Standards and Guidance Documents

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TRAFFIC ADVISORY LEAFLET ITS 1/03

ITS in Local Government

This leaflet is one of a series of documents from the ITS Assist Project. ITS Assist is a Department for Transport (DfT) initiative that aims to encourage and promote across the UK the use of Intelligent Transport Systems (ITS) as tools to implement local transport policy objectives.

ITS Assist will provide advice, guidance and information to local authorities on developing and deploying ITS. As part of this process, the Project Team will produce a series of Advisory Leaflets and Notes as well as Technical Papers. These documents will be updated on a regular basis and made available via the Internet, and on request from the DfT or the ITS Assist Team.

This leaflet provides a brief overview of ITS, discussing:

• Its role within Transport Policy;

• Some reported benefits of ITS;

• Examples of DfT ITS initiative; and

• ITS Deployment Planning.

March 2003
Traffic Advisory Unit

INTELLIGENT TRANSPORT SYSTEMS

Intelligent Transport Systems is a collective name for a number of technology-based approaches that are designed to improve the quality, safety and efficiency of transport networks.

The systems often combine communication, processing and data storage modules to provide integrated travel information and traffic management systems from one or more organisations.

The systems can be provided as stand-alone systems or as part of a package of measures (including traditional techniques) to implement transport strategies or treat specific problems.

ITS most frequently deployed on local roads in towns and cities include:

- Travel Information – the provision of real-time information for public transport users as well as drivers;

- Urban Traffic Control – co-ordinated traffic signal management for improved network efficiency;

- Car Park Management – the use of electronic roadside signs to tell drivers where there are parking spaces available; the signs help drivers to find a parking space quickly, reducing congestion; and

- Bus Priority – a method to change traffic signal timings to reduce the journey time for buses.

ITS AND TRANSPORT POLICY

The Department for Transport's "Transport 2010; The 10 Year Plan" states,

"Our vision for transport in this country is for a modern, safe, high quality network that better meets people's needs and offers more choice to individuals, families, communities and businesses."

This vision will be achieved, in partnership with local authorities and the private sector. It will result in transport strategies that tackle issues of safety, congestion and pollution, and by improving the quality and choice available for all modes of transport. These strategies will also include the provision of integrated transport solutions and make better use of existing transport infrastructure.

Intelligent Transport Systems represent a set of tools that can help achieve the above aims, and the 10 Year Plan emphasises the DfT's commitment to encouraging the exploitation of emerging transport technologies, including ITS. Whilst ITS Assist is focused on local authorities, the DfT carries out a wide range of policy and deployment work to support its transport technology aims more generally. You can find out more from the DfT contact point at the end of this leaflet.

REPORTED BENEFITS

This section highlights some of the benefits that have been obtained from the use of Intelligent Transport Systems in urban traffic management.

The introduction of SCOOT traffic control systems are reported to have produced a reduction in delay of between 10 and 40 percent depending on the method of traffic signal control employed prior to implementation of SCOOT.

The introduction of Parking Guidance and Information Systems results in a more even use of car parks and a reduction in the time drivers spend looking for a space. In Frankfurt the average distance travelled by a group of drivers fell by 30% following introduction of a parking guidance and information system, with consequential benefits for general traffic circulation.

The introduction of the PROMPT Public Transport Priority system in London resulted in a reduction in bus delays of between 22 and 33%.
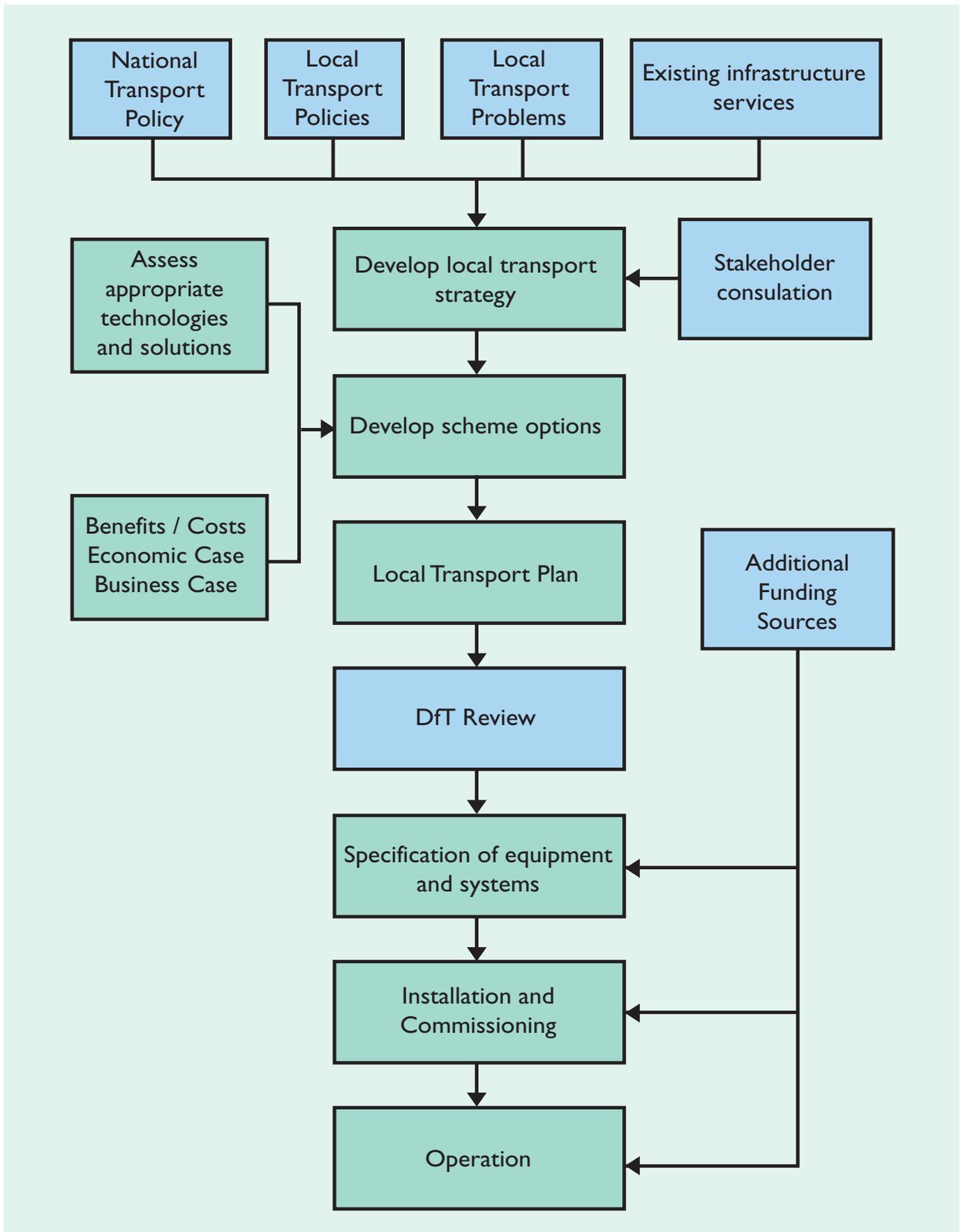
FIGURE TWO: A TRANSPORTATION PLANNING PROCESS STEPS THAT REQUIRE CONSIDERATION OF ITS ARE HIGHLIGHTED IN GREEN

In particular, the integration of applications can also enhance the benefits obtained from the individual applications working in isolation.

DfT Sponsored ITS Projects/Initiatives

The DfT and its agents currently sponsor a number of ITS research projects/initiatives that involve local authorities. The projects will deliver systems for use by local authorities and members of the public. The following paragraphs provide a brief description of some of these projects/initiatives. More information for these can be found from the references listed at the end of this leaflet.

Urban Traffic Management and Control (UTMC): UTMC is developing an open system design specification for traffic management applications. The new specification will enable greater flexibility for procurement and development of new applications. The specification will also enable equipment from different manufacturers to work together more easily.

Transport Direct: Transport Direct is a national travel information service to enable people to plan journeys and to compare routes and prices. It will cover all types of transport within the UK – air, rail, coach, bus and car, and may extend to include information for cyclists

PUBLIC TRANSPORT INFORMATION IN LEICESTER

and walkers. The service is expected to start providing real-time information in 2003. Eventually, people will be able to purchase tickets via the service.

Travel Information Highway: The initiative will provide a one-stop-shop for travel information suppliers, with real time access on present and future network conditions. It will allow local authorities and others to connect to a network and automatically transfer information to those (and only those) organisations they have made agreements with. A charging mechanism is included to

enable organisations to charge for information supplied if they so wish.

Clear Zones: The Clear Zones project aims to reduce pollution and traffic in towns, and enhance manufacturing and export opportunities by developing innovative technologies and transport solutions.

Smart Cards: The development of multi-function smart cards is supported through a number of projects and organisations. These include the Pathfinder Project, ITSO and the Transport Card Forum.

Making ITS Part Of Your Transport Strategy

A Local Transport Plan (LTP) contains strategies designed to deliver a local authority's transport objectives, within a framework of national policy and targets. As part of the LTP preparation process the DfT wishes to encourage local authorities to consider, where appropriate, ITS solutions as part of transport strategies.

PAGE FROM ROMANCE WEB SITE

BUS LANE ENFORCEMENT CAMERA LONDON

The European Union's Carisma and ITS City Pioneers projects, in which many UK local authorities played an important role, offer advice on producing an ITS Plan. UK local authorities have used these ideas, and have confirmed the benefits of such an approach across a variety of ITS applications.

STEPS TO DEPLOYMENT

The following section illustrates, in outline, possible steps to deployment of ITS within the existing transport planning process (see figure two).

Of course, ITS are only one of a range of tools that can be used to resolve transportation problems and meet local and national policy objectives. The planning process will involve choosing the most appropriate tool for the situation. In addition, ITS can complement other more traditional measures. For example, local authorities have successfully used bus priority at signals and real-time information at bus stops in combination with bus lanes, improved bus-stop shelters and modern buses to encourage greater use of public transport.

Within Figure Two, those steps that require consideration of ITS are highlighted in blue.

FINDING THE RIGHT SOLUTION

Once local transport problems have been identified, planners develop local strategies to resolve or mitigate the problems. At this step, planners should consider ITS as one of a range of tools to implement the strategies. The ITS City Pioneers 'ITS Planning Handbook' contains a number of suggestions for developing an ITS Deployment Plan and looks at this topic in more detail.

FUNDING

Traditionally, local authorities obtain funding for transport projects largely through the LTP programme. This funding can be used for both conventional and ITS projects. Other funding that may be available for ITS includes; research funding for innovative ITS, Government grants (e.g. Rural Bus Challenge) and European Union funding options.

Local authorities can also procure ITS through the use of;

- Private Finance Initiatives;
- Public Private Partnerships; and
- Partnering.

PROCUREMENT

The next step is to specify and procure equipment. Existing ITS users have found that involving the authority's IT Department is of benefit to ITS projects. The IT department usually has relevant skills and access to facilities that may reduce capital and revenue costs.

IMPLEMENTATION AND OPERATION

ITS require on-going operational and maintenance support if efficient performance is to be maintained. Additionally, as the technology is developing rapidly, there is also often a demand for new functions and improvements from existing users. As a result, ITS may have relatively high revenue to capital cost ratios, when compared with traditional transport infrastructure. These costs should be considered when planning new services.

Good planning and management of operations is essential if the services are to be run efficiently. Although many of the functions can be automated, the services can be complex so that skilled staff are needed to operate and maintain them.

An important benefit of ITS is that it can be developed/modified relatively easily. ITS can be modified as situations or objectives change, which means that authorities can adapt a system to a new environment at a relatively low cost, when compared to modifying traditional infrastructure.

AIR QUALITY MONITORING EQUIPMENT

FURTHER INFORMATION

The following references provide further information about some of the topics discussed in the text.

Intelligent Transport Systems for Britain's Road Infrastructure - ITS-UK, DfT (2001)

Automotive Intelligent Transport Systems in Britain - ITS-UK, the Society of Motor Manufacturers and Traders Limited, DTI (2000)

TRL Report 220, Review of the potential benefits of Road Transport Telematics - TRL (1996)

TRL Report 342, Review of telematics relevant to public transport - TRL (1998)

UTMC – www.utmc.DfT.gov.uk

ITSO – www.itso.org.uk

Pathfinder Project – www.lgolpathfinder.gov.uk

Transport Direct – www.dft.gov.uk/itwp/transdirect

e-mail: transportdirect@dft.gov.uk

Foresight Vehicle – www.foresightvehicle.org.uk

Travel Information Highway – www.tih.org.uk

Clear Zones – www.clearzones.org.uk

ITS Planning Handbook - ITS City Pioneers, ERTICO – (available from the DfT)

CONTACTS

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To find out more about the wide range of ITS-related initiatives and projects supported by DfT, and the development of ITS policies to encourage and promote greater deployment of ITS, please contact Transport Technology and Telematics division of the Department for Transport at:
its@dft.gsi.gov.uk

REFERENCES

[1] Transport 2010; The 10 Year Plan. The Department of Transport Local Government and the Regions, July 2000

[2] Benefits of ITS Deployment in the UK R. Brown, A Stevens, J Miles – Paper for the ITS World Congress Turin 2000.

[3] ITS City Pioneers Toolbox. Paul Kompfner et al (1998): ERTICO

[4] PROMPT: Field trial and simulation results of bus priority in SCOOT. Hounsell, N: McLeod, F; Bretherton R; Bowen G (1996): IEE, Road Traffic Monitoring and Control, 23-25 April, Conference Publication, No 422. pp 90-94

Department for Transport	Scottish Executive	Llywodreth Cynulliad Cymru Welsh Assembly Government
Requests for unpriced TAU publications to: Charging and Local Transport Division, Zone 3/23, Great Minster House 76 Marsham Street, London, SW1P 4DR. Telephone 020 7944 2478 e-mail: tal@dft.gsi.gov.uk	Within Scotland enquiries should be made to: Neil Weston, Scottish Executive, Development Department, Transport Division 3, Zone 2-F, Victoria Quay, Edinburgh, EH6 6QQ, Telephone 0131 244 0847 e-mail: neil.weston@scotland.gsi.gov.uk	Within Wales, enquiries should be made to: Welsh Assembly Government, Transport Directorate, 2nd Floor, Cathays Park, Cardiff, CF10 3NQ Telephone 029 2082 5111 e-mail: cone@wales.gsi.gov.uk

Cycling   Traffic Management   Walking   Bus Priority Systems   Parking   Signs and Signals   Intelligent Transport Systems