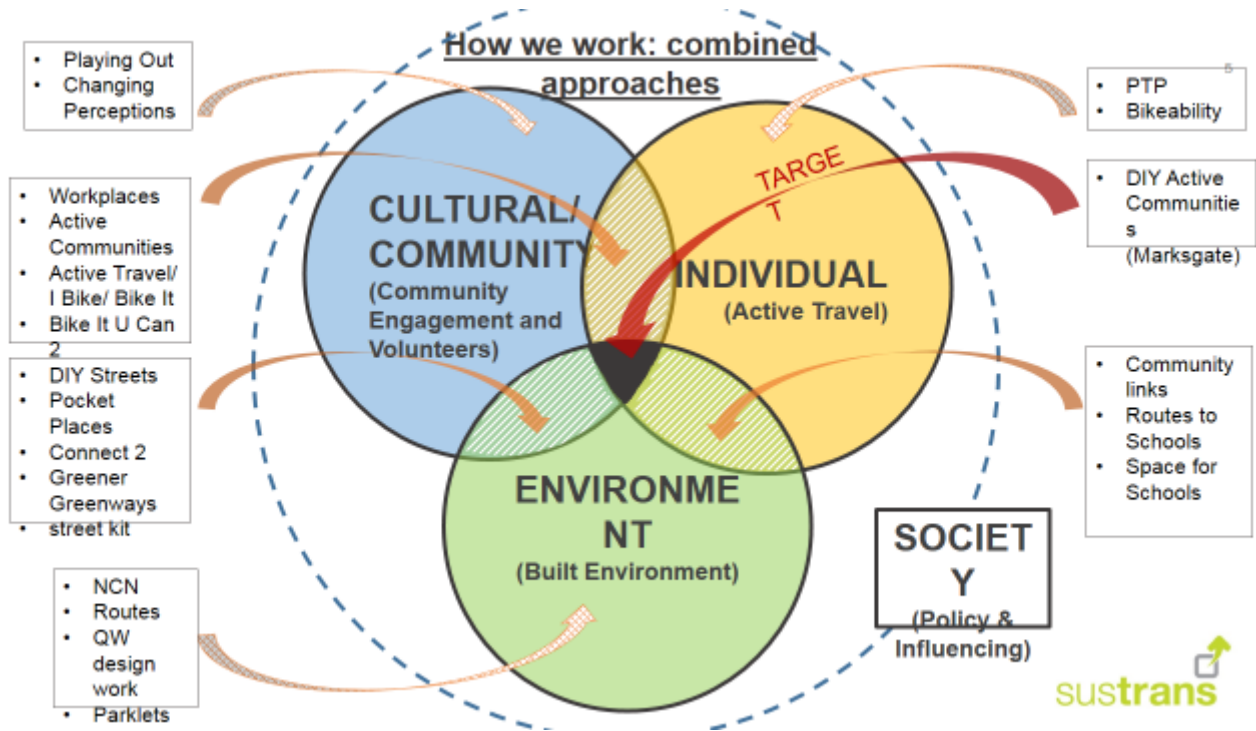
Supplementary comments

- **Risk of reinforcing the predict-and-provide approach to transport planning**

- 27 One of the major risks of the failure to understand demand is the way that current approaches act as a crutch for established practice to pervade. We are thinking particularly of the predict-and-provide paradigm. This says that we predict the future based on the past and cater for a future demand that fits within the constraint of the current. In this way, current approaches to provision of transport are 'locked-in'.
- 28 This problem is well-evidenced in terms of road building. We see historic growth in traffic; future models predict growth in traffic on this basis; we perceive that the way to deal with forecasted growth is to build new roads; traffic growth ensues. We disregard the possibility of changing the paradigm by changing provision.
- 29 A case-in-point for running against predict and provide is London. Twenty years ago conventional transport modelling would never have forecasted significant increases in cycling and decreases in motor traffic. But the congestion charge and investment in cycling have changed the paradigm.

- **Applying a socio-ecological model approach to Sustrans' work**

- 30 Earlier in this response I mention the application of a socio-ecological model to Sustrans' work. Just to elucidate, a diagrammatic version of the model is set out below. The relevance of this to submission is bound up in our response to the second question. We are trying to target the central intersection of the three circles with our 'joined-up delivery' approaches.



• **Sustrans’ data resources**

31 Throughout this response I highlight numerous sources of data. I have not gone into the wider literature at all, or described the data that other organisations gather. All of the material cited in here can be made available to the Commission.

Contact details

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