

What will the project deliver?

The outputs from this four-year research project, which started in April 2004, will help to achieve an improved quality of life and a more sustainable future.

SOLUTIONS aims to deliver:

- Detailed policy guidelines for the planning and design of built forms and transport systems for outer-city development areas
- A best practice guide for local authorities, practitioners, and developers
- Specific design recommendations for the case study areas

What is the time horizon for the research?

The planning horizon for testing designs is 25 years. This has the advantage of being well beyond current Structure and Local Plan horizons, and coincides with the obligations of the ODPM regional offices in relation to urban capacity and regional planning guidance.

Who is funding this project?

SOLUTIONS is funded by the Engineering and Physical Sciences Research Council (EPSRC), as part of the Sustainable Urban Environment (SUE) programme. The project is also supported by contributions from the non-academic partners.

Who is involved?

SOLUTIONS consists of a strong interdisciplinary team drawn from five universities with a proven track record in transport, land use, planning and environmental research. The consortium is supported by many non-academic partners including central government departments and local authorities.

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Academic partners

University of Cambridge
University of the West of England
University of Leeds
The Young Foundation
University of Newcastle upon Tyne

Main non-academic partners

Bristol City Council
Joint Strategic Planning and Transportation Unit, Bristol
Government Office for the South West
North Somerset Council
Cambridgeshire County Council
Cambridge City Council
Cambridgeshire Horizons
Cambridge Futures
Department for Transport
Thames Gateway London Partnership
Transport for London
North East Assembly
Office of the Deputy Prime Minister
Highways Agency
Institution of Civil Engineers

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Sustainability Of Land Use and Transport In Outer Neighbourhoods



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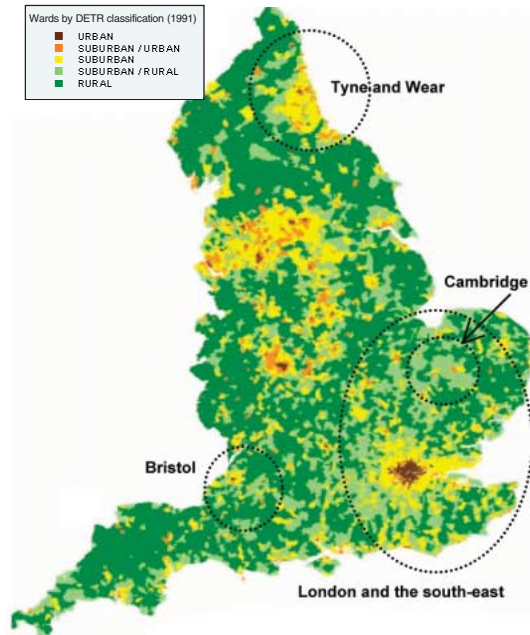
SOLUTIONS investigates the sustainability of land use and transport in outer city neighbourhoods, focusing on the design of spatial plans and transport systems. The research aims to make a significant contribution to the key questions of how far, and by what means, can towns and cities be planned so they are economically efficient, socially inclusive and environmentally sustainable.

Why study outer city areas?

Outer-city areas include suburbs, urban fringes, out-of-town developments and satellite settlements. These areas have generally received less attention in spatial planning and urban design research, compared to city cores. The importance of outer city areas should not be underestimated because most people live there and they are where most new development takes place. Typically, these areas also depend on high levels of car ownership, and are characterised as low density, dispersed development. It could be argued that such areas are successful in economic terms but may not be necessarily compatible with the current planning system, which is now promoting higher densities and more compact, integrated development.

How to deal with this challenge?

Owing to such multi-faceted issues, studying outer city areas is a major challenge. It requires a study framework that brings together a range of academic disciplines and pays attention to both strategic (city-wide) and local (neighbourhood) scales.

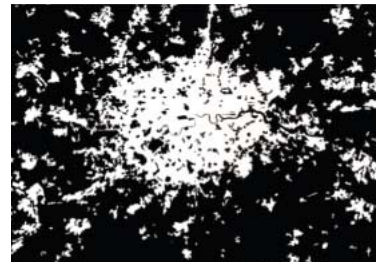


Locations of case study cities

SOLUTIONS adopts a case study driven approach addressing the cities and environs of Bristol, Cambridge, London, and Tyne & Wear. These areas represent a huge variation in scale and characteristics, and they are all experiencing high pressure for growth in outer-city areas. The research project has three key components:

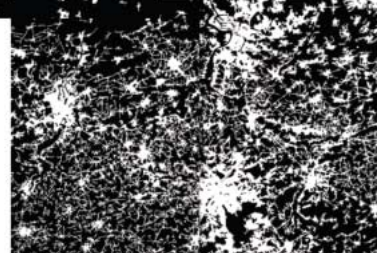
(a) Design and test options for the city

This identifies and tests the main types of urban forms and transport policies for cities. Examples of urban form include: the high density 'compact city'; the 'edge city' that expands by development around its periphery into the green belt; new 'satellite towns', built beyond the green belt; and free market development ('sprawl') without green belt regulations (compare diagrams of London and Flemish regions below).



London: Regulated development with green belt and satellite towns

Source: Adapted from Corine Land Cover, European Environmental Agency



Flemish region: 'Free market' development

Transport policies addressed include public transport improvements, traffic restraint by road pricing, and highway improvements. The research will test different combinations of urban forms and transport policies using sophisticated computer models of land use and transport interaction.

(b) Design and test options for neighbourhoods

This identifies and tests the main types of neighbourhood forms (including pods, cellular and linear forms) and transport networks (including grid and cul-de-sac layouts). Options will be tested using a combination of quantitative and qualitative methods, including an assessment of accessibility. Computer models are being developed to test the sustainability of these options by a detailed simulation of where people will live and how they will travel.



A traditional suburb on a grid network with mixed-use development and high permeability for pedestrians and cyclists.



A contemporary single-use suburb with cul-de-sacs to avoid traffic and distributor roads to facilitate car use.

(c) Assessment of options

This identifies economic, environmental and social criteria appropriate to the evaluation of land use and transport designs. The outputs from the city and neighbourhood exercises are then presented in an integrative transparent framework that allows stakeholders to understand how each design scores against sustainability objectives.