

Transport and land-use: time for a rethink?

Hugh Barton reports on the results of a major academic research project into future urban form and transport, which throws uncomfortable light on some of the government strategies for tackling climate change.

SOLUTIONS¹ is a recently completed £1.75 million research project that spanned five years and combined the expertise of five universities – Cambridge, Leeds, Newcastle, West of England and University College London. It was funded by the Engineering and Physical Science Research Council. The study – its name is short for 'Sustainability Of Land Use and Transport In Outer Neighbourhoods' – modelled land-use and transport futures and found that, far from cutting transport carbon emissions, current government policies will lead almost inevitably to a significant increase.

SOLUTIONS' strategic-level research involved modelling land use and transport futures up to 2031 in London and the greater South East, and in Tyne and Wear. Current regional and local planning strategies – including Regional Spatial Strategies, Local Development Frameworks and transport policies – were incorporated. The results from these models showed that total carbon dioxide emissions could increase by 34% in the South East and 10% in Tyne and Wear, casting serious doubt on the ability to achieve national targets for emission reductions.

The most alarming conclusion was that even if strategic land use transport policies are changed significantly – i.e. with development being much more compact or dispersed than at present – and congestion charges are imposed across all the major cities, the result is broadly the same: total carbon dioxide emissions will continue to increase. Essentially the reason is simple: the momentum of social and economic change is such that it overwhelms any benefits that might be gained from extra investment in public transport or a better balance between employment and housing. Therefore new solutions must be adopted.

The second major conclusion concerned housing supply and demand. In the London and greater South East region – accounting for over a third of the UK population – the research strongly backed the conclusions of the 2004 Barker review that strict containment of our cities is curtailing housing supply, at a significant economic, social and environmental cost. The over-reliance on brownfield development, often in the form of flats, together with greenbelts



that constrict urban growth and squeeze development into inappropriate locations, forces up housing prices, exacerbates social exclusion, increases travel distance and reduces economic competitiveness. The strong recommendation from SOLUTIONS is to find ways (despite the current economic difficulties) to open up new options for housing supply.

Results drawn from SOLUTIONS local level research, involving empirical analysis of local facilities and household travel in 12 suburban neighbourhoods, were also salutary. The studies showed that most recent developments, far from being an improvement on older localities, showed the most carbon-intensive behaviour. The level of car dependence for 'local' trips was 80% in some neighbourhoods, while others, older but socially quite similar, were only 40% car dependent. This has some (modest) implications for emissions, but huge implications for the level of physical activity. It suggests current policies and practice are creating 'obesogenic' environments, where sedentary lifestyles are implicitly encouraged.

It was also clear that the nature of intensification in suburbs is unpredictable: high-density brownfield development is occurring not only close to local centres and good public transport but also in less accessible locations, forcing high car ownership and use. The signals given by government to local authorities and house builders are often resulting, despite good intentions, in unsustainable development.

There were some more positive results from the SOLUTIONS research, however. In growth areas where alternative neighbourhood designs were

explored, the most successful forms – often based on local high streets and graded densities – gave the *opportunity* for very high levels of active travel (walking and cycling to get somewhere) and commensurately low innate car dependence. The results suggest that walkable and viable places can be created and that people will take the opportunity to walk in these localities. Thus the empirical evidence from the research is hopeful. While there are clear differences in behaviour between different groups in the population, the dominant factor determining whether people walk or not is distance. If we can build and evolve places that really create attractive, accessible, safe environments, then people will walk and in turn contribute to reducing carbon emissions from transport.

Nevertheless, the overall message from SOLUTIONS holds little comfort. Strategic and local trends are moving in the wrong direction, despite government policies. This will seriously undermine efforts to meet national targets to reduce greenhouse gas emissions over the next decade or more. But on the positive side, the study shows that we can adapt neighbourhoods, where there is development pressure, to be progressively more efficient and much less carbon hungry.

Professor Hugh Barton was co-investigator of the SOLUTIONS project. He is director of the WHO Collaborating Centre for Healthy Urban Environments at the University of the West of England, Bristol.

References

1. SOLUTIONS website; <http://www.suburbansolutions.ac.uk/>