

An aerial photograph of a large-scale infrastructure project, possibly a railway or highway interchange, with a complex network of tracks and roads. The image is overlaid with semi-transparent blue and green lines and shapes that highlight specific sections and structures. The background is a dark, textured aerial view of the site.

FORESIGHT

Intelligent Infrastructure
Futures

Next Steps

OFFICE OF SCIENCE AND TECHNOLOGY



Introduction

The Foresight project has aimed to provide challenging visions of how science and technology might be applied to the development of intelligent infrastructure systems which are robust, sustainable and safe. In particular, the project has focused on the transportation of goods and people and the alternatives to mass movement.

The project provides a fascinating review of the relevant science, as well as providing a forward look at how the technology that underpins our lives might develop over the coming half century. A series of possible future scenarios has also been created, that allow government and our partners across business and the third sector to think through and prepare for how we might live and travel in 50 years' time.

The project has helped develop a shared understanding of the challenges faced by the wide range of stakeholders involved in developing, managing and using our infrastructure. I am delighted to be able to set out today the next steps that my Department, and its stakeholder partners in and outside government, will be taking to respond to the various findings of this project.

We and other stakeholders will:

- test our policies for robustness using the scenarios. This will ensure that we can effectively manage long-term risks while taking advantage of opportunities
- consider strategic cross-departmental issues to ensure that long-term strategies which respond to the findings of this work are joined up
- work, together with the business community and the third sector, to see how we all can take advantage of the opportunities
- use the material to inform specific strategies
- develop teaching material to feed into the national curriculum and feed the material into relevant public engagement exercises in this area of science.

While the project did not focus on energy, the future cost of energy and its impact on the environment will have a significant effect on the way that we use intelligent infrastructure. So, I will feed the findings of this work on to those responsible for the Energy Review.

In one year's time I will review progress against this plan to ensure that we capture the many opportunities the project has highlighted.

Dr Stephen Ladyman MP
Minister of State for Transport

1: Test policies for robustness using the IIS scenarios

Owner	Action	Timetable
Advantage West Midlands	Use scenarios in discussions both within the Agency and with partners and stakeholders to encourage debate on the longer-term strategic issues around transport and how we invest in infrastructure for the future.	Q1 2006
Ashford Borough Council	Ashford's Future Delivery Board will host a one-day workshop to consider the implications for its Masterplan, which will double the size of Ashford by 2031. The plan aims to increase public transport's modal share, and improve markedly the public realm and the networks for walking and cycling in the context of the planned physical changes to the town.	Q1 2006
Department for Constitutional Affairs	Use the scenarios to consider long-term implications for citizenship and engagement and the courts.	2006
Department for Education and Skills	Use the scenarios to test Education White Paper commitments on the extended offer on school transport and other pilots.	February 2006
Department for Transport	Use and/or develop the scenarios to inform DfT policy development, which could include identifying corporate risks, planning against DfT's budget guideline and other strategic workstreams.	2006/7
Department of Environment, Food and Rural Affairs	Choose areas of policy to be tested for robustness against the IIS scenarios. This might involve, for example, testing the implications of extending carbon trading and considering how best to guard against social exclusion, particularly in rural areas.	2006
Department of Health	Use the scenarios to consider the implications for public health.	Q1 2006
European Commission	Host a workshop to consider the scenarios and explore implications of IIS findings on EC's Intelligent Transport programme.	Q1 2006
Office of Deputy Prime Minister	Use the scenarios to inform board recommendations for the Digital Cities Challenge, launched Dec 2005.	Q1 2006
ONE North East	Use scenarios and regional expertise to explore future IIS for regional economic growth and regional transport connectivity.	Q2 2006
Royal Commission on Environmental Pollution	Inform their members of the outcomes of the IIS project and encourage use of IIS scenarios to inform member strategies as appropriate.	2006
South East England Development Agency	Use IIS scenarios to inform their board during the consultation process for their Regional Economic Strategy.	February 2006

2: Consider strategic cross-departmental issues

Owner	Action	Timetable
Department for Transport	Lead a multi-departmental group, including DEFRA, DfT, DTI, ODPM, DCA and DH, to consider cross-departmental issues and oversee a strategic joined up response to the findings of this work.	Q3 2006

3: Work with the business community to capture opportunities

Owner	Action	Timetable
BT	Sponsor an event to consider the long-term implications for business. This will be aimed at a broad participant base from relevant industries, including transport, utilities and ICT.	Q2 2006
Confederation of British Industry	Review the implications of IIS findings for their transport infrastructure policy work.	Q1 2006
Dept for Transport/ Newcastle Univ	Include an Executive Session at the Intelligent Transport Systems World Congress in London on long-term futures of intelligent infrastructure, and make Foresight material available to participants.	October 2006
Herman Miller	Commission research to explore the implications of IIS findings for productivity in the future workplace, through its Workplace Intelligence Unit.	Q1 2006
innovITS	Develop a technical architecture and roadmap for an intelligent infrastructure. This would take account of issues such as privacy and market structure. Feed in innovITS expertise to other strands of activity.	Ongoing
Intelligent Transport Systems UK	Develop a new Intelligent Infrastructure interest group, with launch at the ITS-UK annual meeting in Newcastle.	May 2006
International Futures Forum	Use the work to inform a set of scenarios under development with the Foreign and Commonwealth Office to explore the challenges of simultaneously addressing security of supply and climate change, in an international context.	Q1 2006
Mobile VCE	Feed the findings of the project into work with business on the development of ubiquitous services.	Q1 2006
Newcastle Univ/ Dept for Transport	Bring IIS into the next meeting of the international workshop on Future Research Challenges in Road User Charging.	Q1 2006
Organisation and Technology Research	Support the development of a model to help identify areas of innovation in intelligent transport technology which would also present commercial opportunities for businesses in the UK.	Q1 2006

4: Inform specific strategies

Owner	Action	Timetable
Department for Education and Skills	Consider the implications for the e-learning strategy.	Q2 2006
Department for Environment, Food and Rural Affairs	Ask the Sustainable Business Task Force and the Sustainable Development Commission to consider the implications of the findings of the project for their work.	Q1 2006
Department for Transport	Inform the policy framework for intelligent systems in road networks.	Ongoing
Department for Transport	Use IIS work to inform the department's Horizon Scanning work on Hydrogen Infrastructure.	Ongoing
Department for Transport	Inform the OECD steering group for their Global Infrastructure Futures project on the findings of the IIS project.	2006
Department for Transport	Review the implications of the IIS project in respect of ports into the forthcoming Review of Ports Policy.	Q1 & Q2 2006
Department of Trade and Industry	Feed the implications of IIS project into the Intelligent Transport Systems Technology Platform project.	Q1 2006
Department of Trade and Industry	Explore opportunities to use IIS findings through the Intelligent Transport Systems Knowledge Transfer Network managed by innovITS.	Q1 2006
Economic and Social Research Council	Disseminate the findings of the IIS project to decision makers in Research Councils to raise awareness.	Q1 2006
Engineering and Physical Sciences Research Council	EPSRC has a substantial portfolio of research and training activity of relevance to the IIS Foresight project. In planning future investments, EPSRC will consider the IIS Foresight report.	2006
European Commission	Host a meeting to explore the IIS project.	Q1 2006
Institution of Electrical Engineers	Disseminate the findings of the project to the membership through the Institution's magazines, web site and journals and consider its implications to the engineering profession through meetings of its expert committees on communication and transport.	Q1 2006
National Assembly for Wales	Transport Wales is in the forefront of the development of intelligent infrastructures for the operation and management of its road network. The implications of the findings of the IIS project will inform policy as NAW moves further towards fully integrated transport systems.	Ongoing

4: Inform specific strategies (continued)

Owner	Action	Timetable
Natural Environment Research Council	NERC's Centre for Ecology and Hydrology will use IIS reports to inform input to UK Energy Research Centre theme on Environmental Sustainability. The reports will also be a focus for discussions on NERC's future work on transport infrastructure and the associated environmental sensitivities involved in building, using and maintaining such infrastructures in a world of changing climatic regimes.	2006
Northern Ireland Executive	Department for Regional Development will examine the implications of the projects findings for Northern Ireland.	Q1 2006
Organisation for Economic Co-operation and Development	Use the results of IIS to inform their Global Infrastructure Futures project.	Q1 2006
Office of Deputy Prime Minister	Use IIS project implications to inform ongoing policy development within ODPM, particularly the implementation of the recommendations of the SEU report on 'Inclusion through Innovation'.	Ongoing
Railway Forum	Review the implications of the IIS project for the railways and communicate the findings to others in the industry.	April 2006
Royal Academy of Engineering	Consider the implications of the IIS project, and use it to inform their discussions and statement on Road User Charging.	Q1 2006
Royal Academy of Engineering	Consider the implications for its work on privacy and identity.	Q2 2006
Royal Society for Arts, Manufactures and Commerce	Base a Design for Debate programme on ideas from IIS, to stimulate debate on social, cultural and ethical issues raised by new technology.	Q1 2006
Scottish Executive	Transport Scotland will consider the implications of IIS and how this might influence the future development of strategy for the use of intelligent transport systems in their transport networks.	Ongoing
Smart Market Protocols for Road Transport team	Develop SMPRT tool to test intelligent infrastructure for road pricing in various cities or regions.	2006
Transport for London	Use the IIS findings and scenarios to inform programme development, including demand management, network impact assessment and bids to the Transport Innovation Fund.	Q2 2006
Universities Transport Study Group	Promote intelligent infrastructure as a major theme of transport research in the academic community.	2006

5: Public engagement

Owner	Action	Timetable
Department for Education and Skills	Support the development of lesson plans, which can then be used as part of the national curriculum.	Q2 2006
Department for Transport	Consider how to develop a wider discussion on the issues raised by the project, possibly including media engagement.	2006
Newcastle University	Develop continuing professional development courses, workshops and Masters-level Modules in aspects of Future Intelligent Infrastructure with technology, transport environmental and policy-oriented foci. In collaboration with the Institute of Sustainability and the Environment, Informatics Institute and the Nu Energy centre.	2006

This document is a snapshot of commitments made at the time of publication (January 2006). It should be read in conjunction with the project's other published reports.

This project was one of a number of projects run as part of the Foresight Programme of the DTI's Office of Science and Technology. The aim of the programme is to produce challenging visions of the future, in order to ensure effective strategies now. Further information on this and the four other Foresight projects that have already launched their findings can be found on the Foresight website: www.foresight.gov.uk