



31.7.13

Dear Chancellor

Road Schemes in Infrastructure Plans

We write to express our support for investment in transport infrastructure but also our concern at the large proportion of the Government's infrastructure programme consisting of road schemes.

We believe it would be better to reallocate most of this money to rail schemes and to cycling schemes promoting safe, healthy active travel.

History provides lessons in managing transport. Mogridge (r) demonstrated traffic speed in London was affected more by improvements in the *rail* system than by anything happening on the roads - even the replacement of horse drawn vehicles by motor cars. Counter-intuitive doubts persist as to the effectiveness of road building/improvements in improving traffic flow. The SACTRA (r) study showed new roads generate more traffic, respite from congestion being only transient. It is the experience of all of us that the roads fill and that the respite from congestion is transient. In the last decade there has been the added observation that when road building slows down so does the growth of traffic.

If more road space is made available suppressed demand is released and the new space fills up. However questions arise as to how this occurs. We do not observe people abandoning planned journeys in large numbers for fear of the traffic. Suppressed demand is not unveiled in the school holidays – the road space vacated by people on holiday remains vacated and the traffic flows more freely.

However in our publication Health on the Move 2 (r) we believe that we provided an explanation for this. It is now reasonable for policy to be conducted on the basis that building roads will only transiently ease congestion. The figure for long term reduced congestion and long term improved traffic flow in cost/benefit studies of road schemes should be either zero or negative in which case the majority of currently proposed road schemes would no longer be cost/beneficial.

Suppressed demand is not a demand for immediate travel but for relocation. Many people are prepared to commute for more than an hour. Given a 80mph technically potential speed it is only a combination of congestion and expense which prevents the outer

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The Transport & Health Study Group is a network of professionals and academics which promotes the study of and research into the relationship between transport and the health of the population.

suburbs of Manchester being located in Nuneaton. This process can be exacerbated by creating more road space such as widening motorways. Traffic flows more freely (for a while), people are encouraged to commute further but become trapped in their new travel patterns when congestion (inevitably) reasserts itself.

Once it becomes possible for the outer suburbs of one city to be located in several other cities (and vice versa) the range of possible journeys becomes such that, if demand is allowed to express itself, it is impossible for the road system to accommodate it. Using Metcalfe's Law (a mathematical approximation to the behaviour of networks which is not precise but is good enough for the purpose) (r) we have calculated that doubling the speed of traffic, as when A roads with a 40mph average speed were replaced by motorways with an 80mph technical potential, would necessitate at certain points in the network a 128-fold increase in road space - the replacement of a 2 lane A road with a 256 lane motorway. It is impossible to remove these pinch points - only displace them. It may be different in sparsely populated lands, or where people choose to stay together in tight family communities bound to ancestral land, but urbanized communities with freedom of movement that are organized into cities close to each other cannot accommodate the demand for relocation.

The appreciation that suppressed demand is a demand for relocation not for immediate travel explains why it does not occur with temporary release of road space and why it does not occur immediately when new roads are built. However therein lies a danger. During the window when traffic flows freely people will relocate and become trapped in the new situation when congestion reasserts itself. And congestion will indeed reassert itself because congestion is the method by which the unmeetable demand is suppressed.

In conclusion, we believe building new roads (or the improvement of existing roads) to ease congestion is a fruitless expensive exercise. New road building must be justified on other grounds such as freeing road space for other purposes or providing access to new developments

In a separate letter I will outline what we think can be done to ease congestion. I have sent two separate letters because the problem which we describe in this letter exists whether or not you agree with the solution proposed in the other letter and I do not want to confuse the one with the other.

References can be supplied if necessary for the publications marked (r) in the above letter.

Yours sincerely

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