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**Third Annual Thematic
Research Summary –
Land Use Planning**

EXTR@Web Project

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Further information on EXTR@Web's editorial team for Thematic Research Summaries can be obtained from Annex III.

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Abbreviations and Acronyms Used

AG	High level Advisory Group (to the EXTR@Web project)
BG	Benchmark Group (associated with the EXTR@Web project)
CEEC	Central and Eastern European Country
DG TREN	EC Directorate-General for Energy and Transport
EC	European Commission
EFTA	European Free Trade Association (Norway, Iceland, Switzerland, Liechtenstein)
ERA	European Research Area (EU, EFTA and CEECs)
EXTR@Web	Exploitation of Transport Research Results via the Web (DG TREN FP 5 Accompanying Measure project)
EU	European Union
FP 4 (5, etc)	EC Fourth (Fifth, etc) Framework Programme
PAG	Programme Analysis Group (part of EXTR@Web project)
RTD	Research and Technical Development
TRKC	Transport Research Knowledge Centre; TRKC website at europa.eu.int/comm/transport/extra

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1. Introduction

This paper provides a structured guide to the results of Research and Technical Development (RTD) projects relating to **Land Use Planning**, carried out in transport research programmes throughout the European Research Area (ERA).

It is one of a series of 28 papers. Two further from an original set of 30 transport themes – i.e. Long-distance Transport and Financing Tools – have been discontinued as separate reports, though all related projects will be covered elsewhere in Thematic Research Summaries.

	Paper no.	Transport theme
Dimension 1	1.1	Passenger Transport
	1.2	Freight Transport
	1.3	Urban Transport
	1.4	Rural Transport
	1.5	Regional Transport
	1.6	EU Accession Issues
Dimension 2	2.1	Air Transport
	2.2	Rail Transport
	2.3	Road Transport
	2.4	Waterborne Transport
	2.5	Other Modes
	2.6	Intermodal Transport
Dimension 3	3.1	Economic Aspects
	3.2	Efficiency
	3.3	Equity and Accessibility
	3.4	Environmental Aspects
	3.5	User Aspects (incl. ergonomics, quality, choice and rights)
	3.6	Safety and Security
Dimension 4	4.1	Decision-support Tools
	4.2	Information and Awareness
	4.3	Infrastructure Provision (incl. TENs)
	4.4	Integration
	4.5	Intelligent Transport Systems
	4.6	Regulation / Deregulation
	4.7	Land Use Planning
	4.8	Transport Management
	4.9	Pricing, Taxation and Financing Tools
	4.10	Vehicle Technology

Of the more than 5600 projects from research programmes the Transport Research Knowledge Centre (TRKC) ultimately has considered, a total of **142** projects deal partly or fully with the issues of **Land Use Planning**.

1.1 How to use this paper

It is recommended that you use this paper to locate RTD (Research and Technical Development) results on sub-themes where you have a particular interest, rather than reading the paper from start to finish:

- Start in Section 2 to get an overview of the scope of the particular theme.
- Read Section 4 that summarises the findings for each sub-theme of interest to you.
- Consult Annex II to identify the individual projects, be they of European or national origin, relating to a particular sub-theme.
- If this is the first time you have used one of the series of thematic research summaries, it is strongly recommended that you read Annex I. This explains the background and purpose of the EXTR@Web project, and the basis upon which information in this document was selected and analysed.

The other sections of this paper can help you to gain an overall picture of the **Land Use Planning** theme, associated policy issues and the background of project EXTR@Web.

The analysis in this paper is the responsibility of the EXTR@Web project team, and does not represent the official viewpoint of the European Commission.

1.2 The link to the Transport Research Knowledge Centre website

Further details on individual projects can be obtained from the Transport Research Knowledge Centre (TRKC) website at: ec.europa.eu/transport/extra

The TRKC website includes summaries and full final reports of individual projects, as well as a variety of analyses, and publications prepared by the EXTR@Web project.

How to best use the online resource:

- The 'Projects & Analysis' section allows the user to specify a project-wide search on 'Publication date', 'Origin', 'Document type', 'Mode', 'Sector', 'Geographic area', 'Policy objective' and 'Tool', or any combination of these criteria.
- This may be complemented, or superseded, by the flexible 'Free text search'.
- On the query result screen, free text search criteria may be refined, as appropriate. Further tick boxes here allow limiting query results according to 'Project status' (five levels).
- Query results are presented in a table, which allows for sorting by column (click on relevant column header for alphanumerical sorting).
- Project-specific summaries may include links to project websites, or provide contact details for the project, where available.

It should be noted that the online Transport Research Knowledge Centre will be updated frequently, though dependent on input from project co-ordinators.

Other parts of the TRKC website cover transport research at Programme level, and expand on transport related issues, e.g. in the 'Links', 'Events', 'Glossary' and 'FAQs' sections.

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2. Scope of theme

2.1 Definition of theme

This tool, **land use planning**, focuses not on the transport system itself, but on the land use patterns which generate the demand for transport.

The overall emphasis is usually on shaping the pattern of development and influencing the location, scale, density, design and mix of land uses in order to reduce the need to travel, reduce the length of journeys and make it easier for people to access jobs, shopping, leisure facilities and services by public transport, walking and cycling.

Another important aspect, not specifically aimed at traffic reduction, is the general problem of matching the traffic impact of developments with the ability of the transport system to cope with the pedestrian and particularly the vehicular traffic they generate – this is generally referred to as ‘development control’. It has long been recognised by transport planners that a change in land-use will often have transport implications, particularly the need to take into account its interaction with neighbouring land-uses and its consequent effect on the adjacent transport system. The assessment of the traffic impact of any proposed development should thus identify the potential transport problems and benefits that would result from the development and any associated traffic management measures and highway alterations necessary to alleviate them.

2.2 Topics included in theme

Land use density and clustering: Density refers to the number of people or jobs in a given area, while clustering refers to common destinations located close together. Density and clustering can be measured at various scales: region, county level, municipal jurisdiction, neighbourhood, census tract, city blocks or individual campuses and buildings. Density and clustering can have significant impacts on travel patterns through the following mechanisms:

- Land use accessibility: the number of potential destinations located within a geographic area tends to increase with population and employment density, reducing travel distances and the need for automobile travel.
- Transport choice: increased density tends to increase the number of transportation options available in an area due to economies of scale.

Land use mix: Mixed land use (such as locating appropriate businesses and public services in or adjacent to residential areas) can reduce per capita vehicle travel. It tends to reduce the distances that residents must travel for some services, and allows more use of walking and cycling for such trips.

Public transport-orientated development: Households living in neighbourhoods orientated to public transport tend to own fewer cars, and people working in such areas are more likely to commute by alternative modes because they do not need a car to run lunch-time errands.

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Site design and building orientation: People tend to walk more and drive less in areas with traditional pedestrian-oriented commercial districts where building entrances connect directly to the sidewalk than in areas with car-orientated commercial strips where buildings are set back and separated by large parking areas.

Cumulative Impacts: The transport effects of density and clustering, land use mix, public transport access, street design and building design tend to be cumulative. As an area becomes more urbanised (more dense and mixed activities, higher land prices and less parking), transportation diversity tends to increase, with fewer trips by car and a greater portion of trips by walking, cycling and public transport.

The above summary of topics describes the principal breakdown of technical, organisational and managerial aspects that come under the theme, whereas Chapter 4 of this document reflects sub-themes according to actual priorities in transport research policy.

There are sub-themes in Chapter 4 for which research results have not been identified within the EXTR@Web project. Some possible explanations for the lack of research results may include:

- Lack of new research (particularly for the sub-theme entitled ‘Parking standards for new and possibly existing development, particularly for private non-residential (PNR) parking’);
- research relevant to the ‘Developer contributions to infrastructure or to its financing’ is more directly associated with financing; and
- there has been little or no experience on ‘Value capture taxes’ which may explain the lack of research within this sub-theme.

For more details please refer to the summary table in Chapter 4.

2.3 Significance of theme

Since all travel is generated by land use and the type and intensity of the activities that take place on parcels of land, the potential significance of land use planning as a means of managing the total demand and type of demand for travel is self-evidently large. However, there are few case studies of land use schemes which have quantified the real travel-reduction effect. The main reason for this is the difficulty of comparing before and after conditions for an instrument that takes so long to implement and for effects to be felt. Despite the comparative lack of research on the effect of land use policies and thus on their significance, some observations may be made concerning the effects of land use patterns on travel behaviour.

Per capita private car travel tends to decline:

- With increasing population and employment density, particularly if clustered;
- with increased land use mix, such as when commercial and public services are located within or adjacent to residential areas;
- in areas with attractive and safe streets that accommodate pedestrian and bicycle travel; and
- with the presence of a strong, public transport system, particularly when integrated with supportive land use.

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Larger and higher-density employment centres tend to have lower rates of private car commuting because they tend to support alternative travel modes (more public transport, ridesharing, pedestrian and cycling) and have local amenities such as cafes and shops.

Most land use strategies are mutually supportive, and are more effective if implemented together and in conjunction with other instruments. Some land use management strategies that improve access could increase rather than reduce total vehicle travel unless implemented with appropriate additional management strategies.

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3. Policy context

The European Commission considers that:

- “Urban areas play an important role in delivering the objectives of the EU Sustainable Development Strategy;
- the quality of life of European citizens is directly influenced by the state of the urban environment; and
- a high quality urban environment also contributes to the priority of the renewed Lisbon Strategy to ‘make Europe a more attractive place to work and invest’. The attractiveness of European cities will enhance their potential for growth and job creation, and cities are therefore of key importance to the implementation of the Lisbon Agenda.” [2].

Land use and transport are interlinked as land use affects and is affected by transport policy. To have an efficient and effective transport system implies getting the land use planning right, and planning urban development implies getting the transport access right. In other words, the different policy spheres and disciplines have to work together to deliver the best results for the functioning of a town or city.

A range of policy measures is available to influence travel demand. Of these, land use planning measures can contribute, but these may take a long time to take effect. The conversion of existing building stock and neighbourhoods takes place at a slow rate of change – a typical figure for the rate of turnover of the urban fabric is 1% per year. Therefore, the switch from, say, a policy of minimum housing density and maximum parking standards to a policy of maximum housing density and minimum parking standards will take some years to have an effect, since a large proportion of the existing urban development will already be laid out to previous standards.

On the other hand, this long term nature means that land use planning measures can set the physical pattern upon which mobility patterns are based for generations. Put another way, once good practice has been invested in, it is less easily undone. The suburbs of the early 20th century – built to low density but before mass car ownership – have meant that car-orientation has been ‘built in’ to those localities for decades. This also implies that if we can ‘build in’ sustainability-oriented (e.g. travel-minimising) features to new development, we could expect these to be a worthwhile investment prevailing over decades to come.

The White Paper “European transport policy for 2010: time to decide” [8] states that one of the measures needed to shift the balance of transport include urban and land-use planning policy to avoid unnecessary increases in the need for mobility caused by unbalanced planning of the distances between home and work.

The “Citizen's Network” Green Paper [14] stated that better planning of land use could help bring about a more balanced transport system. Such planning includes ensuring that businesses and other activities are concentrated in areas well served by public transport, and reducing distances between residential areas and shops and schools. The Green Paper claimed that “implementation of land-use rules aimed at improving access to work and other services offered an opportunity to improve passenger transport systems and reduce the need to travel for mobility.”

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Such strategies to achieve this include:

- Concentrating residential development at stations along public transport corridors;
- creating a high density of trip-attracting activities in central areas well served by public transport; and
- issuing guidelines which try to ensure that new development is accessible to public transport.

There have been a great variety of studies and results into the effect of land use planning measures on travel. The general themes are well known, but the robustness of results is not necessarily consistent, and the exact extent of cause and effect is not conclusive. Even where results appear to show clear correspondence between indicators, this clarity does not necessarily prove a straightforward underlying relationship. Often there is a complexity of factors involved, relating to particular people and localities involved. Nevertheless, the general impression of the planning policy contribution – that denser, more compact, mixed use settlements, and medium-large settlements tend to exhibit a greater propensity for travel by public transport and on foot, and to generate shorter journeys – is one often supported by evidence, and rarely if ever diametrically contradicted [21].

Paulley and Pedler [22] summarise some relationships of land use planning which affect trip lengths and transport mode choice:

- Higher residential densities lead to shorter trips and lower levels of car use;
- higher employment density leads to greater public transport use but often over longer distances;
- mixed development leads to shorter trips and lower levels of car use;
- ‘traditional’ neighbourhoods have shorter trips and lower levels of car use than car orientated suburbs;
- developments which are close to suitable public transport services generate higher levels of public transport use; and
- larger conurbations have lower trip lengths and more public transport use.

However it was found that none of these points affect trip frequency significantly.

The European study TRANSLAND [22] states that the EC can play a stimulating role in the development and implementation of policies in the field of integrated land-use/transportation planning. This may be through enhancing the exchange of good practice experiences, the enhancement of further knowledge development, the incorporation of effective and feasible planning concepts and institutional innovations, and further harmonisation in the field of planning regulations and procedures, both within the member states and at the EU level.

The Environment Directorate-General at the European Commission (DGEnviro) has coordinated a series of working groups on aspects of the development of its Thematic Strategy for the Urban Environment. While no new research was conducted, these groups have provided useful summaries of what is known. The priority themes covered by the groups were: Sustainable Urban Transport, Sustainable Urban Management, Sustainable Urban Construction and Sustainable Urban Design. The objective of all four working groups was to identify the barriers to the implementation of the ‘best practice’ techniques in the European urban areas and to propose specific measures and actions that can be taken at the European level to overcome these barriers.

The European Commission’s Thematic Strategy on the Urban Environment outlines the following policy dimensions of land use planning:

- The interrelation between problems associated with poor quality of the built environment and socio-economic problems;
- the need for integrated approaches to managing the urban environment;

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- land use planning as an integral part of transport planning;
- appropriate land-use planning as a means to reduce urban sprawl and the loss of natural habitats and biodiversity; and
- land use policy measures aimed at avoiding urban sprawl through high density and mixed-use settlement patterns and hence contributing to reduced natural resource use per capita. [2]

While land use distribution and the design of development does not necessarily itself cause shifts towards more sustainable travel behaviour, it can provide choice and *support* more sustainable behaviour – and at least improve on previous practice in which the most sustainable options were often ‘designed out’ from the outset.

A combination of complementary land use planning measures can provide an integrated package where each element reinforces each other towards the ‘more sustainable’ outcome.

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4. Synthesis of findings from completed projects

Research projects contributing to the theme of **Land Use Planning** can be categorised under the following sub-themes:

- Land use planning towards more sustainable transport;
- parking standards for new and possibly existing development, particularly for private non-residential (PNR) parking;
- developer contributions to infrastructure or to its financing;
- value capture taxes; and
- land use and transport model development.

You may wish to further consult the following Thematic Research Summaries that present research findings which are complementary to those covered in this paper:

- D2.E-1.3 Urban transport;
- D2.E-1.4 Rural transport;
- D2.E-3.1 Economic aspects;
- D2.E-3.4 Environmental aspects; and
- D2.E-4.3 Infrastructure provision.

Results from the following **17** projects have been included in this Thematic Research Summary:

Research sub-theme	Contributing projects
Land use planning towards more sustainable transport	ASTRAL; BAHN.VILLE; C8; ECOCITY; HITRANS; IFPLUT; PLUME; SCATTER; TRANSECON; TRANSPLUS; VELO.INFO
Parking standards for new and possibly existing development, particularly for private non-residential (PNR) parking	None
Developer contributions to infrastructure or to its financing	None
Value capture taxes	None
Land use and transport model development	IASON; ISHTAR; PROPOLIS; PROSPECTS; SUTRA; UG220

Detailed findings and policy implications for individual projects can be found in Annex I. Please refer to acronyms and project titles, respectively, listed above.

4.1 Land use planning towards more sustainable transport

4.1.1 Research objectives

The diverse objectives of various projects related to this sub-theme were to:

- Analyse the mechanisms and effects of urban sprawl, to evaluate measures aiming to control or reduce sprawl, and to provide policy recommendations to cities, in particular in the context of cities implementing new suburban public transport services.
- Develop settlement patterns for sustainable cities, emphasising the implications for an environmentally compatible transport system and furthermore creating a framework for the integration of sustainable solutions across all relevant sectors to generate the model of a city with an urban environment promoting sustainable lifestyles - implying higher quality of life and reduced consumption of resources.
- Show the importance of linking regional planning and local area planning and inform professional staff in Local Authorities and transport service providers/planners with a view to reviewing the traditional ways of approaching land use and transportation planning.
- Increase the understanding of how to develop integrated transport solutions to the demand for travel at the local level that is consistent with the strategic policies and programmes.
- Identify best practices in the organisation of land use and transport (LUT) policies in order to achieve a sustainable pattern of transport and land use in European cities and regions, promoting economic, social and environmental improvement.
- Examine, through current and past experiences in Germany and France, the implementation of regional rail-based transport (tram-train, regional tram, railcars, etc), and the importance of integrating both spatial planning and transport issues to foster sustainable urban and traffic development, especially on the periphery of cities.
- Support the introduction of high quality public transport in medium cities. High quality public transport refers to cost-effective solutions like tram-train, light rail, quality bus etc. A key criterion is the ability to compete with the private car for everyday travel.
- Conduct case study research to assess economic development effects stemming from urban transport policies and investments and to examine the supporting policy and organisation frameworks.
- Review and analyse available evidence and experiences regarding socio-economic impacts of urban transport policies and investments in Europe and the USA.
- Facilitate the transfer of innovation in the field of planning and urban mobility from the research community to end users in the cities of Europe, synthesize results of relevant national and international projects and establish a system for benchmarking the performance of cities.

4.1.2 Main findings

A group of European studies provide an insight into the measures to tackle urban sprawl.

A European project has recommended a package of policies combining (1) fiscal measures on suburban residential developments and offices choosing inadequate locations (i.e. locations poorly served by public transport) (2) transport pricing (increase of car use cost and reduction of the fare of public transport, but in the urban centres only) and (3) more recourse to innovative housing design (intermediate between collective and individual

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housing) in order to meet simultaneously the individual household aspirations and the collective density criteria. Further to the technical policy recommendations, the project has recommended soft measures to tackle urban sprawl such as integrated strategies, coordination and cooperation between municipalities and between institutions and players in general. Soft measures should contribute to create a common culture at a supra-municipal level, to enable consensus building, a consensus about the objectives and the ways to reach them. These points are key elements to achieve a more sustainable urban development.

Another European project has identified strategies for planning the structure of model settlements which give priority to the requirements of sustainable transport modes. To promote non-motorised transport modes and make an urban structure appropriate for pedestrians (and for cycling), short distances (requiring a compact city, a balanced mixed land use and a limited size of the total area) and attractive pathways through a diversified surrounding in public spaces of high aesthetic quality were found to be most appropriate. Most important for public transport was the selection of sites for new construction, respectively for a new settlement to achieve a linear polycentric development and a decentralised concentration in walking distance around stops (stations) providing for a high passenger potential. The project has recommended promoting a framework of incentives and legal/administrative instruments to encourage and support sustainable urban development and design, while discouraging the development of sprawl.

European research was conducted into the role of high quality public transport in curtailing urban sprawl. Cities have spread to sprawl many kilometres because of increasing car use. The most successful cities have used high quality public transport as part of an overall strategy that has included not only land use measures, but also complementary policies to restructure and market public transport – and to limit the use of the car.

Economic and spatial development public transport investment can cause substantial changes to land use patterns (spatial sprawl, re-urbanisation, commercial concentration, etc.) whereas bicycle investments indicate support of residential land use in central areas. The improvement of public transport and car accessibility in outer regions of conurbations stimulates migration from the city centre to the outer city regions (if land is available). The improvement of public transport accessibility in built up areas within a conurbation can also stimulate follow up investments.

An Irish study has conducted research into planning development densities and mix to promote more sustainable transport solutions for the travel needs of future developments, recognising the difficulty of implementing the regional transport strategy through the existing statutory planning instruments. To address this, a programme of Integrated Framework Plans for Land Use and Transport (IFPLUTs) was proposed. The Integrated Framework Plans (IFPs) are literally the framework for land use and transportation for the short and long term, whether it is statutory development plans, retail strategies, or the implementation of bus, rail or road proposals. To demonstrate the outcomes of the IFPLUTs, the project considered the example of two areas in Greater Dublin and identified the main risks for the development of one of them as a Primary Development Centre. These can be summarised as follows:

- Low employment generation in the area in relation to the population growth;
- limited range of commercial facilities within the area;
- deficient public transport provision; and
- topographical constraints for non-motorised modes.

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French research provided guidelines and methodological tools to local authorities to assist them in the development of urban planning oriented towards rail and intermodal transport to encourage provision and use of public transport. The study has concluded that:

- The importance of proximity (physical and/or temporal) to the station in the use of rail underlines the interest in an urban development close to the stations.
- The existence of a rail service can be an important factor for people choosing where to live: surveys have shown that this is particularly true for young households where there are two working people but only one car. This implies the need for urban construction or renewal programmes to provide a wide diversity of housing types.
- Measures to refurbish and modernise stations improve the image of the whole locality around the station as well as improving services to rail users.
- Where a town is situated some distance from its railway station, the station can constitute a linking element, limiting the effect of urban severance caused by the rail infrastructure.

A group of European and national projects provided an insight into the integration of land use and transport policies towards encouraging public transport use through land use planning and the goals of sustainability. A Swiss research project elaborated on the interdependence between a sustainable transport system and sustainable regional land use planning. It reinforced the claim that regional planning can generally be defined as ‘sustainable’ if it offers short trips and benefits for public and non-motorised transport. A European study further contributed to this topic through the following results:

- Assessment of best ways to combine policies neutralising barriers, ensuring compatibility and transferability between countries and cities;
- identification and development of a consistent set of indicators to evaluate the success of integrated land use and transport (packages of) policies towards the goals of sustainability; and
- identification of practical criteria for land use and transport policies/infrastructures impacts evaluation.

In addition to the above-mentioned research, a European thematic network project has found that integrated land use and transport strategies are more successful than isolated individual policies in either field.

Another group of European projects was largely concerned with the dissemination of knowledge and expertise. The key focus of these projects was:

- The importance of synergy between the research projects;
- the need to identify and disseminate good practice; and
- the development of a web-based knowledge and expertise centre offering support to local authorities on how to incorporate cycling policies into urban planning.

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4.2 Parking standards for new and possibly existing development, particularly for private non-residential (PNR) parking

4.2.1 Research objectives

None.

4.2.2 Main findings

None.

4.3 Developer contributions to infrastructure or to its financing

4.3.1 Research objectives

None.

4.3.2 Main findings

None.

4.4 Value capture taxes

4.4.1 Research objectives

None.

4.4.2 Main findings

None.

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4.5 Land use and transport model development

4.5.1 Research objectives

Selected objectives of various projects contributing to this sub-theme were to:

- Research, develop and test integrated land use and transport policies, planning, appraisal and evaluation tools and comprehensive assessment methodologies in order to define sustainable long-term urban strategies and to demonstrate their effects in European cities.
- Improve existing assessment frameworks by ensuring that direct and indirect impacts are clearly distinguished within the appraisal;
- Perform a systematic and quantitative analysis of the network, spatial and socio-economic impacts of transport investments and policy by refining existing EU-level models and carrying out scenario simulations;
- Learn from the experience of applying the framework in practical contexts so as to provide recommendations for project analysis of transport investments and policies and for the development of supporting tools and databases.
- Build an advanced software suite for the analysis of the effects of short-term actions and long-term policies to improve the quality of the environment, citizens health and conservation of monuments.
- Review the current and emerging possibilities of multi modal modelling, taking into account the development of modelling techniques, the supply of data, the possibilities of computation and the availability of personnel able to develop and use models.

4.5.2 Main findings

In general, the projects contributing to this sub-theme have produced:

- Land use and transport models;
- land use and transport policy instruments;
- decision-support software tools; and
- transport research modelling tools.

For a more detailed technical description of the models and tools on a project-by-project basis please refer to the detailed findings and policy implications for individual projects listed in Annex I. The acronyms of the projects contributing to this sub-theme are listed in the table in the beginning of Section 4.

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Annex I: Contributing projects

Preface This Annex lists all the projects (European and national) which belong to the **Land Use Planning** theme, in alphabetical order of project acronym (for projects with acronyms), followed by projects without acronyms in alphabetical order of the project's name in English. Where results have been made available to the EXTR@Web project, a summary of key findings and policy implications relevant to this theme are given.

In 'Origin' column, use ISO 3166-1 country designators as follows:

Austria – AT; Belgium – BE; Bulgaria – BG; Cyprus – CY; Czech Republic – CZ; Denmark – DK; Estonia – EE; European – EU; Finland – FI; France – FR; Germany – DE; Greece – GR; Hungary – HU; Iceland – IS; International – INT; Ireland – IE; Italy – IT; Latvia – LV; Lithuania – LT; Luxembourg – LU; Malta – MT; Netherlands – NL; Norway – NO; Poland – PL; Portugal – PT; Romania – RO; Slovakia – SK; Slovenia – SI; Spain – ES; Sweden – SE; Switzerland – CH; United Kingdom – UK; Other countries – Oth

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Key findings / Policy implications / Project website or contact			
ARTISTS	Arterial streets towards sustainability	EU	
<u>Project contact</u> ase.svensson@fft.lth.se			
ASI	Assess implementations in the frame of the Cities-of-Tomorrow programme	EU	
<u>Project contact</u> ralf.risser@factum.at			
ASTRAL	Achieving Sustainability in Transport and Land Use	EU	Land use planning towards more sustainable transport
<u>Key findings</u>			
Key messages disseminated by the ASTRAL project included:			
<ul style="list-style-type: none"> • The need to disconnect transport growth from economic growth; • the importance of intra-generational equity issues; • the implications of time lags in the policy process, particularly in terms of land use interventions; • the need to help cities tackle today's problems as well as researching future solutions; • the importance of synergy between the research projects (a key focus of ASTRAL); • the need to identify and disseminate good practice; • the potential of citizen education and awareness campaigns in enhancing sustainability; • the links between transport, land use and Europe's unique cultural heritage; and • the case for policy intervention at a European level. 			
<u>Policy implications</u>			
The project has identified a number of areas for collaboration between the LUTR Cluster projects, and provided links to some 60 related projects worldwide. It has also developed a website through which further collaboration can be stimulated. It has provided the starting point for the more extensive			

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<p>project, PLUME, which involves researchers and end users in the assimilation and testing of research results, and their wider dissemination and exploitation.</p> <p><u>Project contact</u> bmatthew@its.leeds.ac.uk</p>			
BAHN.VILLE	Promoting a rail oriented urban development approach for urban regions in Germany and France	EU	Land use planning towards more sustainable transport
<p><u>Key findings</u></p> <ul style="list-style-type: none"> • The importance of proximity (physical and/or temporal) to the station in the use of rail underlines the interest in an urban development close to the stations. • The existence of a rail service can be an important factor for people choosing where to live: surveys have shown that this is particularly true for young households where there are two working people but only one car. This implies the need for urban construction or renewal programmes to provide a wide diversity of housing types. • Measures to refurbish and modernise stations improve the image of the whole locality around the station as well as improving services to rail users. • Where a town is situated some distance from its railway station, the station can constitute a linking element, limiting the effect of urban severance caused by the rail infrastructure. <p><u>Policy implications</u></p> <ul style="list-style-type: none"> • Bahn.Ville adopted an original, cross-border approach, based on both scientific knowledge and experience at the practice level. It succeeded in promoting sustainable spatial planning and transport at the regional and local level, • The project provides guidelines and methodological tools for local authorities and other partners to succeed in rail oriented urban and regional development. The main results are the exchange of experience, findings on impacts and processes levels, a feasibility study of the schematisation and recommendations. <p><u>Project contact</u> b.puccio@adeus.org</p>			
C8	Interactions transport/land use	CH	Land use planning towards more sustainable transport
<p><u>Key findings</u></p> <ul style="list-style-type: none"> • Pricing measures in particular and improved public transport, support the objectives of regional planning although they cannot prevent the growth of settlements at the edges of conurbations. • The general trend of land use increasing annually by 1.5 per cent (reduced density) will not easily be halted by additional measures. • Regional planning can generally be defined as "sustainable" if it offers short trips, and therefore benefits for public and non-motorised transport. <p><u>Policy implications</u></p> <ul style="list-style-type: none"> • The Regional Planning Policy must improve co-ordination to guide development initiatives to suitable areas, and develop criteria based on sustainability objectives for the design and funding of transport measures relevant for large areas. • The Regional Planning Policy must establish standards and criteria to base the development of 			

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<p>utilisation of soil on a more sustainable response to the growing demand for public transport.</p> <ul style="list-style-type: none"> • The co-ordinating roles of federal/cantonal authorities, and cantonal authorities and communities, needs to be strengthened. • The design and funding of measures for transport must be determined increasingly in accordance with efforts for more sustainable regional planning (e.g. funding contributions for new public transport). • Criteria and standards have to be developed for how the design and funding of public transport services can be made increasingly dependent on a more sustainable settlement structure. <p><u>Project contact</u> pm@metron.ch</p>			
ECOCITY	Urban development towards appropriate structures for sustainable transport	EU	Land use planning towards more sustainable transport
<p><u>Key findings</u></p> <p>Concepts for the Sustainable Model Settlements The concepts for the sustainable model settlements for the selected sites were the main results. Strategies for planning the structure of the model settlements gave priority to the requirements of sustainable transport modes: Most important for making an urban structure appropriate for pedestrians (and for cycling) are short distances (requiring a compact city, a balanced mixed land use and a limited size of the total area) and attractive pathways through a diversified surrounding in public spaces of high aesthetic quality. Most important for public transport is the selection of sites for new construction, respectively for a new settlement to achieve a linear polycentric development and a decentralised concentration in walking distance around stops (stations) providing for a high passenger potential. The evaluation of the plans and concepts for the Ecocity model settlements showed, that quantitative indicators were appropriate to check the quality of the urban patterns designed (e.g. a qualified high density, the share of green areas). But to evaluate the impact of an Ecocity on the natural and social environment (e.g. CO2 emissions) is difficult in this stage, because it is influenced by the behaviour of future inhabitants. Ecocity Consultancy Strategy To meet the identified need for improving the plans for particular Ecocity-sites some experts were selected among the partners to establish an international multidisciplinary group (especially for the fields of sustainable urban planning, transport planning and interactive group dynamics), the so called "Quality Support Group". Members of this group joined the local planning team in a workshop to identify weak aspects of the plans and develop more appropriate solutions by means of an exchange of experience and knowledge. The experience in the project showed, that consultancy by external experts can increase the quality of urban planning by providing additional knowledge.</p> <p><u>Policy implications</u></p> <p>The implementation of model settlement plans is intended to demonstrate, that taking ecological constraints into consideration can actually improve the quality of life and health of the inhabitants of an area. The instruments to assess the ecological quality of a settlement project already in the planning phase as well as the Ecocity-books disseminating the Ecocity-vision and its translation into settlements are a useful support for political and administrative decisions. The model settlements also meet the policy objectives for Sustainable Urban Development in the European Union aiming at the protection and improvement of the urban environment so as to improve the quality of life, safeguard human health and protect local and global eco-systems. A framework of incentives and legal/administrative instruments is needed to encourage, support and promote sustainable urban development and design, while discouraging the development of (not really urban) sprawl. An example</p>			

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<p>for a useful legal instrument to promote the implementation of new urban developments in parts of a town is the "Urban Development Measure" (Städtebauliche Entwicklungsmassnahme) in Germany, which helps regulate the prices for buying and selling plots of land.</p> <p><u>Project contact</u> schubert@wu-wien.ac.at</p>			
HITRANS	Development of Principles and Strategies for Introducing High Quality Public Transport in Medium Size Cities and Urban Regions	EU	Land use planning towards more sustainable transport
<p><u>Key findings</u></p> <p>From closely packed settlements that were limited by the distances that people could walk, cities have spread along the "fingers" of 19th century public transport routes and, in the 20th century, to sprawl many kilometres because of increasing car use. What is the role of high quality public transport in our modern cities? How can we reshape our cities to once again have public transport as our mode of choice? The most successful cities have used high quality public transport as part of an overall strategy that has included not only land use measures, but also complementary policies to restructure and market public transport — and to limit our use of the car. A series of case studies provides some inspirational illustrations of what can be done — as well as some salutary lessons of what to avoid. There are examples of cities regenerating rundown areas, curtailing urban sprawl, building successful public transport oriented communities, ridding themselves of traffic-choked city streets, as well as examples of cities reinventing themselves as attractive places in which to invest and to live.</p> <p><u>Policy implications</u></p> <p>It is possible to implement high quality public transport in medium sized cities (pop. 100,000-500,000). It is recommended to use the HiTrans best practice guides to find the best solutions for your city.</p> <p><u>Project contact</u> arki@rfk.rogaland-fkommune.no</p>			
IASON	Integrated Appraisal of Spatial Economic and Network Effects of Transport Investments and Policies	EU	Land use and transport model development
<p><u>Key findings</u></p> <p>Concerning the linkage between accessibility and economic growth, it was found that the increases in regional accessibility from TENs policy translate into relatively small increases in regional economic activity. For regions in the European core with all the benefits of a central geographical location plus and already highly developed transport and telecommunications infrastructure, additional gains in accessibility through even larger airports or even more motorways or high-speed rail lines may will bring only little additional incentives for economic growth. For regions at the European periphery or in the accession countries, however, which suffer from the remote geographical location plus an underdeveloped transport infrastructure, a gain in accessibility through a new motorway or rail line may bring significant progress in economic development. But, to make things even more complex, also the opposite may happen if the new connection opens a formerly isolated region to the competition of more efficient or cheaper suppliers in other regions. The linkage of a transport model</p>			

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<p>with a regional economic or macro economic model combines the benefits of a transport model, which has a detailed underlying network, with the benefits of a model, which measures the economic effect of changes in transport patterns to economic sectors and captures the effects of various investment strategies.</p> <p><u>Policy implications</u></p> <p>The state of the art of appraisal of transport projects and policies is developing rapidly. However, the TEN-T projects and in particular the opening of Europe to the East poses formidable challenges for transport appraisal. Better transport infrastructure will link together places with quite different labour markets, standards of living and access to goods and services. In such conditions the general conclusions are: -for major projects and policies, a good quality transport sector cost-benefit analysis is vital. -an appraisal that is consistent in its treatment of effects from both national and supranational perspective is capable of dealing with cross-border effects. -the relationship between the total benefit and the benefit measured in a transport-only cost-benefit analysis is understood in principle, but the size of the difference between them in practical cases is as yet poorly understood. -from the perspective of the policy makers, the spatial pattern of gains and losses is important, and spatial economic models can help to identify these. The project has made available a new set of interconnected instruments that now can be used to assess the spatial and economic consequences of transport policies. Besides producing broad pictures of the overall economic impact for the EU, the function of the models is in particular to point the attention of policy makers to those regions, sectors or policy packages where the indirect impacts of infrastructure and pricing policies are above average.</p> <p><u>Project contact</u></p> <p>lta@inro.tno.nl</p>			
IFPLUT	Integrated framework plan for land use and transportation	IE	Land use planning towards more sustainable transport
<p><u>Key findings</u></p> <p>At present there are 11 completed IFPLUTs over the Greater Dublin Area. Two of these IFPLUTs are for Wicklow and Environs and for Arklow and Environs.</p> <p>The main project output from the IFPLUTs for Wicklow and Arklow has been the generation of a plan for the future development of the two areas until 2016. The IFPLUT outlines the basis, general principles, phasing and implementation of the plan and the spatial and transport strategies which will contribute to its success. The plan sets out the development guidelines for the region until 2016 and therefore it is difficult to summarise key findings or results in this section. For additional information or a copy of the IFPLUT please use the contact for further information.</p> <p>As an example of the output from an IFPLUT, the plan for Wicklow and Environs outlines the key development opportunities for the area which are:</p> <ul style="list-style-type: none"> • High population growth (past and expected) in the area mainly due to net migration; • extensive residential zoning included in the Wicklow Environs Local Area Plan; and • significant construction of new road infrastructure (N11, Town and Port Relief Roads). <p>Additionally, the Wicklow IFPLUT outlines the main risks for the development of the area as a Primary Development Centre. These can be summarised as follows:</p> <ul style="list-style-type: none"> • Low employment generation in the area in relation to the population growth; • limited range of commercial facilities within the area; • deficient public transport provision; and • topographical constraints for non-motorised modes. <p>The main achievable target is also set out by the Wicklow IFPLUT. This is a target population for</p>			

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<p>Wicklow Town and its environs, when the IFPLUT reaches its expiry in 2016, of around 25 000. Considering that the 2003 population for the same area was around 11 000, this represents more than a doubling of population.</p> <p><u>Policy implications</u></p> <p>The IFPs do not exist as stand-alone documents. Rather, they are strategic documents that provide a practical long-term context and vision for statutory documents of a shorter life span. They are literally the framework for land use and transportation for the short and long term, whether it is statutory development plans, retail strategies, or the implementation of bus, rail or road proposals.</p> <p>The IFPs provide a strategy for 'intervention' which is broken down into two groups of policy; the first group of policies require immediate intervention and should form the subject of a variation of the constituent statutory development plans, while the second group of recommendations form the strategy which can be considered within the appropriate review period of the plans.</p> <p><u>Project contact</u></p> <p>mickm@dto.ie</p>			
ISHTAR	Integrated software for health, transport efficiency and artistic heritage recovery	EU	Land use and transport model development
<p><u>Key findings</u></p> <p>The ISHTAR Suite includes the following software modules:</p> <ul style="list-style-type: none"> • The Cellular Transport Methodology, developed by ISIS, simulating the effects of policies on the behaviour of citizens; • the Transport Toolbox, which uses the VISUPOLIS model, a recently developed model by PTV integrating VISUM and Metropolis tools; • the Transport Direct Impacts module, which uses the TEE2004 model, developed by ENEA and ASTRAN, models kinematics and cold start effects on emissions, provides emissions of pollutants and noise and the occurrence of accidents; • the Noise Propagation and Pollutants Dispersion Module, using tools provided by ARIA technologies for pollutant dispersion and Soundplan by Braunstein and Berndt for noise propagation; • the Exposure and Impacts on Health module, using TEX by WHO for exposure to pollutants and noise and HIT also by WHO for health risk related to the exposure of pollutants, noise and accidents; • the Impacts on Monuments module, purposely developed for the project by ENEA and PHAOS; and • the Overall Scenarios Analysis Tool, integrating cost-benefit analysis and multi-criteria analysis tools, using LDW software plus software developed by TRaC-LMU. <p>A Software Manager developed by INRETS integrates the various tools in a suite. In general it can be concluded, that the case studies proved the applicability of the ISHTAR suite as a whole or its single modules. As an example in the case of Paris an evaluation of the Car Free Day 2003 and its impact on Air Quality in the central area of Paris was performed. A 60 % decrease in roadside pollution could be estimated. Hence, it can be concluded that ISHTAR can successfully be used in order to estimate the positive and negative effects of measures set in order to improve the air quality in urban areas.</p>			

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<p><u>Policy implications</u></p> <p>Even if the ISHTAR Project represented a very challenging Project for its multidisciplinary approach and its level of integration of different decision support software tools it has shown one of its limits in the modelling of just the urban area. Without taking into account pollutant emitted outside the city boundaries we lose the very high contribution to the urban air pollution due to the background values coming from the industries, agriculture, other cities and so on. In this direction the ISHTAR Consortium identified the need of a 'regional simulator' as essential for a better understanding of air pollution in cities, but also for the exposure to air pollution. In fact the phenomenon of urban sprawl causes difficulties in assessing exposure, as compared to the city centres there are always less inhabitants while the number of commuters is continuously rising. For improving the simulation of air pollution the need of a better simulation of other sources within the city is also required in particular the residential emissions. Another limit, or better, another possible improvement, could be the simulation of combined exposure. It would be interesting to study the interactions of exposure to air and water pollutants, food contaminants, EM sources (non ionising radiations) and Radioactive sources (ionising radiations) with an integrated methodology.</p> <p><u>Project contact</u> negrenti@casaccia.enea.it</p>			
OPAL	Optimisation platform for airports, including land-slide	EU	
<p><u>Project contact</u> eenige@nlr.nl</p>			
PLUME	Planning and urban mobility in Europe	EU	Land use planning towards more sustainable transport
<p><u>Key findings</u></p> <p>One important finding of many projects in the land use and transport research cluster was that integrated land use and transport strategies are more successful than isolated individual policies in either field. Findings include:</p> <ul style="list-style-type: none"> • Land use and transport policies are only successful in reducing travel distances, travel time and the share of car travel if they make car travel less attractive and provide attractive land use alternatives to suburban living. • Land use policies to increase urban density or mixed land use without accompanying measures to make car travel more expensive or slower have little effect as people will continue to make long trips to maximise opportunities within their travel cost and travel time budgets. However, these policies are important in the long run as they provide the preconditions for less car-dependent lifestyles in the future. • Transport policies making car travel less attractive are very effective in achieving the goal of reducing travel distances and the share of car travel. However, they depend on a spatial organisation that is not too dispersed. • Large retail and leisure facilities that are not spatially integrated increase the distances travelled by car and the share of car travel. • Transport policies to improve the attractiveness of public transport have in general not led to a major reduction of car travel, attracted only limited development at public transport stations, but contributed to further suburbanisation of the population. In summary, if land use and transport policies are compared, transport policies are far more direct and efficient in achieving sustainable 			

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<p>urban transport. However, accompanying and supporting land use policies are essential for creating less car-dependent cities in the long run.</p> <p><u>Policy implications</u></p> <ul style="list-style-type: none"> • Better communication of key findings from researchers to the ultimate decision-makers will be advantageous. PLUME has served this purpose by drawing attention to commonly understood findings, as well as to identify gaps and any inconsistencies in findings from research. • The inadequacy of real integration between land use and mobility planning has been evident for many years, and a number of barriers remain. Ideally integrating transport and land use planning needs to be tackled at regional level first, before being tackled at a local (city) level. • It is the responsibility of national governments to ensure that regional land use and mobility planning systems are strong enough to achieve good vertical integration and horizontal integration. • It is important to increase the understanding of the public, politicians and the media about LUTR activities by directly involving them in future research programmes. • End User regions and cities should be involved in the process from the beginning in order to achieve a more integrated approach between land use and mobility planning. Demonstration projects are an important way of achieving this, but the research institutions are still key so that conclusions can be drawn from the demonstrations. • The End User cities participating in PLUME all agree that the network has been of benefit and that European cooperation and networking are positive aspects for improving knowledge and key to the success of achieving integrated policies. • While the land use and transport research programme has substantially increased our understanding of the requirements for sustainable urban land use and transport strategies, the barriers to implementing them and the potential benefits from doing so, several research needs remain. These fall into the following seven areas: human behaviour, technical performance, new trends, land-use and transport relationships, research methods, political aspirations, technical applications. • There are limited opportunities to continue further research in FP6, including an Integrated Project focussed on land use and a small Coordinating Action looking at scenarios for transport and land use. <p><u>Project contact</u> jo.baker@ttr-ltd.com</p>			
PROPOLIS	Planning and Research for Land Use and Transport for Increasing Urban Sustainability	EU	Land use and transport model development
<p><u>Key findings</u></p> <p>The PROPOLIS project has shown that it is possible to use urban land use and transport models as a platform for producing urban environmental, social and economic sustainability indicators that can be used in assessing policy options. The social index deteriorates, except in Helsinki, Naples and Brussels, where the current old polluting car fleet is expected to improve, thus improving the health indicators. However, equity and accessibility indicators deteriorate in all cities. Regulating car speed policies had positive effects on traffic accidents, as intended, but they were not enough to compensate the effects of the worsening opportunity, accessibility and air pollution related indicators. Also the tested public transport policies, increasing speed and service and reducing fares, worked well. In most cases they were environmentally, socially and economically feasible. The combination of public transport policies with car pricing policies produced cumulative positive results and the negative land</p>			

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<p>use effects of the individual policies could be avoided or mitigated. Adopting the above line of actions leads, in the case cities, to a 15-20% reduction in CO₂ emissions, 8-17% reduction in traffic accidents and often to at least small reductions in exposure to noise and pollutants and the total time spent in traffic. Also accessibility to the city centre and services is improved. The socio-economic benefits vary but are typically 1,000-3,000 euro/inhabitant (net present value). It is important to note that the optimum level of the pricing actions is "city specific" and that the optimum levels should be locally defined taking into account the cumulative effects of the individual actions. Bigger, more congested cities seem to need more radical actions than smaller cities.</p> <p><u>Policy implications</u></p> <p>Urban sustainability could be improved only with the coordinated intervention of both local and national decision-making levels. The good results obtained by the combination policies emphasises the need of a close cooperation between the different levels of authorities, as local authorities cannot implement all the policy measures. A good urban policy consists of co-ordinated elements that work together to produce cumulative long-term effects that attain a balanced set of environmental, social and economic goals. These elements may include: -combination of pricing policies directed at car users, with differentiation between peak and other hours as well as congested and non-congested areas, with an appropriate level of pricing of public transport fares; -investment programmes supporting the demand changes caused by the above policies and especially responding to the increased requirements for better public transport speed and service.</p> <p><u>Project contact</u></p> <p>kari.lautso@ltcon.fi</p>			
PROSPECTS	Procedures for Recommending Optimal Sustainable Planning of European City Transport Systems	EU	Land use and transport model development
<p><u>Key findings</u></p> <p>The key results are represented by three Guidebooks: Decision-Makers' Guidebook, Methodological Guidebook and a Policy Guidebook.</p> <p>The Decision-Makers' Guidebook covers the basic issues and describes respectively: the decision-making context, including the freedom which cities have to develop their own policies, the possible approaches to decision-making and their logical structure. Furthermore, the full range of land use and transport policy instruments as well as the barriers to be overcome in using the policy instruments are considered. Finally, these principles are illustrated by comparison with current practice in four case study cities, and recommendations for improvements are drawn.</p> <p>The Methodological Guidebook is designed to support the Decision-Makers' Guidebook. It follows the same logical structure of planning but treats some of the issues in considerably more detail. Its audience will be the professionals who carry out the job. The Methodological Guidebook suggests performance indicators and how to present them; furthermore, it provides detailed advice on how to compute them. It presents a new strategic sketch planning model for predicting the changes in transport and land use systems over time, and describes novel approaches to the optimization of transport policy strategies, which can be implemented with the sketch planning model.</p> <p>The Policy Guidebook provides guidance on the performance of some 60 different policy instruments, covering the broad areas of land use, infrastructure, management and service provision, information, awareness and pricing. For each it provides a description, a first principles assessment, a series of case studies, a review of the potential contribution to transport policy in different contexts, and an indication of those policy instruments best able to complement it. The Policy Guidebook has been es-</p>			

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<p>established as a web based Knowledgebase on Sustainable Urban Land use and Transport, KonSULT.</p> <p><u>Policy implications</u></p> <p>Recommendations are as follows.</p> <ul style="list-style-type: none"> To define all the objectives that legitimately belong under the sustainability field. The suggested objectives are seven, as follows: economic efficiency, liveable streets and neighbourhoods, protection of the environment, equity and social inclusion, safety, contribution to economic growth and intergenerational equity. To draw up simple performance indicators covering (almost) all objectives, so that all of the objectives legitimately belonging under sustainability may be taken into account in appraisal and evaluation phases. To utilize all existing and emerging knowledge in selecting policy instruments to be tested and combining them into strategies in efficient ways. To test the strategies, models should include the important links among transport, land use and the environment. Simple sketch planning models, also including the transport/land use link, will be useful at exploratory stages and for cities lacking the capability to develop a large scale integrated land use/transport model. A comprehensive appraisal of the strategies for sustainability, using the full set of objectives and their performance indicators, and based on the models output, can be feasible and not overly complex. Constrained optimization and other innovative methods are available to discover new strategies well performing with respect to all objectives, and to study trade offs between the objectives and the policy instruments. <p><u>Project contact</u></p> <p>tmay@its.leeds.ac.uk</p>			
SCATTER	Sprawling cities and transport: from evaluation to recommendations	EU	Land use planning towards more sustainable transport
<p><u>Key findings</u></p> <p>The SCATTER project has:</p> <ul style="list-style-type: none"> Performed a comprehensive review of the existing literature covering the topics of urban growth and urban sprawl. Maybe for the first time, a review about sprawl in both United States and Europe was achieved. Developed an original framework of statistical analysis in order to identify and quantify urban sprawl. This framework has been applied to six case cities and highlighted the fact that they had different de-concentration patterns. Performed a literature review and a qualitative analysis of 11 European case studies (including the 6 case cities of the project) to get insights into the theoretical and practical implications of the design and implementation of policy measures to control urban sprawl. The case studies have shown that policies targeting sprawl are inseparable from policies which deal with the problems of modern urban growth. There is a strong emphasis on integrated policies which tackle a series of related issues, and a focus on a regional approach. The other overarching concept is the promotion of the compact city or a form of decentralized concentration. Simulated scenarios of policy measures in 3 case cities (Brussels, Helsinki and Stuttgart) to perform policy impact assessment, using integrated land use/transport models. Besides, a common evaluation framework was set up. The indicators of this evaluation framework mainly tackle concentration/de-concentration of population and employment, mobility pattern, and CO₂ emissions. 			

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<p>First, the simulation results confirmed that public transport investments indeed generate urban sprawl if they extend to the suburban or rural areas. Secondly, the simulation results led to select a package of measures, to be recommended as accompanying measures to new public transport services linking the urban centre and suburban areas.</p> <ul style="list-style-type: none"> • Identified institutional barriers and new ways of cooperation between institutions through the analysis of 6 structures of inter-institutional cooperation existing in the 6 case cities. It has been concluded that a strong metropolitan institution, with strong democratic legitimacy and strong action instruments, will be more efficient. However, the creation of a strong metropolitan institution, depriving partly other authorities of their powers, can be very difficult in practice because of historical and/or political reasons. In such cases, a less formal structure of cooperation between existing institutions is the only feasible solution. • Developed an Urban Sprawl Exploratory Tool (USET). The Urban Sprawl Exploratory Tool is an interactive tool implemented on Internet, intended for local authorities and planning actors involved in decision making. Its objectives are to inform and raise awareness about urban sprawl (especially among authorities of small and medium-size cities), and to explore and monitor variables related to sprawl. The final objective is to provide some help in making a diagnosis about sprawl and building a strategy. • Produced recommendations to local and regional authorities on the basis of the outcomes of the whole project. <p><u>Policy implications</u></p> <p>The message of SCATTER is that one cannot implement new transport services between suburban areas and urban centre without being aware that this will encourage the out-migration of the households and that therefore this requires an accompanying strategy. The package of policies recommended by SCATTER combines fiscal measures on suburban residential developments and offices choosing inadequate locations (i.e. locations poorly served by public transport), and transport pricing: increase of car use cost and reduction of the fare of public transport, but in the urban centres only. SCATTER also recommends to have more recourse to innovative housing design (intermediate between collective and individual housing) in order to meet simultaneously the individual household aspirations and the collective density criteria. SCATTER also recommends soft measures. Further to the technical policy recommendations, the key success factors to tackle urban sprawl are: integrated strategies, coordination, and cooperation, between municipalities and between institutions and players in general. In this clearly multi-dimensional, multi-disciplinary issue, each player holds a part of the solution. Soft measures like symbolic measures should contribute to create a common culture at a supra-municipal level, to enable consensus building, a consensus about the objectives and the ways to reach them. These points are key elements to achieve a more sustainable urban development.</p> <p><u>Project contact</u></p> <p>s.gayda@strateg.be</p>			
SUTRA	Sustainable Urban Transportation	EU	Land use and transport model development
<p><u>Key findings</u></p> <p>Over a three year period, the project has developed and successfully tested in the case study cities Gdansk, Geneva, Genoa, Lisbon, Thessaloniki and Tel Aviv an approach to design consistent policies and strategies for sustainable urban transportation and land use, using the cornerstones of sustainability as the guiding principle: economic efficiency, environmental compatibility, and social equity. The approach developed was based on a broad integration of socio-economic, technological</p>			

Theme: Land Use Planning			Last update: 28 July 2006
Acronym	Project title (in English)	Origin	Research sub-theme
Key findings / Policy implications / Project website or contact			
<p>and environmental issues, within the interdisciplinary and integrative spirit of the Key Action. SUTRA successfully used a scenario analysis approach, embedded in a framework of Indicators of sustainable urban transportation.</p> <p>A cascade of simulation models was used to represent the individual scenarios of urban development. The core of the modelling system is a transportation model that describes an equilibrium-based solution to satisfy the transportation demand expressed in an origin-destination matrix given a transportation network and its capacities and constraints, which feeds a set of environmental impact models. To ensure consistency of the scenario assumption, a techno-economic optimization model was used as the overall framework.</p> <p>The scenarios vary in their assumptions about demographic development, land use development, structural economic development, the availability of new transportation technologies, and citizen's behaviour.</p> <p>Results show that the differences between the scenarios in terms of environmental and public health impacts are considerable, with the virtuous pensioners the most environmentally compatible model.</p> <p><u>Policy implications</u></p> <p>The wealth of information generated by the scenario analysis has been subjected to a first round of analysis as planned, including the comparison in a benchmarking exercise against a much larger initial set of about 80 cities. These data are available on-line on the continuously operating project web server, as part of the ongoing dissemination and exploitation tasks that transcend the actual project duration.</p> <p>Basic results of the initial analysis show that no single measure included in the scenario analysis alone can make a major impact within the ranges of plausible rates of change in the driving forces. Clearly, a well balanced set of integrated measure is necessary to maintain and improve sustainable urban transportation. This set of measures must be defined for each city considering its structural, socio-economic, and technological constraints to find the best, cost-effective solution. For this purpose, the approach and integrated set of tools developed by the SUTRA project is now being made available to potential end users world wide. Exploitation activities are exploring EU programs such as INTERREG, ASIA-URBS, but also UN sponsored efforts such as the WHO's Healthy Cities program in addition to direct, commercial offerings to individual city administrations.</p> <p><u>Project contact</u> info@ess.co.at</p>			
TRANSECON	Urban transport and local socio-economic development	EU	Land use planning towards more sustainable transport
<p><u>Key findings</u></p> <p>Efficiency of Transport Infrastructure Projects The following conclusions can be made in general:</p> <ul style="list-style-type: none"> • When decision of traffic policy are taken, greater priority should be given to the efficiency of investments. It is overriding importance that cost/benefit ratio is carefully weighted and that indirect effects are also considered. • As a general rule, investments in surface public transport with priority route are more efficient than investments in underground public transport. • Investment in light rail systems are more cost efficient than investments in conventional railways. • Improvements of existing rail routes, respectively the reuse of existing routes (for instance suburban railways) are more efficient than newly built routes. • Investments in bicycle traffic with inter-modal interfaces (e. g. bike and ride) are highly efficient. <p>Changes within the Transport System Factors of success in increasing the demand towards the new</p>			

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<p>project as much as possible are firstly to introduce accompanying measures for public transport infrastructure investments. Secondly to support the public transport infrastructure investment by restrictive car-policy measures. Urban Regeneration Large scale transport infrastructure investments can stimulate re-urbanisation developments. Economic and Spatial development Public transport investment can cause substantial changes of land use patterns (spatial sprawl, re-urbanisation, commercial concentration, etc.) in the catchment area of the station whereas bicycle investments indicate support of residential land use in central areas. The improvement of public transport and car accessibility in outer regions of conurbation stimulates migration from the city centre in the outer city regions (if land is available). The improvement of public transport accessibility in built up areas within a conurbation can stimulate follow up investments in the catchment area of stations.</p> <p><u>Policy implications</u></p> <p>In order to maximise the social-economic benefit of a large scale infrastructure investment, factors of success are:</p> <ul style="list-style-type: none"> • Existence of a competent regional authority, which has the vision and power for carrying forward the project (often a person with a strong personality – so-called “project champion”) is the driving force behind a successful project; • existence of a comprehensive transport policy, some times stimulated by a huge transport problem or clear and convincing transport objectives to follow; • intensive co-operation between transport authorities, city authorities, land-use authorities, developers, private businesses and developers; an appropriate organisational framework is supporting such co-operation; and • national and European funding may give long-term benefit in certain cases but should not be limited to a specific type of public transport mode. Funding should be dependent on the efficiency of an investment project. <p><u>Project contact</u></p> <p>transecon@mail.boku.ac.at</p>			
TRANSPLUS	Transport planning, land use and sustainability	EU	Land use planning towards more sustainable transport
<p><u>Key findings</u></p> <p>TRANSPLUS has produced the following results:</p> <ul style="list-style-type: none"> • Development of best practice case studies and evaluation of integrated land use and transport policies; • assessment of best ways to combine policies neutralising barriers, ensuring compatibility and transferability between countries and cities; • identification and development of a consistent set of indicators to evaluate the success of integrated land use and transport (packages of) policies towards the goals of sustainability; • identification of practical criteria for land use and transport policies/infrastructures impacts evaluation; • harmonisation of the national land use and transport planning and policy frameworks in the EU member states (transferability of good practice); • support to the application of the EU Environmental Impact Assessment (EIA) directive in the EU member states; • promotion of the European Spatial Development Perspective in the EU member states. The need to build up networks of politicians, civil servants, representatives of private stakeholders, NGOs and citizens groups, expert research and universities with competence in the transport and land use sectors was also emphasised. 			

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<p><u>Policy implications</u></p> <p>The policy implications of the TRANSPLUS research are relevant to: Transport and land use authorities by means of:</p> <ul style="list-style-type: none"> • Creation of a common understanding and awareness of new more sustainable planning concepts and practices at all the levels of government: local, regional, and national. • Knowledge of the barriers to the transferability and environmental impacts of the most effective practices to encourage the harmonisation of the national land use and transport planning and policy frameworks in EU Member States. <p>Policy makers by means of:</p> <ul style="list-style-type: none"> • The TRANSPLUS guidelines, drawn from the relevant experiences of the case study cities, showing pros and cons of each of alternative, cause-effect relationship between strategic objectives and tactical approaches, and identifying the most effective tools for city planning based on the best practice selection. • The set of indicators to evaluate the sustainability of integrated land use and transport (packages of) policies. <p>Practitioners, by means of the above mentioned TRANSPLUS guidelines and set of indicators as well as an Internet database of integrated land use and transport policies.</p> <p><u>Project contact</u> cseesa@isis-it.com</p>			
UG220	Multi-modal modelling – A new look	UK	Land use and transport model development
<p><u>Key findings</u></p> <p>Key results of the research include: the four stage approach to modelling is still viewed as the mainstream transport research modelling tool covering the stages of generation, distribution, mode choice and assignment. The main characteristic of this modelling approach is that it implies: a zonal basis (spatial aggregation); demand is measured by trips or tours; a static or cross sectional structure (all input fixed in time); a structured set of choices; and a requirement in principle to iterate to equilibrium. Even discrete choice or disaggregate models are seen as an enhancement of this model and not a departure from the four stage approach. Choice of time (potentially seen as fifth stage), or trip linking again is seen as enhancement to this mainstream approach. The alternative approaches identified, developed enough to be considered as mainstream, include the 'activity' model', 'dynamic' model', and 'land use/ transport'. As well as these, mainstream type approaches, other approaches were also considered in this study. No new approach has been identified, but significant advancements in the techniques (especially micro simulation) of implementing the approaches have taken place, especially with the advancing power of computing which has enabled earlier theory to be realised. The power of the latter is thereby enabling more holistic approaches to be developed which place the transport system within wider socio economic contexts, for example the inclusion alongside the topic of travel, the topics of car ownership, and population and employment characteristics</p> <p><u>Policy implications</u></p> <p>The convergence of differing approaches is deemed worthy of encouragement, with a word of caution, that the step change in complexity in leading edge projects might be resulting in due diligence not being paid to individual components. The complexity of models is an important issue in relation to considering how they can brought into general use as a gap already exists between state of art and practice. In addition, the project recommends that consideration be paid to whether ever increasing complexity is justified in terms of either a comprehensible model structure or some demonstration that the model's predictions accord with actual outturns.</p>			

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Key findings / Policy implications / Project website or contact			
<u>Project website (or contact)</u>			
None			
VELO INFO	The European network for cycling expertise	EU	Land use planning towards more sustainable transport
<u>Key findings</u>			
<p>Velo.Info will be a WWW based expertise centre that supports cities to incorporate the bicycle in urban planning. Access to expertise on cycling is essential to a local authority that wishes to increase bicycle use, by regarding the bicycle as an ordinary and daily mode of urban transport. VeloInfo has the purpose to become a key centre of expert and knowledge on bicycle planning, supporting all European professionals on urban planning, infrastructure and transport. A critical mass of content will be established that, on the one hand, ensures a sufficient coverage of cycling expertise according to experts and, on the other hand, contains the answers for at least 80% of the search requests of the users of VeloInfo. Cities will use Velo.Info to find bibliography and experts on cycling policy. Cities can also find other cities, to learn from each other's experiences and best practices. New potential users entering the VeloInfo web site will be invited to use an interactive tool that helps them to find search terms and documents relevant for their specific situation. Besides, the guided tour tool gives a rough estimation of what can be achieved by implementing cycling policy, in terms of, e.g., reduction of exhaust emissions, congestion, and traffic safety. Experts will use VeloInfo to enlarge their expertise and to find other experts and local authorities that need support in developing cycling policy. All users participate in a network, which operates as a literature database, an expert system, and also as a discussion forum. VeloInfo thus offers a forum for the exchange of ideas, data, experience and expertise. A conclusion of the first period was that Velo.Info should be more than an knowledge centre: it should be a management and planning tool. It is not enough to put key documents relating to cycling on the web, even if one uses the best search technology. Velo.Info should help city managers to develop their own plan to promote cycling. The starting point would be: it is not enough to post policy documents on the web if one wants to help cities to make optimised urban planning that includes cycling. The web-based tool should include things such as: guidelines on the current and successful planning approaches, list and description of relevant cases studies, check list to assess the specific needs and requirements of cities, interactive approach to design its own planning and policy mix.</p>			
<u>Policy implications</u>			
<p>Europe lacks a central authority regarding non-motorized mobility. The most prominent initiative at this point of time is the Velo-City conference series and the 'Let's Get Moving' project' that has set up the Charter & Action Plan for Bicycle Friendly Communities. Velo.Info will be a new central player indeed, but in the research field. The execution of research projects together with the execution of other projects in the field on non-motorized mobility on European level would benefit greatly from the coordination in a European Council for Non Motorized Mobility (ECNMM). This body would be a centrally coordinated initiative that consists of projects and research initiatives, all contributing to a better development implementation of policies for non-motorized mobility in Europe. The lack of some important political facilities has hindered the swift development of Velo.Info and will still be standing in the way in the future as long as these facilities are not realized. The political will to incorporate planning for non-motorized mobility in the urban environment has been repeated over and over again at POLIS, EPOMM, Eurocities/ACCESS and other conferences. It now depends on the European will to create substantial and effective tools to help city governments to convince their citizens that they also will benefit from these facilities.</p>			

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<u>Project contact</u> coordinator@velo.info			

Annex II: General information on the Transport Research Knowledge Centre and analysis process used

The Knowledge Centre's background

The EXTR@Web project – Exploitation of Transport Research Results via the Web – attempts to collect, structure, analyse and disseminate transport research results, covering not only EU supported but also nationally financed research in the European Research Area (ERA), as well as selected global transport RTD programmes and projects.

The EXTR@Web consortium has brought together eight main contractors to combine strong and in-depth technical knowledge of transport technology and of EU and national transport RTD programmes with solid communication and dissemination experience.

The current project's direct predecessor, EXTRA (a Fourth Framework Programme Transport RTD project), co-ordinated dissemination activities on the European level for the first time. While FP4 addressed transport research on a mode-by-mode basis, the current Fifth Framework Programme (FP5) focuses on generic themes that consequently reflect transport policy objectives.

The EXTR@Web project will provide support to research at European and national levels by building up and promoting an electronic hub. The key objectives are:

- To establish a comprehensive web-based Knowledge Centre, providing structured and timely access to both detailed and user-oriented summary information on transport research programmes and their results across Europe;
- to provide an electronic hub for inter-connecting European and national programmes and individual networks concerned with transport research into an easily navigable European network;
- to establish a common best practice scheme for the structure and content of the reporting of transport research results;
- to provide high-quality analytical outputs that are structured and tailored according to the type of stakeholder and medium; and
- to raise awareness of the new service, the implications of emerging results, and the wider opportunities under national research programmes across Europe as a whole.

EXTR@Web will provide a comprehensive pool of programme, project and results related information to users, principally in electronic format via the Internet. The approach is based on three main strokes of work covering:

- Monitoring, analysis and information preparation;
- website and electronic news service, the principal dissemination channels; and
- management of knowledge transfer, including dissemination by non-electronic means, and also the maintenance of a contact database and e-mail enquiry service and evaluation of the performance of EXTR@Web.

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Definition of transport research

For inclusion into the Transport Research Knowledge Centre, Transport research programmes and projects have to be within the definition of research and transport simultaneously. This will define the eligibility of projects.

Definition of research

General OECD definition:

"Creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humanity, culture and society, and the use of this stock of knowledge to devise new applications."

Additional transport research criteria:

- Targeted – in line with transport policy aims, strategies and processes to solve the inherent problems for society.
- Accessible – a public activity, open to scrutiny by peers.
- Transferable – useful beyond the specific research project, applicable in principle to other researchers and research contexts as well as decision-makers in policy, industry and science.

Definition of transport

In order to clarify expectations from the Transport Research Knowledge Centre, and to ensure a common understanding of important terms, the Programme Analysis Group of EXTR@Web has come up with the following definition of transport.

- Transport is the means by which a person or material of any kind is passed from its origin to its destination.
- Transport comprises:
 - the transport users: passenger, business, freight;
 - the transport vehicles (full life cycle issues);
 - the transport infrastructure (full life cycle issues);
 - the transport system: the interaction of users, vehicles and infrastructure;
 - the impacts of transport: contribution to objectives, and hence to overall sustainability; and
 - the transport tools: methods and instruments to help ensure an effective contribution to the objectives.

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Three levels of analysis

Project level analysis

For European, national and international projects the following harmonized process was agreed:

- For each eligible project, the project co-ordinator will be requested to draft a Project Profile;
- the EXTR@Web consortium identifies, for each project all relevant themes (typically up to five), and provides the project linkage;
- for each eligible project, the project co-ordinator will be requested to draft the other elements of the reporting scheme – Progress Summary and Result Summary – due to the project progress and provides the final report;
- projects with highest relevance and best available final results will be selected for analysis;
- for every such relevant theme within each project a short and concise paragraph – structured with bullet points as appropriate – will be written to present the key findings of the project in relation to the objectives of the theme; and
- this information will be searchable on the Knowledge Centre website.

Thematic analysis

The thematic analysis has been exploiting existing project level analysis. The consolidated project wise findings have been structured and analysed along 30 themes, which are fixed for the project life time and fed into annual Thematic Research Summaries and Annual Compendia. However, for reporting purposes Thematic Research Summaries have been limited to 28 volumes (cf. Chapter 1).

The sequence of outputs has been comprising an explanation of the overall structure, and regular reports treating national, European and international research in a comprehensive way (cf. Table 1).

Deliverable number	Title	Release date (final version)
D2.A	"Thematic structure and definitions – all themes"	August 2006
D2.B	"European, national and international project database"	July 2006
D2.C	"First annual thematic research summary"; 30 vol.	December 2004
D2.D	"Second annual thematic research summary"; 10 vol.	March 2006
D2.E	"Third annual thematic research summary"; 28 vol.	August 2006

Table 1: The sequence of deliverables

Policy level analysis

Whilst the 30 themes are fixed, this type of analysis should give the flexibility to provide information on ad hoc policy priorities. Hence, policy level analysis will synthesize key findings of projects across combinations of themes. As an output, policy brochures shall be prepared depending on ad hoc requirements by DG TREN or by the high-level Advisory Group (AG).

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Annex III: Editorial team for Thematic Research Summaries

Please note that – in principle – all EXTR@Web partners and sub-contractors will be contributing to a particular Thematic Research Summary because all project level findings that are of some relevance to one of the 28 (30) individual themes are presented in the comprehensive format of these papers.

The following summary of authors and peer reviewers is presented in alphabetical order while the main author of this paper is given on page i of the document.

Fabien Dreveton, ISIS; France

Mr Dreveton has an electrical engineering post-MSc degree, an MBA and over 8 years experience in Intelligent Transport Systems for road transport. He has been a senior engineer with ISIS since 2001, specialising in traffic control, motorway management, ITS standards development process and system architecture.

Co-author: Road Transport

Prof J Augusto Felício, Neptune – CEGE/ISEG; Portugal

Professor Felício, holding a PhD in management, is teaching graduate and post-graduate courses such as 'Maritime transport and port management' and 'Land transport and logistic management' at ISEG, School of Economics and Management (Technical University of Lisbon). His activities include participation in transport research where he has published several related articles and books.

Main author: Waterborne Transport, Intelligent Transport Systems

Peer review: Efficiency, Vehicle Technology

Dr Paul E Firmin, Institute for Transport Studies, University of Leeds (ITS); UK

Dr Firmin has 30 years of experience in transport planning and engineering, including local authority, consultancy and academia. His research specialities are: traffic management, transport survey design & analysis, traveller information systems; driver route choice behaviour and transport telematics. He is currently the MSc(Eng) degree programme leader and international student adviser at ITS, University of Leeds. He teaches computing skills and traffic management, and supervises student dissertation projects.

Main author: Information and Awareness

Peer review: Safety and Security

Dr Nils Gendner, Neptune – University of Bremen, ISL; Germany

Dr Gendner has been working for more than four years at the University of Bremen, Institute of Shipping Economics and Logistics. His main topics include the analysis of processes, functions and data flows in shipping and within the rail sector. He contributes to ongoing efforts in intermodality by participating in several projects dealing with intermodal concepts and developments.

Main author: Intermodal Transport, Integration

Peer review: Financing Tools, Pricing and Taxation

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Wolfgang Helmreich, Industriebetriebe-Betriebsgesellschaft mbH (IABG); Germany
Mr Helmreich is a civil engineer from the Technical University of Munich. He has more than 15 years experience with transport planning and infrastructure design in the rail, road and air sector, and sound knowledge of vehicle technologies. His expertise also includes project management, web publishing and dissemination skills. He joined IABG in 1999 as a senior transport consultant after working as project manager at several German engineering companies. He is principal editor of all Thematic Research Summaries.

Main author: Air Transport, User Aspects, Safety and Security

Peer review: Regional Transport, Rail Transport, Waterborne Transport, Environmental Aspects, Land Use Planning

Cristina Ivan, Group of Independent Experts Ltd (GIE); Romania

Ms Ivan has a law degree and has graduated a Master course in project management. Ever since 1998 she has participated in various projects financed by international donors in Romania. The main areas of her expertise cover: project management, legal approximation of the EU acquis & drafting of environmental legislation, as well as the carrying out of awareness raising and dissemination activities, including those for the transport sector.

Main author: EU Accession Issues

Peer review: Economic Aspects, User Aspects, Transport Management

Dr Ann Jopson, Institute for Transport Studies, University of Leeds (ITS); UK

Dr Jopson is a Research Fellow whose main interests and expertise lie in the areas of travel behaviour psychology, transport marketing and urban transport planning and policy, with particular emphasis on travel demand management through attitudinal and behavioural measures. Her PhD thesis was based on the role of psychology in reducing car use.

Main author: Environmental Aspects

Peer review: Rural Transport

Dimitris Koryzis, Systema; Greece

Mr Koryzis is a production & management engineer from the Technical University of Crete and holds an MSc in Decision Sciences from Athens University of Economics & Business. He has more than 8 years experience as technical and managerial consultant for 30 European programmes in the transport sector (road, maritime and intermodal) as well as in research and innovation technology EC projects.

Co-author: Pricing, Taxation and Financing Tools

Ulrich Leiss, Industriebetriebe-Betriebsgesellschaft mbH (IABG); Germany

Mr Leiss is an aerospace engineer from the Technical University of Munich. His professional career includes 24 years experience with research, technical analyses, monitoring and managing national and European projects and programmes. These activities cover the areas aerospace, transport, energy and new technologies.

Main author: Other Modes, Vehicle Technology

Bryan Matthews, Institute for Transport Studies, University of Leeds (ITS); UK

Mr Matthews has 9 years experience of transport research and project management in both consultancy and university settings. His research expertise is in transport policy analysis and transport economics. He has worked on a number of EU, UK DfT and Research Council projects. He also contributes to teaching activities, lecturing on Air Transport Systems and supervising student projects.

Main author: Rail Transport

Peer review: Air Transport

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Prof Anthony D May, Institute for Transport Studies, University of Leeds (ITS); UK
 Professor May has over 35 years' experience in transport planning and traffic engineering. He has been a professor at Leeds since 1977, and has served as Head of the Department of Civil Engineering, Dean of the Faculty of Engineering, Pro-Vice Chancellor for Research and Director of the Institute for Transport Studies. He also has practical experience with the MVA consultancy and the GLC in London. His research specialities include: land use planning, traffic management, road pricing, sustainable urban transport, integrated transport and environmental impacts of transport.

Supervision of entire process of thematic reviews

Batool Menaz, Institute for Transport Studies, University of Leeds (ITS); UK
 Ms Menaz is a transport economist from the University of Leeds. She has been involved in a number of various projects including research into transport pricing reform issues in air, road and rail for the IMPRINT-Europe thematic network project, and research for the UK Rail Research Centre looking at the alternative visions for the future of the British rail system.

Main author: Regulation/Deregulation

Co-author: Passenger Transport, Equity and Accessibility, Land Use Planning

Peer review: Road Transport

Christina Paschalidou, Systema; Greece

Ms Paschalidou is a transportation engineer from Aristotle University (Thessaloniki), with a MSc in Urban and Regional Transport from Laboratory of Transport Economics in Lyon. Her field of interest is transport planning and engineering, EU and national transport policies, sustainability issues and research. She joined Systema in 2005, while her previous experience includes an internship in ISIS, traffic studies elaborated individually and research activities in the Aristotle University.

Main author: Transport Management

Peer review: Information and Awareness, Integration

Ignacio Rada Cotera, Neptune – IkerConsulting; Spain

Mr Rada Cotera is a lawyer from Deusto University in Bilbao, holding a diploma and certificate of European studies from Deusto and Saarland Universities, respectively. He has been working on EU projects since 2000. His main expertise is European commercial and regional policy, maritime transport and port affairs, legal aspects of international economic relations, urban planning, regional benchmarking and development.

Main author: Regional Transport

Marco Valerio Salucci, Università di Roma "La Sapienza", DITS; Italy

Mr Salucci holds a degree in mechanical engineering from the University of Rome "La Sapienza". His past research experience has focused on computer modelling of the operations of freight terminals and automatic passenger transport systems, the latter being carried out within EC funded research projects. His current research for a doctorate is in the area of transshipment and information and communication technologies for intermodal freight transport.

Co-author: Freight Transport, Urban Transport, Rural Transport, Efficiency, Decision-support Tools

Peer review: Intermodal Transport

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Dr Karsten Seidel, Neptune – European Networks and Cooperation; Belgium/Germany
 Dr Seidel has graduated as economist and holds a PhD from the University of Bremen. He has been working on EU projects since 1988. His main expertise is in European industrial and regional policy, telecommunication research projects, maritime transport and port affairs, evaluation of technical aid, urban planning, regional benchmarking development.

Co-author: Regional Transport

Dr Paolo Delle Site, Università di Roma "La Sapienza", DITS; Italy
 Dr Delle Site holds an PhD, and is a senior research fellow at DITS, Transport Area, University of Rome "La Sapienza". He combines professional experience with research activities, the latter mainly being carried out within EC funded research projects. Related activities comprise urban transport planning, urban public transport design, transport project assessment, and policy analysis. His teaching activities include courses in transport planning. Furthermore, he is author of papers in Transportation Research Part A – Policy and Practice and in the European Journal of Transport and Infrastructure Research.

Co-author: Freight Transport, Urban Transport, Rural Transport, Economic Aspects, Infrastructure Provision, Pricing, Taxation and Financing Tools

Peer review: EU Accession Issues, Intelligent Transport Systems, Regulation/Deregulation

Damian Stantchev, Institute for Transport Studies, University of Leeds (ITS); UK
 Mr Stantchev holds a degree in Economics and Trade from Varna University of Economics in Bulgaria and an MA in Political Science from the Central European University in Hungary. His early research experience was in the area of small business development in transitional economies of Central and Eastern Europe. Damian has also contributed to an extensive report on the role of the logistics and transportation sector in society for the Logistics & Transportation Corporate Citizenship Initiative of the World Economic Forum. His research for a doctorate examines the role of logistics in enhancing the competitiveness of the regional economy and encompasses all aspects of original research and data collection including the design, conduct and analyses of large scale surveys as well as the collection of commercial data and development of case studies.

Main author: Passenger Transport, Land Use Planning, Equity and Accessibility

Peer review: Freight Transport

Andrew Winder, ISIS; France

Mr Winder is a transport planner with a BSc in transport management (Aston University, England) and over 15 years experience in consultancies and public transport authorities covering transport planning and policy, particularly at UK, French and Europe-wide levels. Since 1998 he has been a senior engineer at ISIS, responsible for a wide range of European projects focusing primarily on Trans-European Networks, ITS for road traffic management, urban and regional public transport and EU enlargement aspects.

Main author: Road Transport

Peer review: Passenger Transport, Urban Transport, Other Modes, Equity and Accessibility, Infrastructure Provision

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Ard Wolthuis, Università di Roma "La Sapienza", DITS; Italy

Ard Wolthuis graduated in Science & Innovation Management, in the field of Transport and Mobility, from the University of Utrecht. He has been involved in transport projects and analysed socio-economic, environmental, political and legal aspects, such as the Phileas project, the Fokker bankruptcy, and innovation policy of companies in the Netherlands. Has participated in a European project on innovation in urban public transport systems. Since spring 2005 has joined DITS as a research fellow. His main areas of activities are policy analysis and dissemination of research results.

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