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Action Plan on Urban Mobility

Impact Assessment

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1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

1.1. Organisation and timing

This impact assessment prepares the ground for an Action Plan on Urban Mobility. The objective is to identify policy options and instruments forming a basis for proposals for specific actions in the Action Plan. This selection process includes a subsidiarity test, an assessment of effectiveness and efficiency and an indicative assessment of the impact.

The Action Plan on Urban Mobility follows the publication of a Green Paper on urban mobility[1] on 25 September 2007. The Action Plan on Urban Mobility is part of the Commission's work programme for 2008 (ref. 2008/TREN/036[2]).

This impact assessment has been prepared by the Directorate-General for Energy and Transport (DG TREN). The following Directorates-General participated in the Interservice Group that contributed to the preparations: the Secretariat-General, DG ECFIN, DG EMPL, DG ENTR, DG ENV, DG MARKT, DG INFSO, DG REGIO, DG RTD, DG SANCO and DG TAXUD. This report commits only the Commission departments involved in preparing it. Support was obtained under a study contract awarded to ECORYS Transport[3].

This impact assessment in no way prejudges the final decision to be taken by the Commission.

The Impact Assessment Board gave its opinion on the first draft of the impact assessment on 23 July 2008. The comments of the Board were incorporated in a second draft. The revised draft took a more detailed look at how EU action can contribute to solving urban mobility problems at local and regional levels. The level of ambition was clarified. Subsequently, the objectives made it clearer that the EU primarily wants to facilitate and not regulate action at local and regional level.

Furthermore, the structure of the impact assessment was revised to link the policy options more directly to the objectives and to make the document easier to read. In addition, more insight was provided on the measures recommended in the Action Plan on Urban Mobility. The assumptions and policy measures in the baseline scenario were clarified. Finally, in Chapter 6, possible actions for the Action Plan were clustered and the estimated costs and benefits were indicated.

The Impact Assessment Board gave its opinion on the second draft of the impact assessment on 1 October 2008. Its comments were incorporated in a third draft. In this new draft, the problem definition was better focused. The value added by the Action Plan to existing initiatives was better explained and the objectives adjusted, so that they give a clearer reflection of local, regional and national responsibilities.

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1 Towards a new culture for urban mobility: COM(2007) 551.

2 The roadmap includes "no EU action on transport", "baseline" and "proposing a coherent package of actions", including identification of synergies, as policy scenarios. The "no EU action" scenario was dropped because there was very little difference from the baseline.

3 Contract number TREN/07/MD/S07.80061.

Furthermore, the link between the impact assessment and the Action Plan was strengthened. The explanation of policy developments taken into account in the baseline was elaborated. It was not possible to undertake a new modelling exercise and assess the impact of some specific recent policy proposals. However, TREMOVE does include a series of policy measures that, in response to a judgment made in 2005, are likely to be implemented.

Because the actions in the Action Plan are of a soft or exploratory nature, and the fact that local, regional and national authorities will have flexibility and freedom to apply them, it was not possible to assess their impact against the trends in the baseline scenario. Another reason is that the lack of data on urban mobility makes quantitative assessment very difficult.

The Impact Assessment Board gave its opinion on the third draft of the impact assessment on 4 November 2008. Its comments have been incorporated in this final impact assessment. Further evidence on the costs of the lack of harmonisation and of the benefits of harmonisation and more coherent solutions were provided. Objective 1 and the related monitoring indicator were redrafted. Plans for future impact assessments were clarified. A comparison of Member States that have harmonised rules and Member States that do not was not possible within the scope of this impact assessment.

1.2. Consultation

The consultation of interested parties was divided into two phases. The first phase consisted of a consultation to prepare the Green Paper on urban mobility during the first six months of 2007. The second followed after adoption of the Green Paper, between 25 September 2007 and 15 March 2008.

The consultation to prepare the Green Paper comprised conferences, workshops, meetings and an internet-based questionnaire. The results are set out in a Commission staff working document on the consultation[4] that accompanied the Green Paper on urban mobility.

The Green Paper included 25 questions to steer the consultation and focus the responses from interested parties. The stakeholders were also invited to respond to the general issues raised in the Green Paper. The results of the Green Paper consultation are summarised in Annex I[5]. The minimum standards for consultation have been met.

The European Parliament adopted a Resolution on the Green Paper on 9 July 2008[6]. The Committee of the Regions adopted an Opinion on the Green Paper on 9 April 2008[7]. The European Economic and Social Committee adopted an Opinion on the Green Paper on 29 May 2008[8]. The Council also discussed the Green Paper on urban mobility[9]. The European Parliament, the Committee of the Regions and the European Economic and Social Committee have all provided valuable input and recognised the added value of action at EU level.

The overall conclusion from the consultation is that there is broad agreement among stakeholders and interested parties that there is a role for the EU in the field of urban mobility

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4 SEC(2007) 1209.

5 A report on the stakeholder consultation will be made public on the Commission's website before the Action Plan is adopted.

6 A6-0252/2008/P6_TA-PROV(2008)0356.

7 CdR 236/2007.

8 TEN/320 - CESE 982/2008.

9 http://www.ue2008.fr/PFUE/lang/en/accueil/PFUE-09_2008/PFUE-1.09.2008/Informelle_Transports.

in the form of action to support the local, regional and national levels. While there were varying views expressed about which specific actions at the EU level could add value, the consultation has helped to identify 'common ground'.

2. PROBLEM DEFINITION

The three overarching problems related to sustainable mobility and transport in Europe's urban areas are (1) road congestion and the resultant costs; (2) harmful emissions, including greenhouse gas emissions, energy consumption and noise and their impact on health; and (3) imbalanced development with an impact on social exclusion and economic growth. They are influenced by the challenges outlined in the Green Paper on urban mobility. Market forces are unable to solve these problems on their own. Cities, regions and national governments are therefore all trying to identify the right forms of intervention.

In line with the principles and policies enshrined in the Treaties, the EU can, when appropriate, provide national, regional and local authorities with policy guidance, frameworks and practical tools to help them achieve their objectives in the field of sustainable urban mobility. At the same time, it can complement initiatives taken at those levels with specific action to make them more coherent and support implementation.

2.1. Fragmentation of local, regional and national approaches

Looking at the various initiatives taken across the EU, a picture emerges of broad diversification of policies, action and financing solutions. This is not a problem *per se*, but in some cases this fragmentation may not be cost-efficient or may pose risks to EU principles and to implementation of EU legislation.

Member States and regional and local governments have therefore taken action themselves to overcome fragmentation. However, in some cases, action at EU level can add extra value by developing and suggesting coherent solutions or by helping to implement them more rapidly. In others, fragmentation at national level has an impact across borders. In some cases individual authorities have a direct interest in addressing it, in others they have not or they see a role for the Commission to take action.

Fragmentation is an issue in demand management policies. Urban pricing and road user charging, for example, sometimes in a hybrid form in combination with access regulations, has been introduced or is envisaged in different forms in about 10 urban areas in Europe. Often, exemptions or discounts are offered for certain types of vehicle. Authorities use their own criteria for these exemptions or discounts. The means of enforcement also vary.

Low-emission environmental zones are a revealing example. Such zones are currently being established in about 70 cities in the EU, with different access rules and different enforcement methods. In some Member States, the rules are determined by national legislation while in others cities or regions can set their own rules.

The access criteria vary widely and include:

- Euro pollutant emission standards;
- Emission level for particulates only;
- Equipment of vehicles with a particulate filter (without checks on actual emission levels);

- Equipment of vehicles with a catalytic converter;
- Weight, with local classifications, varying for different vehicle categories;
- Age, differentiated by vehicle category;
- Vehicle technology (petrol, diesel, natural gas, LPG or electric);
- Vehicle number plates (odd/even).

Access criteria also vary across different environmental zones in the same country. For example, in early 2008 Italy had six different schemes with different sets of access criteria in place.

Access regulation differs from one scheme to another. Some schemes bar access of certain vehicles completely, others allow access upon payment of entrance fees, sometimes differentiated in line with locally defined vehicle classifications.

Enforcement too uses different schemes and technologies.

- London has installed an optical number plate recognition system based on extensive camera observation and digital image processing. All foreign vehicles need to register with Transport for London prior to entering the London low-emission zone that started on 4 February 2008. Vehicles not registered have to pay penalties of up to £1 000 per day. Vehicles in default will be pursued by private tracking companies.
- Most other cities rely on manual enforcement by the police. To facilitate this, vehicles need to be equipped with special plates, stickers, etc.

The Commission receives regular reports from citizens, stakeholders and the European Parliament[10] that this fragmentation limits freedom of movement of freight operators and travellers and, in some cases, leads to unequal treatment between local residents and other EU citizens.

Fragmentation is also an issue for traveller information. It prevents intermodal travel where different modes are combined in a single journey[11]. Long-distance rail or bus travellers find it difficult to obtain information on timetables or fares for connecting local and regional public transport services. Car drivers on the long-distance TEN-T road network are confronted with non-harmonised travel information on connections with public transport services. This lack of information prevents travellers from making the shift from car to public transport for part of the journey.

Another field where fragmentation is an issue is mobility of persons with disabilities[12].They are confronted with urban infrastructures, public transport systems and traveller services that

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[10] In 2008 about ten letters and two questions and a petition from the European Parliament have been received. These numbers might seem low, but they probably represent a much higher number of concerns that are not communicated to the Commission

[11] See "Towards passenger intermodality in the EU", Report 3 (Recommendations), Dortmund, 2004.

[12] A person with reduced mobility or a disabled person is every person whose mobility when using transport is reduced due to any physical disability (sensory or locomotor, permanent or temporary), intellectual, sensory disability or impairment, or any other cause of disability, or as a result of age, and

have been developed according to varying national, regional and local standards. The Action Plan should fully address the needs of persons with reduced mobility and aim at eliminating obstacles and barriers to accessibility[13].

Fragmentation is costly for economic operators. Freight distributors have to match their delivery schedules with a variety of conditions and time windows for freight deliveries that are defined by each city or region individually. For example, a Dutch study[14] estimated the additional costs of distribution to supermarkets caused by local regulations at €100 million per year in the Netherlands. One third of the additional costs were caused by vehicle-type related restrictions, two thirds by time windows.

Another study[15] on freight transport includes various examples of environmental zones from across the EU. In one case, the study refers to a potential significant increase of vehicle operator costs which, depending on the access rules introduced, can range between 0.1 and 70% of vehicle operating costs.

This fragmentation also brings costs for manufacturers and operators. A study[16] on the benefits of common requirements and standards for urban rail-based transport systems in the EU estimates the gains for the rail supply industry at in the range of €4.5 billion up until 2020. A report[17] on the benefits of interchangeability of components and regulation in the light rail and metro market points to reductions in procurement costs of up to 25% as a result of joint procurement and 10% from lower production costs.

Finally, fragmentation can be a barrier to innovation and market entry of new technologies. Competition between specific innovative solutions and new technologies is a good thing as it may drive competition. However, it may also result in unnecessary costs. Spreading development costs over several parties with the aid of joint development leads to economies of scale. It also allows parties to start implementation earlier, which brings additional financial benefits[18].

For example, the costs of implementation and operation of an environmental zone in Copenhagen have been estimated at €50 – 110 million[19]. The investment costs for the congestion charge scheme in London were nearly €205 million and the annual operating costs are in the range of €115 million[20]. Other cities could benefit significantly from the work that

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whose situation needs appropriate attention and adaptation to his particular needs of the service that is provided to all passengers

13 Article 9 of the UN Convention on the rights of persons with disabilities mentions that parties, which include all Member States and the European Community, shall take appropriate measures to ensure to persons with disabilities access on equal basis with others to transportation, including in urban areas, and that those measures shall include the identification and elimination of obstacles and barriers to accessibility to inter alia transportation.

14 Research by TNO for the CBL (Centraal Bureau Levensmiddelenhandel) in 2003.

15 BESTUFS project, deliverable D 1.4, Policy and Research Recommendations, 2008.

16 UNIFE Impact Assessment of a future EU Directive on Urban Rail, 2004.

17 Obstacles to the Internal Market in Rail Mass Transit, 2000.

18 For example, earlier additional revenue in the case of charging schemes, parking management systems or flexible ticketing schemes for public transport.

19 BESTUFS project, deliverable D 1.4, Policy and Research Recommendations, 2008.

20 Costs of around £162 million were incurred in preparing the congestion charge scheme in London before it was launched in 2003. The major items of expenditure were for traffic management measures, communications and public information on the scheme, systems set-up and management. In 2005 the congestion charge revenue consisted of charge payments of £120 million and penalty payments of

has already been done and the experience gained with innovative schemes like in London. Joint procurement is another means of reducing costs and pushing market take-up of new technology. The Action Plan could look at how EU mechanisms can provide stronger support for the introduction of innovative solutions and new technologies.

These examples might, however, create the impression that policy-makers have to choose between promoting harmonisation or promoting innovation. But it is not a matter of choice. Both approaches are usually considered important in their own right and, at the same time, can strengthen each other, especially in cases where broad rules are laid down, but the details are shaped by innovation and competition between solutions. This is also the approach that Member States often follow for urban mobility policies.

The examples given above suggest that cities, regions and Member States apply solutions that might bring unnecessary costs, hamper cross-border transport or affect efficient functioning of the internal market. This is the reason for further investigation of developments at local, regional and national levels. It also provides a basis for identifying tools and mechanisms at EU level that can support policy-making at local, regional and national levels.

2.2. Lack of initiative, lack of knowledge and experience

Besides fragmentation of approaches, inaction or inappropriate action by local, regional and national authorities may have an impact across borders.

According to the Green Paper, the delays and pollution caused by chronic congestion cost almost 1% of the EU's GDP. Road congestion in the EU has been considered mainly an "urban problem"[21]. Also according to the Green Paper, traffic in urban areas is responsible for 40% of CO_2 emissions and for 70% of other pollutants from road transport. One out of every three fatal road accidents takes place in an urban area.

Road safety, economic efficiency, social inclusion and the fight against climate change are all issues on which Member States have decided to act jointly. In the field of urban mobility, the European Union can play a leading role in focusing attention on these issues and facilitating action by local, regional and national authorities.

Collecting and sharing data and statistics are necessary for the proper design of policies. There is no comprehensive information on developments in urban mobility, for example regarding the urban public transport and freight markets[22], including on the quality of services, emissions and social inclusion. This lack of data can be partly explained by the fact that some cities and regions do not have the resources or expertise to collect them.

£70 million, i.e. £190 million in total. Transport for London's direct operating costs were around £5 million. In addition, it paid the service providers that operate the scheme around £85 million. Source: Central London Congestion Charging Scheme: ex-post evaluation of the quantified impacts of the original scheme, 29 June 2007.

21 COMPETE study (2003).

22 See NPF urban transport final report: http://www.transport-research.info/web/projects/project_details.cfm?id=2796&page=contact.

There is also a lack of definitions, data-sharing mechanisms and trend analysis. The result is that relevant local, regional and national trends[23] cannot be monitored and compared effectively by policy-makers at all levels.

Information-sharing can be an effective means to support policy-making at local, regional and national levels. There is currently no comprehensive and consolidated overview of practice and experience on urban mobility and transport at EU level. Cities with less experience, knowledge and financial resources find it difficult to make use of the practice and experience built up by cities that are more advanced in the area of sustainable urban mobility for lack of information-sharing tools. The EU lacks effective information platforms to provide insights into relevant EU legislation and funding opportunities. This means that, for example, the opportunities provided by the regional policy financial instruments and the European Investment Bank are not fully seized.

The Action Plan could offer tools to improve this situation.

2.3. Who is affected, in what ways and to what extent?

Mobility and transport bring many benefits to society and to the economy. At the same time, problems caused by urban mobility affect businesses and the majority of European citizens who live in or travel to and from urban areas.

Emissions and noise result in illness and premature deaths of EU citizens[24]. They also damage the EU economy and have a negative effect on business, which is confronted with congestion.

Urban transport is the service of general interest with which consumers in the EU are least satisfied and consumers in the new Member States are even less satisfied with urban transport than other EU citizens[25]. Furthermore, consumers have to deal with fragmented information systems and non-streamlined solutions. Persons with reduced mobility don't always have access on an equal basis with others to urban transport.

Without an appropriate dissemination of tested solutions, policy-makers develop solutions with unnecessarily high costs, design policies that take insufficient account of experience elsewhere or propose solutions that could conflict with EU principles or legislation.

Policy-makers in new Member States face specific challenges. Economic development is leading to rapidly rising car ownership and use. The lack of sufficiently adapted tools means that the improvements made to urban transport do not always meet the minimum standards required for sustainable development and social cohesion.

2.4. What would happen if nothing were done?

To gain an insight into the most important mobility, economic, social and environmental trends and challenges in the field of urban mobility and transport at EU level, an indicative

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[23] For example, coherent data sets at EU or national level are not available on “contexts” (population density, car ownership, etc.), “inputs” (investments, quality of fleets, etc.) and “outcomes” (modal split, passenger-km, tonne-km, safety, etc.).

[24] Impact Assessment of the Thematic Strategy on Air Pollution and the Directive on Ambient Air Quality and Cleaner Air for Europe, 21 September 2005.

[25] European Commission consumer satisfaction survey (2007): http://ec.europa.eu/consumers/cons_int/serv_gen/cons_satisf/consumer_service_finrep_en.pdf.

baseline scenario was developed using input from the TREMOVE[26] model and from other sources. An overview of the baseline scenario is given in Annex III. It incorporates the policy initiatives in the "partial implementation" scenario of the latest publicly available version of TREMOVE (version 2.7)[27].

This means that the existing direction of EU policies[28] that have an impact on urban mobility remains unchanged and that no "trend breaks" are foreseen.

If nothing were done at EU level, individual solutions at local and regional level would continue to develop. This is not a problem as such, as different approaches are often also followed at Member State level. However, authorities, citizens and businesses could benefit from the tools and guidance that the EU could offer them.

If nothing were done at EU level, freight distributors, for example, would continue to be constrained by the varying conditions and time windows for freight deliveries that have been set by each city or region individually. Long-distance passengers would continue to suffer from the lack of understandable travel information on connecting local transport services, on parking and access regulations, on access rules for persons with reduced mobility, etc. Moreover, in some cases they would still be confronted with schemes that apply to locally registered vehicles only. This would hamper the smooth functioning of the internal market and fluid mobility within the EU.

If nothing were done at EU level, due to lack of working together and uncertainty about standardisation, the market take-up of new technologies would be slower than policy-makers would like and authorities would invest unnecessary resources in their own developments. Furthermore, it would remain difficult to share best practice and monitor trends, leading to ineffective policy-making and imperfect insights into market developments. This would also prevent benchmarking, which is considered a good means for policymakers to learn and improve.

2.5. The EU's right to act

The Treaties delimit the range of powers of the EU. The subject of urban mobility and transport falls under Article 70 of the Treaty which provides for a common transport policy[29]. Articles 71(c) and 71(d) are relevant to urban mobility and transport. They state that for the

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26 http://www.tremove.org/index.htm.

27 See Annex III.

28 Urban mobility cuts across various policy areas inside the Commission. For example, it is linked to areas of the common transport policy such as public service obligations in public transport, road safety, intelligent transport and successful development of the trans-European transport network. It is linked with energy and climate change policies on promotion of energy efficiency in transport and of alternative fuels. It is linked with environment and health policy in fields such as air pollution and noise. Investments in urban transport contribute to economic development and territorial cohesion, the prime objectives of regional policy. Urban mobility is also linked with research and innovation policy in connection with the development of clean technologies and policy-related RTD. Advanced transport infrastructure and electronic services are part of the wider information society agenda. Urban mobility is linked with the social agenda via issues such as inclusion and mobility for all. It is linked with enterprise and industrial policy, for example in the cases of emission limits of vehicles, standardisation and tourism policy. And, via public procurement, it is linked to policy on the internal market.

29 The Commission can also make specific proposals on the basis of articles other than Article 70. For example, to address specific problems related to urban mobility and transport it could use articles covering environment policy (Articles 174 and 175) or economic and social cohesion (Article 158).

purpose of implementing Article 70 the Council and the European Parliament will lay down measures to improve transport safety and any other appropriate provisions. Responsibility for transport is shared between the EU and Member States. The arguments set out below demonstrate that the problem cannot be solved in an optimum way by the Member States alone (necessity test) and that the objectives can be better achieved at EU level (added value test). More extensive material is presented in Annex IV.

The right to act at EU level in the field of urban mobility also stems from the Commission's obligation to achieve and protect the fundamental goals set out in the Treaty. EU legislation and financial instruments directly affect local, regional and national decisions in the field of urban mobility. The Commission is therefore empowered to ensure that these decisions are in line with EU legislation and to help authorities to implement EU policies and make best use of EU funding. In addition, action taken in the field of urban mobility at local, regional and national levels directly affects freight operators and travellers from other countries. This cross-border impact justifies EU action to ensure smooth functioning of the single market and proper implementation of EU policies and legislation, for example in the field of the environment, State aid, the social agenda or research and development.

As mentioned above, market failures in the field of urban mobility make public intervention necessary in order to address the problems of congestion, pollution and imbalanced development. The EU has a right to ensure that this public intervention is in line with EU legislation and coherent with EU policies. EU policies in areas other than transport, such as the environment, regional policy or energy, have in the past already developed measures related to urban mobility. Insufficient attention has been paid to the possible impact of these policies on urban mobility and transport. Annex II provides an initial overview of EU initiatives and legislation of relevance to urban mobility. In some cases, appropriate tools and instruments to support authorities have not been made available, have not been taken up or have not taken sufficient account of urban mobility issues. Now it is important to propose actions that add value, strengthen coherence and support implementation of such past and present EU initiatives.

The EU also has a right to act to address those problems where public intervention at EU level brings added value. Without impinging on the powers of the local, regional or national authority in charge, the EU can bring added value to local action in different ways[30]. The EU can offer authorities a toolbox with tried and tested solutions to address the risks caused by fragmentation of local, regional and national approaches. The EU can help to correct regulatory failures, for example in the form of insufficient collection and sharing of market data, which prevents comprehensive monitoring of relevant trends. It can support data and information exchange, offer financial support and launch RTD activities. It can help to promote efficient use of public resources, for example by avoiding reinventing the wheel or by joining forces in benchmarking, procurement or information provision. It can also help to promote innovation and standards and to create markets for industry.

[30] The basis for the EU action in urban areas is strengthened by the Thematic Strategy on the Urban Environment (COM(2005) 718), which was mandated by the Council and European Parliament through the 6th Environment Action Programme.

3. OBJECTIVES

The EU faces the general challenge of facilitating and stimulating sustainable and more streamlined development of urban mobility to meet fundamental economic, environmental and social objectives. The general and specific objectives are outlined below. They contribute to the strategic objectives set by the Lisbon Strategy and the Sustainable Development Strategy. They also contribute to policy objectives in sectors such as the environment, energy, health, cohesion, the internal market and social policy.

General objective

The general objective is to contribute to progress towards sustainable urban mobility in the EU which fosters competitiveness, does not harm the environment and promotes a more cohesive and inclusive society.

Specific objectives

The following specific objectives in the area of sustainable urban mobility were identified in the Green Paper and confirmed in the consultation process:

(1) Provide local, regional and national authorities with tools that can help to strengthen, when appropriate, the coherence of local solutions and reduce duplication of effort. These tools can support authorities, working closely with stakeholders, with achieving:
- 1.1 Free-flowing towns and cities;
- 1.2 Greener towns and cities;
- 1.3 Smarter urban transport;
- 1.4 Accessible urban transport;
- 1.5 Safe and secure urban transport.

(2) Strengthen EU support for local, regional and national authorities' efforts to contribute to EU objectives and for the development and implementation of integrated policy in the area of urban mobility, by:
- 2.1 Improving information exchange, data collection and knowledge-building;
- 2.2 Focusing EU financial instruments.

4. POLICY OPTIONS

Different policy options are available to achieve the specific objectives. This chapter provides an overview of the screening process that started with a long list of possible policy options and ended with a shortlist of policy options. The screening process consisted of three steps:

- Step 1: Identification of policy options;
- Step 2: Screening on subsidiarity;
- Step 3: Screening on efficiency, effectiveness and consistency.

In addition, this chapter offers information on the level of support from stakeholders for each option. However, stakeholder support is not considered in the screening process.

Background material is included in Annex V.

4.1. From the long list to the shortlist

Step 1: Identification of policy options

A long list of possible policy options was compiled, drawing on various sources:

(1) past and ongoing work carried out in the framework of policy initiatives, RTD activities and best practice exchange, for example CIVITAS[31] and ELTIS[32];

(2) work carried out and contributions received to support preparation of the Green Paper on urban mobility;

(3) contributions received during the stakeholder consultation on the Green Paper on urban mobility;

(4) outcome of the technical workshops and conference held as part of the consultation process;

(5) discussions in the European Parliament, the Council, the Committee of the Regions and the European Economic and Social Committee;

(6) desk research under the study contract;

(7) input from European Commission staff.

This broad approach made it possible to review a wide variety of policy options, ranging from a more strategic to a more practical level. The long list includes options that may not seem likely or desirable but that were put forward by stakeholders. This means that some of the policy options might seem problematic, because of the subsidiarity principle or because they might not seem efficient or effective. However, for reasons of transparency, they were not excluded in advance.

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31 www.civitas-initiative.eu.

32 www.eltis.org.

Table 1: Overview of the long list of policy options

Free-flowing towns and cities
1. Require cities to set modal split targets
There are many ways in which cities can influence modal split, i.e. the relative shares of each mode of transport. This policy option proposes to require cities to set modal split targets, including larger shares for sustainable modes, but leaving them free to decide how to achieve them. The objective would be to increase the share of sustainable modes in urban mobility and transport.
2. Ban private car use in city centres
Many cities have banned cars from their centres, for example by means of pedestrianisation schemes, physical restrictions or regulatory measures. These have improved environmental quality and liveability in those city centres. Some cities are gradually extending these areas. This policy option proposes to require all cities to ban cars from their centres (although allowing exceptions) in areas that do not comply with EU environmental legislation. The objective would be to obtain a substantial improvement in environmental quality and liveability in city centres.
3. Ban on-street parking in city centres
Many cities are banning on-street parking in their centres. This is done either to improve the traffic capacity or to widen the pavements or install cycle infrastructure. The latter improves environmental quality and liveability in those streets. This policy option proposes to require all cities to ban on-street parking in their centres, which implicitly would push for more carparks and more parking on private properties. The objective would be to obtain a substantial improvement in environmental quality and liveability in city centres.
4. Recognise efforts of cities to improve sustainable urban mobility
A labelling scheme could be used to recognise the efforts of pioneering cities to combat congestion and improve living conditions. Recognition at European level of serious efforts made by cities can be expected to act as a stimulus. And it could serve as a magnet to attract funding and for industries and businesses looking for new locations for their activities. European recognition could be combined with an award and/or financial grant for the "best" cities.
5. Provide information on access limitations for road users in cities
An increasing number of cities are introducing limitations on access to urban areas for motor vehicles in the form of environmental zones or road user charging. Both measures should reduce pollutant emissions and contribute to meeting the obligations arising from EU air quality legislation. Road use charging and parking pricing are also seen by some stakeholders as an effective way to raise revenue for transport investments and to manage demand. In addition, they could fit into the broader policy perspective of internalisation of external costs. Many different schemes are appearing. The objective would be to provide information to citizens, transport providers and decision-makers.
6. Promote more efficient urban freight distribution and logistics
Urban freight transport is sometimes forgotten by local policy-makers. This policy action would incorporate the urban activities included in the 2007 Freight Logistics Action Plan (dissemination of best practice, recommendations on benchmarks and indicators and reinforcement of CIVITAS). Additional activities could, however, be launched and recommendations for policy-makers prepared.
Greener towns and cities
7. Internalise the external costs of urban transport
Transport imposes external costs on society that are not fully paid for by those benefiting from the services. The objective of this policy option would be to make the users in all urban areas pay for the external costs that they cause to others and to society in general. As a first step, this policy option could focus on developing information material for cities, information exchange and networking activities.

8. Require cities to set targets for CO_2 emissions from urban transport
Some local authorities have expressed the wish to take responsibility for addressing climate change. They can influence the vehicles used in their city and implement policy measures that lead to more energy-efficient urban mobility. This action proposes to require all local authorities to set targets for CO_2 emissions from urban mobility and transport, leaving them free to decide how to achieve them. The objective would be to lower CO_2 emissions from urban mobility and transport.
9. Require zero CO_2 propulsion for urban public transport
City and urban authorities have extensive influence over the vehicles used in public transport, either because they own them or because they write the specifications in the public service contracts. This policy option proposes to require cities to work towards zero CO_2 emissions from urban public transport by a given date in the long term, leaving them free to decide how to achieve this. The objective would be to lower CO_2 emissions from urban mobility and transport.
10. Promote "green" procurement by public authorities
Joint public procurement of vehicles will speed up, in a cost-effective way, replacement of older vehicles operated by public authorities or by private operators under public service contracts. The aim of this policy option would be to bring potential buyers together in consortia so that lower prices can be obtained as a result of economies of scale. In addition, possible administrative barriers at national, regional and local levels to joint procurement would be overcome. This contributes to the objective of more energy-efficient and environmentally friendly urban mobility.
11. Promote take-up of clean and energy-efficient vehicle technology and alternative fuels
Reduction of pollutant emissions and energy consumption from vehicles are key objectives of EU policy. EU legislation has progressively lowered the limits for pollutant emissions from motor vehicles. But lead times for mandatory compliance are long and the latest Euro 6 standard will not start to apply until 2014. Member States, however, can use incentives to stimulate earlier uptake. Market introduction of alternative fuels has been promoted in Community policy. Member States, however, have used different measures, with the focus on different alternative fuels, leading in some cases to fragmented markets and limitations in vehicle operation across Europe due to heterogeneous infrastructure. This option proposes to provide information on support schemes for clean and energy-efficient vehicles and alternative fuels along with a product overview. This contributes to the objective of more energy-efficient and environmentally friendly urban mobility.
12. Require designation of "green" zones in sensitive areas
An increasing number of cities are designating environmental or "green" zones in sensitive areas, for example to tackle environmental problems. This policy option proposes requiring all cities to designate such zones in a harmonised way for sensitive areas that do not comply with EU environmental legislation, for example in the field of air quality. The objective would be to obtain a substantial improvement in environmental quality and liveability in urban areas.
13. Harmonise rules for environmental zones
However laudable the initiatives are, the fragmentation that is resulting from the local initiatives to address the environmental problems by means of environmental zones is confusing travellers and freight operators and might run counter to the philosophy of the internal market. The objective would be to have rules for access and vehicle identification that are coherent and easily understood by all citizens and businesses in the EU for cities interested in using this policy tool.
Smarter urban transport
14. Improve the interoperability of ticketing and payment systems for public transport
Improving the interoperability, which could involve standardisation, of ticketing and payment systems is aimed at allowing seamless use of the public transport system by passengers paying to use the system and also by users of other transport infrastructure (for example, car users who are charged for road use or who use park-and-ride to combine car and public transport or cyclists who pay for guarded bicycle stands at stations). The objective of this policy action would be to make it easier to use public transport and to combine private and public modes.

15. Improve harmonisation and provision of travel information
Harmonisation and provision of travel information across different transport modes and cities will promote use of public transport by different kinds of short- and long-distance travellers. This policy option proposes to make it easier for non-regular users to use public transport, for example by providing information on the internet and by more user-friendly signs. This should be seen against the background of the changing expectations of different societal groups. The objective would be to make public transport easier to use for non-regular users and for visitors.
Accessible urban transport
16. Require transport impact assessments as a precondition for planning permission
Urban development is often decided without sufficient consideration of the consequences for urban mobility and the transport system. This policy option would aim at imposing an obligation on authorities to assess this impact before granting planning permission. This would ensure that the consequences of spatial developments on urban mobility, such as extra traffic on the roads or developments at locations that are difficult to reach by public transport or by bicycle, would be known before a decision is taken on planning permission. The overall objective would be to improve accessibility and mobility in urban areas.
17. Require establishment of urban mobility authorities
The division of transport planning responsibilities is inefficient in many cases and often does not permit solutions that are necessary to meet urban mobility needs and solve urban transport problems in an integrated way. In addition, spatial development, transport planning, economic development and operation of transport services extend across city boundaries. Requiring establishment of urban mobility authorities in all major urban areas might help solve these problems.
18. Require adoption of SUTPs as a condition for EU funding
The idea of promoting sustainable urban transport plans (SUTPs) was launched by the European Commission as part of the Thematic Strategy on the Urban Environment. Under this policy option, any city or region requesting EU financial support for urban mobility projects from the regional policy instruments, the RTD Framework Programme or any other EU financial programme would be required to adopt such a plan. This might give a significant stimulus to comprehensive, integrated planning for sustainable urban mobility. The objective would be to achieve more sustainable patterns of land use and mobility in urban areas.
19. Promote integrated planning for urban mobility and transport
This policy option combines the ideas behind options 17 and 18 but would aim at promoting use of sustainable urban transport or mobility plans in combination with setting up the appropriate structures for voluntary cooperation. The objective would be to provide guidance, information and support to authorities which want to prepare integrated plans.
20. Improve coordination between urban mobility and land-use planning
Land-use patterns and intensity have clear implications for the demand for mobility and for how the demand for mobility can be met. This policy option would support stakeholders in improving coordination between mobility and land-use planning at an early stage, resulting in reducing the demand for mobility and transport and in more rational development of the transport network. This would contribute to reducing congestion and pollution and lowering costs for infrastructure development and public transport services per passenger- and freight-kilometre.
21. Strengthen the rights and obligations of users of public transport
One of the barriers to use of public transport is that users often have little or no redress when services are interrupted, when scheduled services are late or in other cases of non-delivery by the operator. On the other hand, public transport providers have to bear the costs of passengers who damage their vehicles, trains, etc. This policy option would bring together a set of basic rights and obligations in a common framework. This would contribute to improving the image and quality of public transport. The overall objective would be to raise the quality of urban public transport and make it more attractive to travellers.

22. Improve accessibility of public transport
There are two dimensions to accessibility: geographic and physical. The public transport system should be available to all citizens, not just citizens living in certain areas. The public transport system should also be accessible to all citizens, regardless of their physical, cultural and socio-economic status. The objective of this policy option would be to improve the accessibility of public transport for all city residents, allowing better and easier access to all activities.
23. Require operators to accept bicycles in urban public transport
The option for travellers to take their bicycle onto public transport vehicles offers a flexible way to facilitate door-to-door travel, even if the origin and/or destination are not near a public transport stop. In congested areas, this combination of modes can outperform the private car, for example in terms of speed. Some public transport operators accept bicycles on certain vehicles, some only outside rush hours and some not at all. This policy option proposes to require all operators to accept bicycles at certain harmonised periods. The objective would be to improve the competitive position of public transport and the bicycle against private car use.
Safe and secure urban transport
24. Promote safe walking and safe cycling
Walking and cycling are two separate modes of transport. Each of them has its own strengths and weaknesses and has different potential both as a "single mode" and as one link in a trip-chain. However, in general terms, walking and cycling are well suited for short trips (under 5 km) and in urban areas a very large proportion of all trips are shorter than 5 km. There are still many short-distance car trips that could be made on foot or by bicycle. The objective would be to encourage authorities to improve the conditions for safe walking and safe cycling. One aspect that could be looked at is separation of traffic flows.
25. Raise the minimum age for driving licences to 25
Young car drivers and motorcycle riders are involved in a disproportionate number of traffic accidents. As their age increases, drivers become more careful. This policy option proposes to require national authorities to increase the minimum age for the final driving test from 18 to 25 years. After an initial test, persons between 18 and 25 years could be issued with a temporary licence that could easily be withdrawn. The objective would be to improve urban road safety.
Cross-cutting issues
26. Improve data harmonisation, collection, validation and reporting
Accurate, timely, comparable and relevant information is the basis for making effective policy choices. Currently, there is no single source of information on the situation of urban mobility and transport in all Europe's cities. The objective of this policy option would be to provide policy-makers with such information, strengthening the basis for policy-making on urban mobility and transport. This initiative will have to add value to existing data and information platforms and will need to take account of financial and organisational limitations. In the longer term, working closely with other Commission departments such as EUROSTAT and DG REGIO, the action could result in a permanent monitoring system.
27. Improve dissemination of knowledge and best practice
A wealth of knowledge and experience on urban mobility has been built up using local, regional, national and EU funding. This policy option aims to improve access and use and to increase the amount and the quality of the information available. It could include compilation of an overview of relevant legislation and funding opportunities.
28. Intensify research, development and demonstration activities
Innovative solutions already play a key role in operation and the performance of the urban mobility and transport system. RTD could be intensified to play an even bigger role in helping to address the mobility problems in urban areas. One area that could be given specific attention is RTD to support development of intelligent Galileo applications. Another area could cover integrated demonstration initiatives such as CIVITAS. The objective of this policy option would be to promote innovation in urban mobility and transport.

29. Promote awareness and behavioural change, including eco-driving
Key factors that influence energy consumption and emissions and that can help to optimise use of the transport system are modal choice, travel behaviour and driving style. These can be influenced by information, communication and marketing campaigns, organising services and coordination activities. This policy option includes, for example, mobility management, awareness campaigns and stimulating eco-driving with the aid of awareness-raising activities and, where appropriate, training for driving licences. The objective would be to make better use of existing capacity and reduce energy consumption and emissions with the aid of more sustainable travel behaviour.
30. Promote investment in integrated urban transport, including public transport
This policy option would aim at increasing cities' access to EU financial mechanisms for urban transport measures. Further opening-up of existing instruments or development of additional funding opportunities could also be considered, perhaps in cooperation with the EIB. The Commission could also address use of the Structural Funds for improving not only integrated urban transport and public transport systems but also connections between urban transport systems and the TEN-T network. The objective would be to stimulate investment in renewal and innovation in urban transport, especially in new Member States.
31. Require implementation of a "value-capture tax"
Transport improvements often lead to an increase in the market value of properties that are served by the improvement. This gain normally accrues to the owners, whereas the costs are borne by the authorities or the transport providers. Some city authorities use various financial instruments to make the benefiting proprietors contribute (part of) the costs of the improvements. This policy option proposes to require introduction of a harmonised tax to capture the value increases of property as a result of improvements in urban transport. The objective would be to lower the cost of transport improvements for authorities.

Step 2: Screening on subsidiarity

Each policy option on the long list was screened on subsidiarity at the level of each instrument that could (theoretically) be used for implementation. If the option failed this test, it was no longer taken into account and no further analysis was carried out. Details are provided in Annex V.

Step 3: Screening on efficiency, effectiveness and consistency

Each policy option that successfully passed step 2 was screened against the efficiency, effectiveness and consistency criteria. The policy options that successfully passed step 3 were put on the shortlist. A detailed explanation of the scoring is provided in Annex V.

The screening on subsidiarity and on efficiency, effectiveness and consistency reduced the long list of 31 options to a shortlist of 18 policy options. Options 1, 2, 3, 4, 8, 9, 12, 16, 17, 18, 23, 25 and 31 were discarded.

The following policy options were kept on the shortlist (see Table 2):

Table 2: Overview of the shortlisted policy options

Free-flowing towns and cities	
5	Provide information on access limitations for road users in cities
6	Promote more efficient urban freight distribution and logistics
Greener towns and cities	
7	Internalise the external costs of urban mobility
10	Promote “green” procurement by public authorities
11	Promote take-up of clean and energy-efficient vehicle technology and alternative fuels
13	Harmonise rules for environmental zones
Smarter urban transport	
14	Improve the interoperability of ticketing and payment systems for public transport
15	Improve harmonisation and provision of travel information
Accessible urban transport	
19	Promote integrated planning for urban mobility and transport
20	Improve coordination between urban mobility and land-use planning
21	Strengthen the rights and obligations of users of public transport
22	Improve accessibility of public transport
Safe and secure urban transport	
24	Promote safe walking and safe cycling
Cross-cutting issues	
26	Improve data harmonisation, collection, validation and reporting
27	Improve dissemination of knowledge and best practice
28	Intensify research, development and demonstration activities
29	Promote awareness and behavioural change, including eco-driving
30	Promote investment in integrated urban transport, including public transport

4.2. Stakeholder support

The support from stakeholders for each policy option gives valuable background information for the decision-making process but is not considered in the formal screening process. Therefore, the level of acceptability of the different policy options by stakeholders was assessed. This assessment was based on the results of the stakeholder consultation on the Green Paper on urban mobility. All policy options on the long list were assessed.

Annex I provides a summary of the level of support for the policy options from stakeholders. However, as stated earlier, stakeholder support is not taken into account in the selection process. Only Chapter 6, where shortlisted policy options are discussed and possible action identified, gives information on stakeholder support.

5. ANALYSIS OF THE IMPACT OF THE SHORTLISTED OPTIONS

This chapter analyses the impact of the shortlisted policy options. The assessment is based on indicators covering mobility, congestion, energy, the environment, economic and social issues and policy-making. These indicators are consistent with the indicators used in the baseline scenario and show the contribution made towards achieving the relevant objective.

Table 3 presents an overview of the shortlisted policy options, of the indicators and of the fields on which they have an impact. A detailed description of the impact of each policy option, in qualitative and/or quantitative terms, is provided in Annex VI.

It should be borne in mind that each kind of impact is considered independently, but that in reality different impacts are inter-related. This might lead to synergies or could result in contradictory impacts[33]. Impacts are also influenced by the instrument selected for implementation once the actions are decided. For this reason, this impact assessment cannot be exhaustive. Every kind of impact is given the same weight. Indirect impacts have not been taken into account.

Some general conclusions can be drawn from the impact analysis. It is assumed that policy options that receive a large number of ticks in Table 3 under a specific cluster of indicators (such as mobility or congestion) make the most integrated contribution. This does not imply that a large number of ticks means that a given policy option makes the best contribution.

– Most integrated contribution overall:
  – Policy option 7 (internalisation of external costs);
  – Policy option 20 (coordination of planning);
  – Policy option 30 (investment).

These options contribute to a particularly wide range of indicators.

– Most integrated contribution to the economic indicators:
  – Policy option 6 (urban freight);
  – Policy option 11 (vehicles and fuels);
  – Policy option 13 (environmental zones);
  – Policy option 14 (ticketing interoperability).

The positive economic impact of these policy options stems from the lower costs for operators due to fewer freight vehicle-kilometres and tonne-hours lost (option 6), a better investment climate (option 6), increased industrial production resulting from higher demand (options 11 and 14), a stronger competitive position for the EU industry (options 11 and 14) and lower administrative costs (option 13).

[33] See Section 6.1 for a discussion of synergies.

– Most integrated contribution to the environmental indicators:

  – Policy option 6 (urban freight);
  – Policy option 7 (internalisation);
  – Policy option 10 (green procurement);
  – Policy option 11 (vehicles and fuels);
  – Policy option 20 (coordination of planning);
  – Policy option 22 (accessibility);
  – Policy option 24 (walking and cycling);
  – Policy option 29 (awareness);
  – Policy option 30 (investment).

The positive environmental impact of these policy options stems from lower emissions caused by a reduction of vehicle-kilometres (options 6, 7 and 20), a higher market share of environmentally friendly vehicles (options 10 and 11), lower emissions caused by smoother driving (option 29) and a modal shift towards public transport (options 29 and 30).

– Most integrated contribution to the social indicators:

  – Policy option 6 (urban freight);
  – Policy option 7 (internalisation);
  – Policy option 11 (vehicles and fuels);
  – Policy option 22 (accessibility);
  – Policy option 24 (walking and cycling);
  – Policy option 29 (awareness).

The positive social impact of these policy options stems from the positive impact on health as a result of lower emission levels (options 6, 7, 11, 24 and 29), increased road safety (options 7, 9 and 24) and higher levels of social inclusion (option 22).

– Best contribution to public transport use:

The assessment also provides a means of identifying policy options that make a positive contribution to one specific indicator. For example, policy options 7 (internalisation), 14 (ticketing interoperability), 15 (travel information), 19 (integrated planning), 20 (coordination of planning), 21 (user rights), 22 (accessibility) and 30 (investments) all contribute to an increase in public transport passenger-kilometres.

– Best contribution to social inclusion:

Positive contributions are made to the social inclusion indicator by policy options 15 (travel information), 19 (integrated planning) and 30 (investment) and the public-transport-related options 14 (ticketing interoperability), 21 (user rights) and 22 (accessibility). These public-transport-related options should, however, be developed in a way that attracts existing car drivers and not pedestrians or cyclists. If the measures were mainly to attract the latter, their impact would be less positive.

– - Best contribution to policy-making:

Policy options 5 (information on access limitations), 26 (data), 27 (dissemination) and 28 (research) contribute specifically to providing a stronger basis for policy-making. The same also applies to policy options 10 (green procurement), 13 (environmental zones), 19 (integrated planning), 20 (coordination of planning) and 29 (awareness).

Table 3: Overview of policy options on the shortlist, indicators and impact

Policy option number	Indicators →	Decline in private car vehicle-km	Increase in public transport passenger-km	Increase in non-motorised vehicle-km	Decline in passenger-hours lost	Decline in tonne-hours lost	Decline in energy consumption in Mtoe	Decline in GHG emissions	Decline in air-polluting emissions	Impact on admin. costs for business	Increased competition in internal market	Improvement of social inclusion	Decrease in traffic fatalities	Improvement of health impact of emissions	Improvement of health impact of noise	Stronger basis for policy-making
		Mobility			Congestion		Energy	Environment		Economy		Social				Policy
Free-flowing towns and cities																
5	Provide information on access limitations for road users in cities															√
6	Promote more efficient urban freight distribution and logistics					√	√	√	√	√	√		√	√	√	
Greener towns and cities																
7	Internalise the external costs of urban transport	√	√	√	√	√	√	√	√				√	√	√	
10	Promote "green" procurement by public authorities						√	√	√					√		√
11	Promote take-up of clean and energy-efficient vehicle technology and alternative fuels						√	√	√	√	√		√	√	√	
13	Harmonise rules for environmental zones									√	√					√
Smarter urban transport																
14	Improve the interoperability of ticketing and payment systems for public transport	√	√		√					√	√	√				
15	Improve harmonisation and provision of travel information	√	√		√	√						√			√	
Accessible urban transport																
19	Promote integrated planning for urban mobility and transport	√	√	√	√	√	√					√	√			√
20	Improve coordination between urban mobility and land-use planning	√	√	√	√	√	√	√	√	√		√			√	√
21	Strengthen the rights and obligations of users of public transport	√	√									√				
22	Improve accessibility of public transport	√	√		√	√	√	√	√			√		√	√	
Safe and secure urban transport																
24	Promote safe walking and safe cycling	√		√	√	√	√	√	√			√	√	√	√	
Cross-cutting issues																
26	Improve data harmonisation, collection, validation and reporting															√
27	Improve dissemination of knowledge and best practice															√
28	Intensify research, development and demonstration activities															√
29	Promote awareness and behavioural change, including eco-driving						√	√	√				√	√	√	√
30	Promote investment in integrated urban transport, including public transport	√	√	√	√	√	√	√	√			√				

6. COMPARING AND ASSESSING THE OPTIONS

6.1. Fine-tuning the shortlisted options

This section analyses the most appropriate instrument to implement each of the 18 shortlisted options. This analysis assessed the eight following instruments against the criteria: cost-effectiveness, proportionality, consistency with other inter-institutional or sector-related developments and administrative burden. Details of the analysis are given in Annex V and the results are summarised in Section 6.2.

Overview of instruments[34]:

1. Self-regulation (monitoring);
2. Open method of coordination;
3. Information and guidelines;
4. Market-based instruments;
5. Direct public-sector financial intervention;
6. Co-regulation;
7. Framework directive;
8. Prescriptive regulatory action (regulation, directive or decision).

As part of the analysis, possible actions for the forthcoming Action Plan were considered, also using the feedback received during the consultation process. Possible synergies[35] were identified.

To achieve coherence, coordination should be ensured between the individual actions in the Action Plan, between the actions in the Action Plan and other EU initiatives and, whenever possible, between actions in the Action Plan and activities outside an EU framework, for example at the level of stakeholders.

The actions in the Action Plan should be consistent with the following Commission activities and initiatives:

- ITS-related actions should be coordinated with the actions in the new ITS Action Plan.
- Actions related to urban freight distribution should be in line with the Freight Logistics Action Plan.
- Actions on eco-driving should be in line with the Energy Efficiency Action Plan and should build on experience from the Intelligent Energy Europe programme.

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34 Source: the Commission's impact assessment guidelines.

35 There are three types of synergy between policy options or possible actions. First, there could be possible synergies between individual policy options or actions addressing similar challenges. To harness these possible synergies, the policy options have been clustered in line with the specific challenges described in the Green Paper. Second, there could also be possible synergies between specific policy options or actions on the one hand and cross-cutting policy options or actions on the other. Third, there could be possible synergies between instruments.

- Actions related to raising awareness should take into account the initiatives taken in the framework of the European Mobility Week, the Green Week and the EU Sustainable Energy Week.

- Actions related to data collection should take into account the work by EUROSTAT, the Urban Audit and the RTD Framework Programme.

- Actions related to internalisation of external costs should be in line with the Commission's "Greening of transport" package.

Most of the options recommended in this impact assessment can be taken up directly in the Action Plan. This is particularly the case where objectives and tools for focused dissemination of information and best practice have been identified. In other cases, additional stages of consultation with the stakeholders and specific impact assessments will be necessary. In these cases, the Action Plan should then propose appropriate preparatory action to clarify, in concertation with the parties concerned, the way forward and build up broad support for dedicated EU action.

6.2. Assessment of shortlisted options and identification of possible actions

As mentioned in section 4.1, options 1, 2, 3, 4, 8, 9, 12, 16, 17, 18, 23, 25 and 31 were not shortlisted.

Option 5: Provide information on access limitations for road users in cities

This option covers urban road user charging and access limitations and would support the wider agenda of internalisation of external costs. This option will make a positive contribution to better policy-making. Many stakeholders support EU initiatives in this field.

Taking into account stakeholders' varying and sometimes conflicting views on binding rules for urban road user charging and access restrictions, further exploration is needed. Therefore, initially, a non-regulatory approach is proposed. To harness synergies between the possible actions, this option could be considered together with option 13. The possible action could explore, together with stakeholders, the most appropriate way forward in the area of environmental zones. Possible action could also include exchanges of information on urban road user charging.

Option 6: Promote more efficient urban freight distribution and logistics

This option addresses the problem that urban freight transport and distribution services are sometimes not well integrated into local transport policies. This policy option will make a positive contribution to a wide range of mobility, congestion, energy, environmental, economic and social objectives. Most stakeholders support this. Taking into account proportionality arguments, a non-regulatory approach should be followed that could include information and guidelines and/or targeted financial intervention.

Possible actions need to add value to the initiatives launched under the Logistics Action Plan. One particular result of the Green Paper consultation is that stakeholders emphasised the need for policy-makers to pay more attention to urban freight. Therefore, possible actions could include active engagement with stakeholders, collection of information and provision of guidelines in the form of a recommendation.

Option 7: Internalise the external costs of urban transport

This option aims at making transport users in all urban areas pay for the external costs that their use causes to others and to society in general. This policy option will make a positive contribution to mobility, congestion, energy, environmental and social objectives. Stakeholders are divided in their support for an EU initiative in this field. A regulatory approach could be used, perhaps in combination with market-based instruments.

However, before deciding further steps, the inter-institutional process on the recently launched general method for internalisation of external costs needs to be finalised first. Once the EU framework with the new method is in place, a basis will exist to consider the way forward for mobility and transport in urban areas. The possible action could focus on information-gathering and further assessment in the form of a study. Among other things, this study should pay attention to the public acceptability and availability of ITS tools.

Option 10: Promote "green" procurement by public authorities

As a follow-up to the proposal for a Directive on the promotion of clean and energy-efficient road vehicles, this option aims to bring potential buyers of public service vehicles together in buyers-consortia. This policy option will make a positive contribution to energy, environmental and social objectives. It will also support the competitive position of the EU industry. Many stakeholders support this policy option. A variety of instruments could be used, for example provision of structured information or co-regulation.
Before considering the need for additional steps, the proposed Directive should enter into force and its impact should be assessed first. The possible action for the short term should therefore support implementation of the Directive. The action could take the form of provision of information to potential buyers of public service vehicles with the aid of an internet-based guide.

Option 11: Promote take-up of clean and energy-efficient vehicle technology and alternative fuels

This option aims at stimulating the early take-up of new vehicle standards and alternative fuels. It will make a positive contribution to energy, environmental, economic and social objectives. Many stakeholders support it. A variety of instruments could be used for this option, for example providing information on support schemes and/or available vehicle technology, market-based instruments, financial intervention or regulation.

Before considering the need for additional steps, the proposed Directive should enter into force and its impact should be assessed first. In order to harness synergies, this option could, in the short term, be considered in combination with option 10 and focus on provision of information.

Option 13: Harmonise access rules for environmental zones

This option addresses the local initiatives taken to reduce environmental problems and improve the quality of urban life. The objective will be to agree streamlined and easily understandable rules for access and vehicle identification. The harmonisation proposed in this option will contribute to environmental and economic objectives, better functioning of the internal market and better policy-making. Regulatory instruments could be used.

However, taking into account stakeholders' varying and sometimes conflicting views, further exploration and discussion with stakeholders is needed to specify the exact scope of the

option. Therefore, initially, a non-regulatory approach is proposed. In order to harness synergies between the possible actions, in the short term this option could be considered in combination with option 5. Besides active engagement with experts and stakeholders, possible action could take the form of a study to identify the most appropriate way forward in relation to the available instruments (information, guidelines, recommendation or regulation).

Option 14: Improve the interoperability of ticketing and payment systems for public transport

This option helps to make it easier to use public transport and combine private and public modes. This policy option will make a positive contribution to mobility, congestion, environmental, economic and social objectives. Most stakeholders support this. A variety of instruments could be used, but the most promising direction would be a regulatory approach (standards).

One possible obstacle lies, however, in the complexity of harmonising existing and future local ITS systems, defining interfaces between them and involving a broad range of stakeholders. Therefore, initially, a non-regulatory approach should be followed. Possible action could include a study to identify current practices and issues, collection of information and provision of EU guidelines in the form of a recommendation.

Option 15: Improve harmonisation and provision of travel information

This option aims at harmonisation and provision of travel information across different modes of transport and cities. It will promote use of public transport by different categories of traveller. This policy option will make a positive contribution to mobility, congestion and social objectives. Most stakeholders support this. A variety of instruments could be used, including information and guidelines, co-regulation and a regulatory approach (standards).

One possible obstacle lies, however, in the complexity of harmonising existing and future urban ITS systems, defining interfaces between them and involving a broad range of stakeholders. Therefore, initially, a non-regulatory approach should be followed.

Possible action could start "top-down" with provision of travel information via a single European "entrance portal" on the internet[36]. The portal would offer access to existing local and regional information systems. Information providers could be invited to become actively involved in implementing it. In the longer term and in combination with other initiatives, this could be a first step towards "soft" harmonisation of travel information across the EU.

Option 19: Promote integrated planning for urban mobility and transport

This option focuses on the concept of sustainable urban transport mobility plans. The aim is to provide practical guidance, information and support to authorities. It could also include coordination and networking activities. This option will make a positive contribution to a wide range of mobility, congestion, energy and social objectives. It will also contribute to better policy-making. Most stakeholders support an EU initiative in this field. A non-regulatory approach would be most effective and proportionate.

The possible action could include provision of EU guidelines in the form of a recommendation on sustainable urban transport mobility plans. Preparation of the

[36] Subject to confirmation of its importance relative to other Commission priorities in the field of information technology.

recommendation could be supported by collecting information and providing practical support with the aim of better coordinating approaches across cities, regions and Member States.

Option 20: Improve coordination between urban mobility and land-use planning

This option helps to ensure more thorough consideration of the impact of urban development and restructuring on mobility and transport demand. It will make a positive contribution to congestion, energy, environmental, economic and social objectives. Stakeholders are divided in their support. A non-regulatory approach should be followed for any new action, for example in the form of self regulation or provision of information and guidelines.

Given the limited powers of the EU over planning, the added value of any new initiative on top of existing ones would probably be limited. The focus is therefore on continuing the cooperation with Member States to foster better coordination between urban development and spatial planning in the framework of the First Action Programme implementing the Territorial Agenda and implementation of the Leipzig Charter. In addition, specific attention could be paid to urban planning in the RTD Framework Programme.

In order to harness synergies, in the short term this option could be considered in combination with option 19. Possible action could therefore include provision of EU guidelines in the form of a recommendation. Specific initiatives could be launched to support preparation and implementation of the guidelines.

Option 21: Strengthen the rights and obligations of users of public transport

This option contributes to improving the quality of public transport. It makes a positive contribution to the mobility and social objectives. In general, stakeholders are cautious and point to the initiatives already being undertaken by the sector. A group of stakeholders from the urban public transport sector recently developed a voluntary customer charter. This approach should be given time to mature.

Possible action at this stage could therefore consist of supporting and monitoring this self-regulation at sector level. Particular attention should be paid to how authorities and users' organisations will get involved in the initiative and to how strong the sector's voluntary commitments will be. Further EU action, such as preparation of specific legislative proposals, will depend on the results of this self-regulation.

Option 22: Improve accessibility of public transport

This option aims at improving the accessibility of public transport for all city residents to allow better and easier access to the activities relevant to them. This policy option will make a positive contribution to mobility, energy, environmental and social objectives. Many stakeholders support an initiative by the EU in this field. A variety of instruments could be used, but the most promising direction seems a regulatory approach.

In order to harness synergies between the possible actions, this option could, in the short term, be considered in combination with option 21. Possible action could therefore consist of supporting and monitoring self-regulation at sectoral level, while ensuring that accessibility issues are incorporated in the customer charter.

Option 24: Promote safe walking and safe cycling

This option encourages authorities to improve the conditions for safe walking and safe cycling in urban areas. This policy option will make a positive contribution to mobility, congestion,

environmental, energy and social objectives. Most stakeholders support an EU initiative. For proportionality reasons, a non-regulatory approach is proposed that could include coordination, information, guidelines and/or financial intervention.

Because of the limited availability of financial resources in the short term and the fact that stakeholders have emphasised the need for policy-makers to pay more attention to safe walking and safe cycling, action could include collection of information, followed by provision of EU guidelines in the form of a recommendation.

Option 26: Improve data harmonisation, collection, validation and reporting

This option helps to improve decision-making about urban mobility and transport at all levels of government. It will make a positive contribution to better policy-making. Most stakeholders support an EU initiative in this field as long as it does not become a bureaucratic exercise. A range of instruments could be used, including coordination, financial intervention and/or regulatory action.

The extent to which the quality and availability of data will improve depends on the scale and scope of the exercise, the funds made available to support it and how clearly the data requirements are formulated. Possible action could therefore take the form of a study which should explore the data needs, data availability, costs of data collection and possible implementing mechanisms.

Option 27: Improve dissemination of knowledge and best practice

This option will make a positive contribution to better policy-making at all levels of government. Most stakeholders support it. A non-regulatory approach is proposed, for example by means of coordination, information, guidelines and/or financial intervention. Direct public-sector intervention is expected to facilitate involvement of stakeholders.

Possible action could include organising a regular event on urban mobility and facilitating exchanges of information between stakeholders and experts. It could also include provision of information, best practice and knowledge via an internet-based guide. In order to harness synergies, this internet-based guide could be linked with the information and support initiatives under options 19 and 20.

Option 28: Intensify research, development and demonstration activities

This option helps to promote innovation and will have a positive influence on the quality of policy-making and implementation. Many stakeholders support an EU initiative in this field. This option could be implemented most effectively by means of financial intervention.

Possible action could include supporting targeted RTD action with a financial contribution from the RTD Framework Programme. To ensure that the results of RTD will actually be used, active involvement of users and good dissemination of results are imperative. In order to harness synergies between the possible actions, the event and the internet-based guide under option 27 might play a role in dissemination.

Option 29: Promote awareness and behavioural change, including eco-driving

This option will take the form of promoting activities to raise awareness of urban mobility and/or energy issues. This option will make a positive contribution to energy, environmental and social objectives (e.g. road safety) and to better policy-making. Many stakeholders support this. A variety of instruments could be used, including financial intervention,

information, guidelines, coordination and/or a regulatory approach. A non-regulatory approach would be most effective and proportionate.

Therefore, possible action could include financial support for an awareness-raising campaign on sustainable urban mobility at EU level. The action could also include a mechanism to coordinate local, regional and national activities related to the European campaign and could focus on integration of issues related to driving behaviour in education.

Option 30: Promote investment in integrated urban transport, including public transport

This option aims at increasing cities' and regions' access to existing EU financial mechanisms. This policy option will contribute to mobility, congestion, energy, environmental and social objectives. Many stakeholders support this. A non-regulatory approach should be followed, for example in the form of provision of information and guidelines on sources of funding or targeted EU financial intervention.

Possible action could include collection of information, followed by provision of EU guidelines in the form of a recommendation on investment in urban mobility and the link with cohesion policy. In addition, a targeted financial contribution might be provided to pilot projects. In order to harness synergies between the possible actions, the internet-based guide under option 27 could provide information on financing instruments. At this stage, the benefits of additional instruments, either from Commission sources or from the EIB, could be investigated with a view to a specific EU initiative in the longer term.

6.3. Towards the Action Plan on Urban Mobility

Table 4 provides an overview of the possible actions identified by this impact assessment structured by the themes of the Green Paper on urban mobility. The table also includes preliminary indications of the timing, costs and benefits, the administrative burden and the contribution which the options could make to the main objectives set out in the Green Paper. On the basis of the 18 shortlisted policy options, by exploiting synergies between contents and between instruments, and by optimising the identity, visibility and manageability of individual actions, 20 proposals for possible actions at EU level have been developed. The preliminary timing indicated for each possible action allows for an effective interaction between individual actions and for an efficient use of resources. The interaction and synergies between the actions, and their multiple contributions to addressing the main challenges posed by sustainable urban mobility, suggest a coherent presentation of a package of 20 possible actions in the form of an integrated Action Plan.

The suggestions for the possible actions have provided the basis for the preparation of the Action Plan on Urban Mobility. During the preparatory process for the Action Plan the actions will be specified, prioritised and politically validated, taking into account –among other things– the available resources.The EU can support national, regional and local authorities, when appropriate, with policy directions, incentives, frameworks and practical tools to help them achieve their objectives in the field of sustainable urban mobility. This can also help to ensure that, at local, regional and national levels, appropriate initiatives are taken and diversification does not turn into unnecessary fragmentation.

With the Action Plan, the Commission wants to facilitate the work of local, regional and national authorities. EU-wide dissemination and replication of tested solutions can give authorities the possibility to achieve more, better and at lower cost. Local, regional and national authorities have flexibility and freedom to select solutions appropriate to their specific situation.

Because of the nature of the proposed actions and the flexibility of their application, plus the lack of data, a quantitative assessment of impacts of the actions against the baseline scenario is not feasible. However, it can be assumed that the package of 20 possible actions will make a positive contribution to mobility, congestion, energy, environmental, economic and social objectives. This has been demonstrated by EU-funded projects.

For example, an integrated approach promoted by the proposed actions, which combines transport policy measures with the introduction of clean vehicle technologies and alternative fuels, has been tested successfully in CIVITAS cities. It has brought reductions in CO2 emissions of up to 20 – 22 %[37]. As almost half of all car trips are below five kilometres, modal shift policies that exploit the potential of cycling, walking and public transport can reduce congestion and bring environmental, energy and health benefits. With two out of three of all road accidents happening in urban areas, investments in safe urban transport infrastructure will lead to a reduction of pedestrians and cyclists accidents.

The package of actions can also contribute to economic objectives. With an important part of congestion in the EU being located in and around urban areas, congestion relief measures, for example through public transport improvements, will bring economic benefits. In addition,

[37] A policy assessment of the CIVITAS Initiative. September 2006.

there are estimates that 30 jobs are created with every €1 million invested in public transport infrastructure. And finally, the package of actions can help to bridge the gap between citizens' expectations and the perceived quality of urban transport. This impact assessment has demonstrated that there is clear overall support for action at EU level. This support also exists among the other European institutions. While there were varying views expressed about which actions at the EU level could add value, the consultation has helped to identify 'common ground' where EU action could add value to the action taken at local, regional and national levels.

Implementation of the actions will be closely monitored and assessed to ensure that subsidiarity and proportionality concerns are addressed and that all alternatives to regulatory action will be explored for future initiatives. This impact assessment in no way prejudges the outcome of impact assessments for specific proposals that might be made in the future. For example, in line with the relevant procedures, a dedicated impact assessment is envisaged for each Commission recommendation.

Table 4: Overview of the possible actions launched by the European Commission

Action	Instrument	Timing (launch)	Costs	Benefits	Admin. burden	Contribution to objectives
Free-flowing towns and cities						
1. Stakeholder conference on urban freight (Option 6)	Event	2010	Low	Better understanding of urban freight issues; exchanges and dissemination of practice	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Improving knowledge and data collection
2. Recommendation on urban freight (Option 6)	Recommendation	2012	Low	Greater efficiency, fewer tonne-km, less congestion, less pollution, increased competition	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport
Greener towns and cities						
3. Study on access rules for green zones (Options 5 and 13)	Study	2009	Low	Better understanding among authorities, travellers and businesses, better policy-making, time and cost gains for visitors and businesses	EC: low Local, regional and national authorities: low	• Free-flowing towns and cities • Greener towns and cities
4 .Exchange of information on urban pricing schemes (Option 5)	Expert network	2009	Low	Dissemination of knowledge on urban pricing, better understanding of context variables	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Safe and secure urban transport • Improving knowledge and data collection
5. Study on urban aspects of internalisation of external costs (Option 7)	Study	2011	Low	Better understanding of specific urban context of internalisation, in particular impact on behaviour and the environment and social and economic impact	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Safe and secure urban transport
6. Internet guide on clean and energy-efficient vehicles (Options 10 and 11)	Internet guide	2009	Very low	Facilitate market uptake leading to increased use of clean vehicles resulting in less pollution and higher energy efficiency	EC: very low	• Greener towns and cities
7. Recommendation on energy-efficient driving as part of driving education	Recommendation	2012	Low	Lower fuel consumption and emissions	EC: very low	• Greener towns and cities

Action	Instrument	Timing (launch)	Costs	Benefits	Admin. burden	Contribution to objectives
(Option 29)					Member States: very low	
Smarter urban transport						
8. Recommendation on ITS for urban mobility (Option 14)	Recommendation	2012	Low	Easier travel and more efficient services leading to less congestion, less pollution and increased safety.	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Accessible urban transport • Safe and secure urban transport
9. Web portal to improve access to public transport information (Option 15)	Web portal	2009	Very low	Better informed travellers will lead to higher use of public transport, which will result in less congestion, less pollution and increased safety.	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Accessible urban transport
Accessible urban transport						
10. Recommendation on sustainable urban mobility plans (Options 19 and 20)	Recommendation	2012	Low	Facilitate integrated planning and policy-making, including target-setting, monitoring and evaluation and better stakeholder involvement	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Accessible urban transport • Safe and secure urban transport
11. Dialogue on passenger rights in urban public transport (voluntary) (Options 21 and 22)	Stakeholder network	2010	Low/ very low	Better-quality public transport will lead to increased use of public transport and stronger consumer protection	EC: low Stakeholders: very low	• Free-flowing towns and cities • Greener towns and cities • Accessible urban transport • Safe and secure urban transport
Safe and secure urban transport						
12. Recommendation on safe walking and safe cycling (Option 24)	Recommendation	2011	Low	Fewer accidents, fewer fatalities and increase in walking/cycling	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Safe and secure urban transport

Action	Instrument	Timing (launch)	Costs	Benefits	Admin. burden	Contribution to objectives
Cross-cutting issues						
13. Internet guide on legislation, funding and best practice (Options 19, 20, 27 and 30)	Internet guide	2009	Low	Providing better information leads to better targeted use of funding and better informed decisions	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Accessible urban transport • Safe and secure urban transport • Improving knowledge and data collection
14. Study on harmonised data collection (Option 26)	Study	2010	Low	Better informed decisions and better monitoring leading to better and faster policy responses	EC: low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Accessible urban transport • Safe and secure urban transport • Improving knowledge and data collection
15. Annual forum on urban mobility (Option 27)	Event	2010	Low	Better dissemination of urban mobility practice	EC: very low; Local, regional and national authorities: very low Stakeholders: very low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Accessible urban transport • Safe and secure urban transport • Improving knowledge and data collection
16. Targeted RTD activities on urban mobility (Options 27 and 28)	Funding	2011	Depending on implementation	Facilitating policy implementation, better understanding of integrated planning, demographic changes, trends, vehicle technologies, Galileo applications, behaviour, innovative public transport, etc.	EC: low; Local authorities: low Stakeholders: very low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Accessible urban transport • Safe and secure urban transport • Improving knowledge and data collection
17. Campaign on sustainable mobility behaviour (Option 29)	Campaign	2010	Low	Less congestion, lower fuel consumption and emissions, increased safety	EC: very low Member States: very low	• Free-flowing towns and cities • Greener towns and cities • Safe and secure urban transport • Improving knowledge and data collection
18. Call for proposals for action on sustainable urban mobility	Funding	2009	Low	Increased safety, integration of freight into urban mobility policy, improved understanding of access control, less fragmented payment systems and better knowledge of demand-responsive transport	EC: low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Accessible urban transport

Action	Instrument	Timing (launch)	Costs	Benefits	Admin. burden	Contribution to objectives
(Option 30)				systems		• Safe and secure urban transport • Focusing EU financial instruments
19. Study on dedicated support for urban mobility (Option 30)	Study	2010	Low	Facilitating policy implementation, promoting and highlighting advanced practices and highlighting priorities	Depending on implement-ation	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Accessible urban transport • Safe and secure urban transport • Focusing EU financial instruments
20. Recommendation on sustainable urban mobility and regional policy (Option 30)	Recommendation	2011	Low	Better information on policy priorities and access to funding, highlighting role of urban mobility in economic and social cohesion	EC: very low	• Free-flowing towns and cities • Greener towns and cities • Smarter urban transport • Accessible urban transport • Safe and secure urban transport • Focusing EU financial instruments

7. MONITORING AND EVALUATION

To monitor implementation of the Action Plan and its individual actions, the Commission will look at trends in urban mobility and transport with a focus on the performance of policies, tools, markets, regulatory frameworks and administrative capacity. It will do so in close consultation with stakeholders. This chapter outlines preliminary thoughts on monitoring the development of urban mobility and transport in the EU and the performance of EU action.

The following possible indicators, which will need to be further specified, are suitable for measuring progress and are likely to be available.

Objective	**Possible indicator(s)**
Sustainable urban mobility	Modal split for passenger transport
	Modal split for freight transport
Improve coherence of solutions	Number of cities with coherent access rules
Support for policy-making	Availability of coherent data
	Number of cities with sustainable urban transport plans

Deciding policy and launching action at local, regional, national and EU levels requires good data and information covering a wider spectrum than the indicators set out above. The data and information needed to provide an accurate, complete and consistent picture of urban mobility in the EU are not available, however. One prerequisite for measuring progress in the field of urban mobility and transport is therefore establishment of a coherent and comparable monitoring system, as proposed in option 26.

With the Action Plan, the Commission intends to facilitate the work of policy-makers at local, regional and national levels. The overall success of the Action Plan will depend largely on the take-up by local, regional and national authorities, the private sector and citizens. Efficient implementation by the Commission will also depend on the resources made available by the Commission[38].

The Commission will monitor implementation of the Action Plan and will continue to consult stakeholders and promote information exchange, for example via the Joint Expert Group on Transport and Environment. In 2012 the Commission will conduct a review of the developments and of the impact of this Action Plan and will assess the need for further action.

[38] Estimates suggest that implementation of the Action Plan will require the allocation of 3 extra AD officials, and 2 AST officials.

ANNEXES

ANNEX I: SUMMARY OF THE RESULTS OF THE CONSULTATION

The Commission received a total of 431 responses to the Green Paper consultation. The main conclusion from analysis of the responses is that there is a broad consensus among stakeholders that there is added value in action at EU level. Stakeholders want to see the Commission help, facilitate and support city, regional and national governments in their efforts to achieve the goals of sustainable urban mobility.

While the potentially positive role of the Commission is widely acknowledged by the respondents, there is some concern that Commission initiatives could result in additional bureaucracy, with the risk of limiting the creativity and flexibility needed for dealing with urban mobility issues at local level. The respondents were divided about the kind of initiatives (legislative, voluntary, etc.) that the Commission should take.

To a large extent, the respondents to the Green Paper consultation made suggestions such as facilitating exchanges of best practice, financing and supporting research and improving the harmonisation, collection and availability of data and information. Other suggestions include harmonising policy processes, developing guidelines and recommendations, harmonising technical standards and improving the availability of finances for innovative projects that contribute to sustainable urban mobility goals.

As part of the Green Paper consultation and in preparation for the Action Plan, the Commission organised a conference under the banner "Towards a new culture for urban mobility" on 31 January 2008. Around 300 stakeholders participated in the event. In addition, eight technical stakeholder workshops were organised on 5, 6, 11 and 12 March 2008 in Brussels. Five of them dealt with each of the five main challenges identified in the Green Paper, two covered the cross-cutting topics of financing and a new culture for urban mobility and the final, concluding, workshop, brought together the discussions at the previous seven workshops. A total of 172 persons participated.

The vast majority of the comments made during the conference and workshops clearly suggested that the EU can offer added value in the field of urban mobility and has a role to play. Potential roles for the EU could include harmonisation and standardisation of various technologies, practices and policies relevant to urban mobility, possibly also by means of legislation.

It was also concluded that a number of the initiatives that the Commission was already taking should be continued and, if necessary, intensified. The Commission should also consider facilitating and initiating new actions, for example on collecting data, assessing the impact of transport, raising awareness and social marketing. Finally, the Commission was requested to conduct a comparison of mobility problems in European cities and to conduct an assessment of policy alternatives.

During the debates, it was pointed out that some areas had received insufficient attention in the Green Paper. These include, for instance, urban freight distribution and the link between strategic urban planning and transport planning. It was also suggested that the EU could particularly help the new Member States to find ways to balance long-term thinking with short-term investment pressure and that the EU could help facilitate transfers of know-how.

The results of the Green Paper consultation are summarised in Table 4. Scores range from 1 (low: most stakeholders do not support the idea) to 3 (medium: stakeholders are divided) and

then up to 5 (high: most stakeholders support the action). Relevant comments have been added. "n.a." means not applicable.

Table 4: Stakeholder support for policy options (long list) with comments

Option		Score
1	*Require cities to set modal split targets*	*1*
	Support for such a requirement is very limited and was suggested only a few times.	
2	*Ban private car use in city centres*	*1*
	Banning use of private cars in city centres is not supported by stakeholders; this is considered a decision for local authorities.	
3	*Ban on-street parking in city centres*	*1*
	Prohibiting on-street parking in city centres is not supported by stakeholders; this is considered a decision for local authorities.	
4	*Recognise efforts of cities to improve sustainable urban mobility*	*4*
	The feasibility of this policy option is questioned (because of the comparability of cities and availability of reliable data), but the general idea is supported.	
5	*Provide information on access limitations for road users in cities*	*4*
	There is strong opposition to mandatory road user charges. However, providing information, harmonisation, dissemination of best practice, etc. could help cities that have decided (or are considering whether) to take such measures.	
6	*Promote more efficient urban freight distribution and logistics*	*5*
	Most stakeholders support such measures. They underline the economic importance of urban freight, but mention the role of the private sector.	
7	*Internalise the external costs of urban transport*	*3*
	There is support for standards, harmonisation and internalisation in the field of urban charging in general, but no support for mandatory measures.	
8	*Require cities to set targets for CO_2 emissions from urban transport*	*1*
	There is no support for such requirements.	
9	*Require zero CO_2 propulsion for urban public transport*	*1*
	There is little support for this policy option.	
10	*Promote "green" procurement by public authorities*	*4*
	Facilitation by the Commission of green procurement is supported, although internalisation of external costs is considered more effective.	
11	*Promote take-up of clean and energy-efficient vehicle technology and alternative fuels*	*4*
	There is support for this option on condition that modes and technologies are treated equally. Intensified use of existing instruments is preferred.	
12	*Require designation of "green" zones in sensitive areas*	*1*
	Mandatory green zones are not supported by stakeholders; the decision to implement such zones should be left to the local authorities.	

13	*Harmonise rules for environmental zones*	*4*
	Stakeholders favour a certain degree of harmonisation of such zones, as long as local authorities can decide on introduction. Using Euro standards is seen as a means of harmonisation.	
14	*Improve the interoperability of ticketing and payment systems for public transport*	*5*
	There is support for this policy option. However, local flexibility remains a condition.	
15	*Improve harmonisation and provision of travel information*	*5*
	Not many stakeholders oppose this, as long as access, user-friendliness, accuracy and design are taken into account.	
16	*Require transport impact assessments as a precondition for planning permission*	*2*
	There is little support for conditionality, but promotion and research would be favoured.	
17	*Require establishment of urban mobility authorities*	*2*
	This requirement meets opposition, but there is support for voluntary establishment of such authorities. The Commission should support best practice, research, etc.	
18	*Require adoption of SUTPs as a condition for EU funding*	*1*
	Conditionality is not supported widely; only a few stakeholders propose criteria for sustainability (which are less specific).	
19	*Promote integrated planning for urban mobility and transport*	*5*
	Assistance in the form of dissemination of best practice, etc. by the Commission to cities with the aim of integrated planning is supported.	
20	*Improve coordination between urban mobility and land-use planning*	*3*
	The need to improve coordination is recognised, but support would depend on the instrument chosen. Binding measures receive less support.	
21	*Strengthen the rights and obligations of users of public transport*	*1*
	The Commission is advised to take no new steps in this direction, given the ongoing initiatives. In general, support appears to be lacking for what is feared to be a rigid, ineffective policy option.	
22	*Improve accessibility of public transport*	*4*
	Stakeholders support this, but some stress that this should not come at the expense of private transport. Interfaces with other modes should be included in this option.	
23	*Require operators to accept bicycles in urban public transport*	*2*
	Support from only a small and specific section of stakeholders; no comments from the vast majority. However, there is strong support for strengthening the co-modality chain.	
24	*Promote safe walking and safe cycling*	*5*
	Promotion of walking and cycling is supported, e.g. by disseminating best practice and promoting intermodal interfaces.	
25	*Raise the minimum age for driving licences to 25*	*n.a*

	This policy option was not proposed explicitly by stakeholders, nor did stakeholders raise the issue.	
26	*Improve data harmonisation, collection, validation and reporting*	*5*
	The need for better data is fully recognised, but stakeholders demand as little bureaucracy as possible.	
27	*Improve dissemination of knowledge and best practice*	5
	There is consensus amongst stakeholders that a great deal of information is available, but that it should be made more accessible.	
28	*Intensify research, development and demonstration activities*	4
	Research is called for in certain fields, but pilot projects should also receive support. Strong support for (continuation of existing) demonstration networks.	
29	*Promote awareness and behavioural change, including eco-driving*	4
	There is general support for awareness-raising activities. Promotion of eco-driving is seen as valuable, as long as the benefits to users are stressed.	
30	*Promote investment in integrated urban transport, including public transport*	4
	There is support for investment in integrated solutions. Stakeholders ask for "equal treatment" of modes, but support for public transport is recognised as important. Financial support could help cities to select and implement the best solution.	
31	*Require implementation of a "value capture tax"*	1
	Very little support for taxation-related measures.	

ANNEX II: OVERVIEW OF EXISTING EU INITIATIVES AND LEGISLATION

TRANSPORT	**Relevance**	**Status**
Public service obligations		
Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road and repealing Council Regulations (EEC) Nos 1191/69 and 1107/70	**Direct**	**Legislation implemented**
State aid		
Community guidelines on State aid for railway undertakings (OJ C 184, 22.7.2008)	***Direct***	***Adopted***
Commission Regulation (EC) No 800/2008 of 6 August 2008 declaring certain categories of aid compatible with the common market in application of Articles 87 and 88 of the Treaty (General Block Exemption Regulation) (OJ L 214, 9.8.2008)	**Direct**	**Legislation implemented**
Community guidelines on State aid for environmental protection (OJ C 82, 1.4.2008)	***Indirect***	***Adopted***
Important State aid decisions on public service obligations		
C 58/06 (ex NN 98/2005) of 20 December 2006, Germany – State aid for public transport Stadt Langenfeld/Verkehrsverbund Rhein Ruhr (OJ C 74, 31.3.2007)	**Indirect**	**Implemented**
C 16/07 (ex NN 55/2006) of 30 May 2007, Austria – Official support for Postbus in the Lienz district (OJ C 162, 14.7.2007)	**Indirect**	**Implemented**
C 31/2007 (ex NN 17/2007) of 18 July 2007, Ireland – State aid to Córas Iompair Éireann Bus Companies (OJ C 217, 15.9.2007)	**Indirect**	**Implemented**
C 47/07 (ex NN 22/2005) of 23 October 2007, Germany – Public service contract between Deutsche Bahn Regio AG and the Länder of Berlin and Brandenburg (OJ C 35, 8.2.2008)	**Indirect**	**Implemented**
C 54/07 (ex NN 55/2007) of 28 November 2007, Germany – Hülsmann GmbH (Rail) v. Emsländische Eisenbahn GmbH (not yet published in the OJ)	**Indirect**	**Implemented**
C 3/08 (ex NN 102/05) of 26 November 2008, Czech Republic - public service compensations for Southern Moravia Bus Companies (OJ C 7032, 16.4.2009)	**Indirect**	**Implemented**

Important State aid decisions on other improvements to public transport		
N63/2005 – Programme for energy economies and use of alternative fuels in the transport sector, Czech Republic (OJ C 83, 6.4.2006)	**Indirect**	**Implemented**
N604/2005 – Satzung zur Unterstützung eigenwirtschaftlicher Verkehrsleistungen im Landkreis Wittenberg, Germany (OJ C 209, 30.8.2006)	**Indirect**	**Implemented**
N556/2005 – Subsidieverordening Innovatie openbaar vervoer van provincie Gelderland, Netherlands (OJ C 207, 30.8.2006)	**Indirect**	**Implemented**
Passenger rights		
Regulation (EC) No 1371/2007 of the European Parliament and of the Council of 23 October 2007 on rail passengers' rights and obligations (OJ L 315, 3.12.2007)	**Direct**	**Legislation implemented**
Proposal for a Regulation of the European Parliament and of the Council on the liability of carriers of passengers by sea and inland waterways in the event of accidents (COM(2005) 592)	*Indirect*	*Legislation proposed, but not yet adopted*
Proposal for a Regulation of the European Parliament and of the Council concerning the rights of passengers when travelling by sea and inland waterway and amending Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws (COM(2008) 0816)	*Direct*	*Legislation proposed, but not yet adopted*
Proposal for a Regulation of the European Parliament and of the Council on the rights of passengers in bus and coach transport and amending Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws (COM(2008)0817)	*Direct*	*Legislation proposed, but not yet adopted*
TEN-T		
Regulation (EC) No 807/2004 of the European Parliament and of the Council of 21 April 2004 amending Council Regulation (EC) No 2236/95 laying down general rules for the granting of Community financial aid in the field of trans-European networks (OJ L 143, 30.4.2004)	**Indirect**	**Legislation implemented**
Charging		
Directive 1999/62/EC of the European Parliament and of the Council of 17 June 1999 on the charging of heavy goods vehicles for the use of certain infrastructures (OJ L 187, 20.7.1999, p. 42), as last amended by Directive 2006/38/EC (OJ L 157, 9.6.2006)	**Indirect**	**Legislation implemented**
Proposal for a Directive of the European Parliament and of the Council	*Indirect*	*Legislation*

amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures (COM(2008) 436)		*proposed, but not yet adopted*
Directive 2001/14/EC of the European Parliament and of the Council of 26 February 2001 on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification (OJ L 75, 15.3.2001)	**Indirect**	**Legislation implemented**
Strategy for the internalisation of external costs (COM(2008) 435)	***Indirect***	***Adopted***
Public procurement		
Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors (OJ L 134, 30.4.2004)	**Direct**	**Legislation implemented**
Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts (OJ L 134, 30.4.2004)	**Direct**	**Legislation implemented**
Commission Decision 2008/963/EC of 9 December 2008 amending the Annexes to Directives 2004/17/EC and 2004/18/EC of the European Parliament and of the Council on public procurement procedures, as regards their lists of contracting entities and contracting authorities (OJ L 349, 24.12.2008)	**Direct**	**Legislation implemented**
Directive 2009/…/EC of the European Parliament and the Council on the promotion of clean and energy efficient road transport vehicles (OJ L…..)	***Direct***	***Legislation adopted, but not yet implemented***
Competition		
Council Regulation (EC) No 169/2009 of 26 February 2009 applying rules of competition to transport by rail, road and inland waterway (JO L 61 du 5.3.2009)	**Indirect**	**Legislation implemented**
Transport of dangerous goods		
Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods (JO L 260 du 30.9.2008)	***Indirect***	***Legislation adopted, but not yet transposed***
ENERGY		
Fuels		

European Parliament and Council Directive 94/63/EC of 20 December 1994 on the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations (OJ L 365, 31.12.1994)	**Indirect**	**Legislation implemented**
Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels and amending Directive 93/12/EEC (OJ L 121, 11.5.1999, p. 13), as amended by Regulation (EC) No 1882/2003 of the European Parliament and of the Council of 29 September 2003 (OJ L 284, 31.10.2003, p. 1) and Directive 2005/33/EC of the European Parliament and of the Council of 6 July 2005 (OJ L 191, 22.7.2005)	**Indirect**	**Legislation implemented**
Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC (OJ L 350, 28.12.1998), as amended by Directive 2003/17/EC	**Indirect**	**Legislation implemented**
Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels and other renewable fuels for transport (OJ L 123, 17.5.2003, p. 42)	**Indirect**	**Legislation implemented**
Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (OJ L 283, 31.10.2003), as amended	**Indirect**	**Legislation implemented**
Directive 2009/…/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (OJ L…)	***Direct***	***Legislation adopted, but not yet implemented***
Energy efficiency		
Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (OJ L 40, 11.2.1989)	**Indirect**	**Legislation implemented**
Council Directive 93/76/EEC of 13 September 1993 to limit carbon dioxide emissions by improving energy efficiency (SAVE) (OJ L 237, 22.9.1993)	**Indirect**	**Legislation implemented**
Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings (OJ L 1, 4.1.2003)	**Indirect**	**Legislation implemented**

Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council (OJ L 191, 22.7.2005)	**Indirect**	**Legislation implemented**
Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC (OJ L 114, 27.4.2006)	**Indirect**	**Legislation implemented**
ENVIRONMENT		
Air quality		
Council Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management (OJ L 296, 21.11.1996)	**Direct**	**Legislation implemented**
Council Directive 1999/30/EC of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air (OJ L 163, 29.6.1999)	**Direct**	**Legislation implemented**
Directive 2000/69/EC of the European Parliament and of the Council of 16 November 2000 relating to limit values for benzene and carbon monoxide in ambient air (OJ L 313, 13.12.2000)	**Direct**	**Legislation implemented**
Directive 2004/107/EC of the European Parliament and of the Council of 15 December 2004 relating to arsenic, cadmium, nickel and polycyclic aromatic hydrocarbons in ambient air (OJ L 23, 26.1.2005)	**Direct**	**Legislation implemented**
Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (*OJ L 152, 11.6.2008)*	***Direct***	***Legislation adopted, but not yet transposed***
Noise		
Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise – Declaration by the Commission in the Conciliation Committee on the Directive relating to the assessment and management of environmental noise (OJ L 189, 18.7.2002)	**Direct**	**Legislation implemented**
Directive 2002/30/EC of the European Parliament and of the Council of 26 March 2002 on the establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at Community airports (OJ L 85, 28.3.2002)	**Indirect**	**Legislation implemented**
Water		

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000)	**Indirect**	**Legislation implemented**
Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council (OJ L 348, 24.12.2008)	***Indirect***	***Legislation adopted, but not yet transposed***
Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks (OJ L 288, 6.11.2007)	***Indirect***	***Legislation adopted, but not yet transposed***
Natural habitats		
Council Directive 92/43/EC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992)	**Indirect**	**Legislation implemented**
Environmental assessment		
Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (OJ L 175, 5.7.1985), as amended	**Indirect**	**Legislation implemented**
Council Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment (JO L 73 du 14.3.1997)	**Indirect**	**Legislation implemented**
Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (OJ L 197, 21.7.2001)	**Indirect**	**Legislation implemented**
Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC (OJ L 156, 25.6.2003)	**Indirect**	**Legislation implemented**
VEHICLE STANDARDS		
Regulation No 100 of the Economic Commission for Europe of the United Nations (UNECE) — Uniform provisions concerning the approval of battery electric vehicles with regard to specific requirements for the construction, functional safety and hydrogen emission (revision 2) (OJ L 45, 14.2.2009)	**Direct**	**Legislation implemented**

Regulation (EC) No 715/2007 of the European Parliament and of the Council of 20 June 2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information (OJ L 171, 29.6.2007) [This Regulation will apply from 3 January 2009, with the exception of Articles 10(1) and 12 which apply with effect from 2 July 2007]	**Direct**	**Legislation implemented**
Regulation (EC) No 692/2008 of 18 July 2008 implementing and amending Regulation (EC) No 715/2007 of the European Parliament and of the Council on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information (OJ L 199, 28.7.2008)	**Direct**	**Legislation implemented**
Regulation (EC) No 79/2009 of the European Parliament and of the Council of 14 January 2009 on type-approval of hydrogen-powered motor vehicles, and amending Directive 2007/46/EC (OJ L 35, 4.2.2009)	**Direct**	**Legislation implemented**
Proposal for a Regulation of the European Parliament and of the Council on type-approval of motor vehicles and engines with respect to emissions from heavy duty vehicles (Euro VI) and on access to vehicle repair and maintenance information (SEC(2007)1718, SEC(2007)1720 and COM(2007) 851 final)	*Direct*	*Legislation proposed, but not yet adopted*
Regulation (EC) N°…/2009 of the European Parliament and of the Council setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO2 emissions from light-duty vehicles (OJ L…)	***Direct***	***Legislation adopted, not yet implemented***
Council Directive 92/6/EEC of 10 February 1992 on the installation and use of speed limitation devices for certain categories of motor vehicles in the Community (OJ L 57, 2.3.1992)	**Direct**	**Legislation implemented**
Proposal for a Council Directive on passenger car related taxes (COM(2005) 261 final)	*Direct*	*Legislation proposed, but not yet adopted*
Directive 2001/85/EC relating to special provision for vehicles used for the carriage of passengers comprising more than eight seats (OJ L 42, 13.2.2002)	**Direct**	**Legislation implemented**
Directive 2001/16/EC on the interoperability of the trans-European conventional rail system (OJ L 110, 20.4.2001)	**Indirect**	**Legislation implemented**
Directive 2002/7/EC of the European Parliament and of the Council of 18 February 2002 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (*OJ L 67,*	**Direct**	**Legislation implemented**

9.3.2002)		
SAFETY		
Directive 2004/49/EC of the European Parliament and the Council of 29 April 2004 on safety on the Community's railways and amending Council Directive 95/18/EC on the licensing of railway undertakings and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification (Railway Safety Directive) (OJ L 164, 30.4.2004); Corrigendum to Directive 2004/49/EC (OJ L 204, 4.8.2007)	**Direct**	**Legislation implemented**
Directive 2006/126/EC of the European Parliament and of the Council of 20 December 2006 on driving licences (Recast) (OJ L 403, 30.12.2006)	**Indirect**	**Legislation implemented**
Directive 2008/96/EC of the of the European Parliament and of the Council of 19 November 2008 on road infrastructure safety management (OJ L 319, 29.11.2008)	**Direct**	***Legislation adopted, but not yet transposed***
INFORMATION TECHNOLOGY		
Directive 2004/52/EC of the European Parliament and of the Council of 29 April 2004 on the interoperability of electronic road toll systems in the Community (OJ L 166, 30.4.2004)	**Direct**	**Legislation implemented**
Directive 2000/46/EC of the European Parliament and of the Council of 18 September 2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions (OJ L 275, 27.10.2000)	**Indirect**	**Legislation implemented**
Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC (OJ L 319, 05/12/2007)	**Indirect**	***Legislation adopted, but not yet transposed***
Proposal for a Directive of the European Parliament and of the Council laying down the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other transport modes (COM/2008/0887)	*Direct*	*Legislation proposed, but not yet adopted*
REGIONAL POLICY		
Regulation (EC) No 1080/2006 of the European Parliament and of the Council of 5 July 2006 on the European Regional Development Fund and repealing Regulation (EC) No 1783/1999 (OJ L 210, 31.7.2006)	**Direct**	**Legislation implemented**
Regulation (EC) No 1081/2006 of the European Parliament and of the	**Indirect**	**Legislation**

Council of 5 July 2006 on the European Social Fund and repealing Regulation (EC) No 1784/1999 (OJ L 210, 31.7.2006)		**implemented**
Regulation (EC) No 1082/2006 of the European Parliament and of the Council of 5 July 2006 on a European grouping of territorial cooperation (EGTC) (OJ L 210, 31.7.2006)	**Indirect**	**Legislation implemented**
Council Regulation (EC) No 1084/2006 of 11 July 2006 establishing a Cohesion Fund and repealing Regulation (EC) No 1164/94 (OJ L 210, 31.7.2006)	**Direct**	**Legislation implemented**
RTD AND INNOVATION		
Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013) (OJ L 412, 30.12.2006)	**Direct**	**Legislation implemented**
Decision No 1639/2006/EC of the European Parliament and of the Council of 24 October 2006 establishing a Competitiveness and Innovation Framework Programme (2007 to 2013) (OJ L 310, 9.11.2006)	**Direct**	**Legislation implemented**
Council Regulation (EC) No 521/2008 of 30 May 2008 setting up the Fuel Cells and Hydrogen Joint Undertaking (OJ L 153, 12.6.2008)	**Direct**	**Legislation implemented**

ANNEX III: THE BASELINE SCENARIO

This annex contains background information about the choice of the TREMOVE model, the assumptions made in the baseline scenario and the modelling results.

The choice of TREMOVE

Given that the aim of this assessment is to quantify the baseline scenario as much as possible, the TREMOVE model was selected, based on the following arguments:

– TREMOVE covers all EU cities and metropolitan areas and every mode of transport, including walking and cycling;

– TREMOVE draws a distinction between urban (metropolitan and other urban) and non-urban areas;

– TREMOVE calculates emissions;

– the TREMOVE forecasts are based on assumptions and data that are validated and accepted; and

– the results of modelling with TREMOVE are considered scientifically acceptable.

It would be difficult to use individual city models to model urban mobility at EU level. Organisationally, this would be a large, resource-intensive and time-consuming exercise. It would entail gaining access to the available scientifically validated models owned by individual cities which would be (1) mainly the large and capital cities and (2) mainly located in northern and western parts of the EU.

Furthermore, making the results of such an exercise comparable and integrating them would also be resource-intensive and time-consuming. An alternative would be to limit the modelling exercise to just a few European cities. This option was ruled out, however, because the results would just cover individual cities and not urban mobility for the whole EU.

The other option was to use another existing European model. Besides TREMOVE, three other European models were considered: SCENES, EXPEDITE and TRANSTOOLS. However, these three models were developed primarily to model long-distance transport in the EU and to support development of TEN-T policy. None of the models except TREMOVE is currently able to provide results for cities, urban areas or metropolitan regions.

SCENES, EXPEDITE and TRANSTOOLS are, however, capable, in varying degrees, of providing results that could be used as a proxy for urban mobility. However, each has serious shortcomings that prevented its use. For example, EXPEDITE provides forecasts of total passenger- and tonne-kilometres by distance bands (i.e. length of trip).

Trips shorter than, for example, 50 km could be taken as a proxy for urban mobility. The problem, however, is that average trip lengths differ from one city to another. This makes use of a single European average value for trip length problematic. The SCENES model does not include an emissions module. TRANSTOOLS draws no distinction between urban and non-urban areas.

Therefore, TREMOVE proved to be the most suitable model. TREMOVE has the advantage that it produces results specifically for the categories "metropolitan", "other cities" and "non-urban." Furthermore, TREMOVE recently produced a forecast of future transport demand and supply that takes into account future non-transport-related policy developments. This forecast of future demand has been accepted by the Commission as valid.

To be consistent with recent DG TREN studies, the possibility of using the IMPACT 1 baseline scenario was assessed. It was decided not to use the IMPACT 1 baseline scenario because this scenario uses TREMOVE Version 2.52. For this assessment Version 2.7, the most recent version of TREMOVE, was available. Apart from being more recent, this version made it possible to include cities from all 27 Member States in the baseline scenario.

The assumptions and policy measures in the baseline scenario

The TREMOVE baseline scenario is estimated from the results of the SCENES run for the ASSESS[39] study. This run is based on the assumptions made in the "partial implementation" scenario. This partial implementation scenario is described in the ASSESS study reports and is considered the most likely future scenario.

The TREMOVE baseline scenario includes the following assumptions on fuel efficiency[40]:

Mode	Period	Assumptions
Cars	Before 1990	Improvement in fuel efficiency of 1% per year.
	1990–1995	No significant improvements in fuel efficiency.
	1995–2002	Derived from the figures in the monitoring reports for the CO_2 voluntary agreement.
	2002–2009	Based on voluntary agreements between the European Commission and car manufacturers (the ACEA, JAMA and KAMA agreements). The main commitment made by the manufacturers was to improve fuel efficiency, by means of technological improvements, to an average of 140 g CO_2/km by 2008. The TREMOVE base case assumes that this 140 g/km target is reached in 2009. The related 2002-2009 fuel efficiency improvements by car type are derived from data and projections reported in the TNO CO_2CAR Task A study.
	2009–2012	TREMOVE assumes, on average, no further improvements in car fuel efficiency after 2009. The related 2009-2012 fuel efficiency changes by car type are also derived from data and projections reported in the TNO CO_2CAR Task A study.
	2012 onwards	The baseline does not include any further changes in the fuel efficiency of new cars beyond 2012.
Other road	1995–2009	For all other road vehicles, the 1995-2009 base case fuel efficiency increases were initially taken from the Auto Oil II programme, in which improvement estimates

39 Assessment of the contribution of the TEN and other transport policy measures to the mid-term review of the White Paper on the European Transport Policy for 2010.

40 TREMOVE Final Report, Chapter V (2007).

vehicles		were agreed with the manufacturers' representatives. After 2009, no further increases in fuel efficiency were assumed, as this assumption is needed for correct assessment of post-2009 EU policies on CO_2 emissions from road vehicles. For light commercial vehicles (N1) TREMOVE diverges from TNO estimates as it is calculated using the Copert method. For heavy duty trucks the 1995-2009 fuel efficiency improvement rates have been removed from the base case (from version 2.44 onwards). This change was suggested by the European Commission to bring the TREMOVE base case more into line with the PRIMES energy scenarios.

The partial implementation scenario includes policy measures that, in response to a judgment made in 2005[41], are likely to be implemented. This means either that the policy measures have been implemented already or that there are clear indications that they will be soon. The latter is the case when approved EU directives set deadlines for Member States to adapt their national legislation accordingly.

The central components of the partial implementation scenario are:

- Macroeconomic assumptions, population growth, transport demand and transport costs are updated, based on the latest predictions for 2010 and 2020. The fuel consumption and emission module is based on the Copert 4 method for calculating road transport emissions. The baseline takes account of the new technologies up to Euro 5 and 6. Assumptions have been made on fuel efficiency trends[42].

- All policy measures that have been followed up by a directive approved by the European institutions and that has to be implemented by the Member States before 2010 (or 2020) are included in the partial implementation scenario for 2010 (or 2020).

- Policy measures that have been followed up by a proposal that is awaiting approval by the European institutions are included in the partial implementation scenario for 2010 (or 2020) only if they have a realistic chance of being approved before 2010 (or 2020). This expectation is based on the number of times that a particular proposal has already been rejected and on the debate about the policy objective in the media.

- All TEN-T projects that, according to the estimates published in 2004, are scheduled to be completed before 2010 (or 2020) are included in the partial implementation scenario for 2010 (or 2020).

The following policy fields and measures relevant to urban mobility and covering the period after 2005 are included in the partial implementation scenario:

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41 Based on the preliminary results of the policy review up to 2005 described in Annexes I to IV to the ASSESS study.

42 In the period 2005-2010, fuel efficiency improvements for road vehicles lead to a limited downward trend in overall fuel consumption by transport. This is mainly the result of the voluntary agreement with the car industry to limit test-cycle CO_2 emissions from cars to 140 grammes per km by 2008/2009. The resulting decrease in specific fuel consumption counterbalances the increase in transport demand. After 2010, no further fuel efficiency improvements for new vehicles are modelled. Old vehicles, however, will increasingly be replaced by newer, fuel-efficient ones. This increasing share of more fuel-efficient vehicles, however, does not offset the increase in transport demand. The net result is an increase in greenhouse gas emissions after 2009.

- In the road sector, the measures on driver training, harmonisation of social legislation and introduction of the digital tachograph are implemented. However, the further harmonisation of driving times and weekend bans on lorries have not been implemented.

- The European rail freight sector has been liberalised and the quality of freight services has been improved. Liberalisation of passenger transport is starting and will be completed in the (partial implementation) scenario for 2020 only. Rail safety has been improved by technical harmonisation and interoperability of the high-speed rail network has been improved.

- The regulation on the award of public service contracts for public passenger transport has been adopted and more contracts for public passenger transport services will be granted by competition.

- There have been experiments to improve and promote combined transport. Integrated ticketing and baggage handling have been improved in the air and rail sectors.

- There is an EU action programme on road safety. However, road safety remains the responsibility of the Member States and efforts to harmonise legislation and penalties have not yet been effective.

- There is an EU policy on charging for the use of infrastructure but its impact is limited. The revision of the Eurovignette Directive includes only some possibilities of differentiating charges for some sensitive areas and for the most polluting vehicles. There is no harmonisation of fuel taxes.

- Clean urban transport is promoted by EU-funded research and demonstration activities. The impact on EU scale is limited.

This means that the possible impact of some specific recent Commission proposals, for example the Greening Transport Package or in the field of air quality, has not been fully taken into account.

The modelling results

The baseline scenario presented in this Annex describes how the urban mobility problems will evolve if there is no change in the EU approach. This does not mean that no policy changes can occur. It means that the direction of EU policies that have an impact on urban mobility remains unchanged. In other words, what would happen if no action were taken?

To start the description of the baseline scenario, indicators or parameters relevant to urban mobility and transport were selected, based on the specific objectives set out in Chapter 3. The indicators in the baseline scenario are listed below:

Indicators included in the baseline scenario

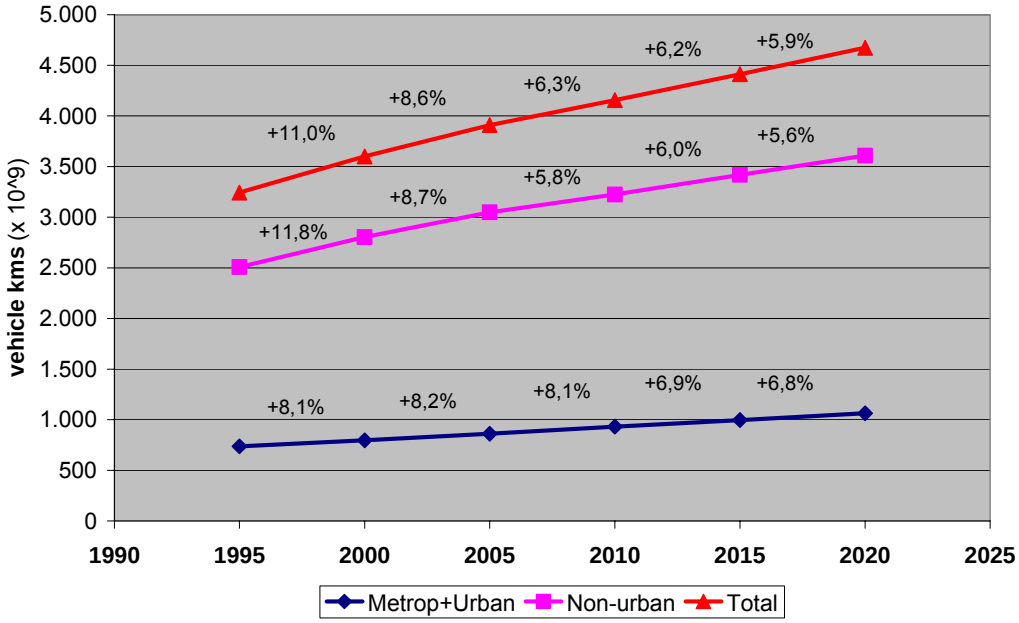
Topic	Indicator	Source
Mobility	Motorised vehicle-kilometres	TREMOVE
	Modal share	TREMOVE
Congestion	Passenger-hours lost	TREMOVE
	Tonne-hours lost	TREMOVE
Energy	Mtoe consumption	TREMOVE/DG TREN
Environment	CO_2 emissions	TREMOVE
	Methane emissions	TREMOVE
	CO emissions	TREMOVE
	NO_x emissions	TREMOVE
	N_2O emissions	TREMOVE
	PM emissions	TREMOVE
	Volatile organic compounds (VOC)	TREMOVE
	SO_2 emissions	TREMOVE
Economy	Impact on administrative costs (qualitative description)	Desk research
	Competition on internal market (qualitative description)	Desk research
Social	Impact on social inclusion (qualitative description)	Desk research
	Traffic fatalities	DG TREN
	Road accidents	DG TREN
	Impact of emissions on health	TREMOVE
	Impact of noise on health	TREMOVE

TREMOVE provides values for most of these indicators for 2012 and 2020. Total transport flows and emissions in each country in TREMOVE are allocated to three model regions: a metropolitan area, an aggregate of all other cities and an aggregate of all non-urban areas. The aggregate of all other cities is referred to as "other urban". Other sources (DG TREN and desk research) provide information for the indicators not included in TREMOVE.

Mobility

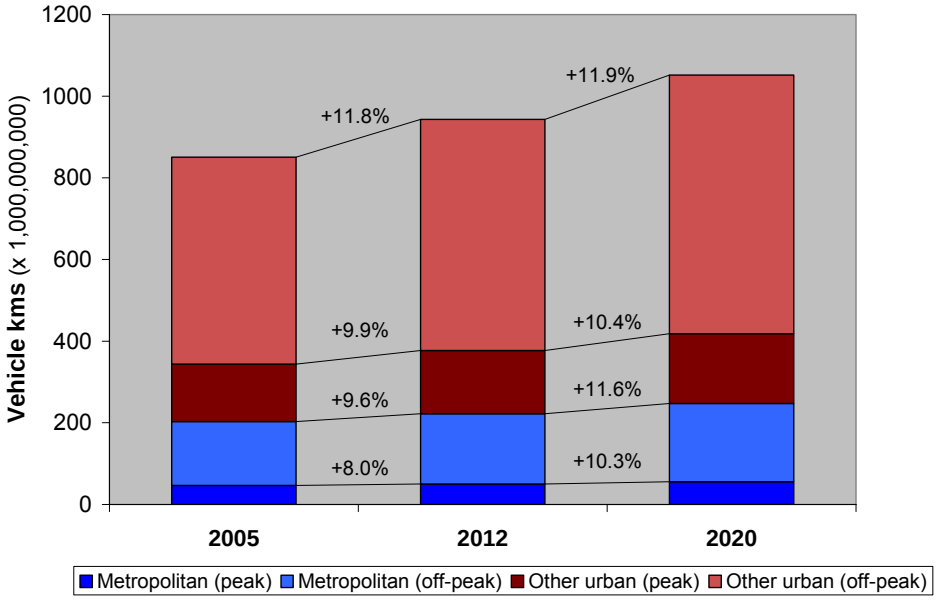
Mobility is a broad concept. One indicator for mobility is the total number of vehicle-kilometres (both passenger vehicles and freight vehicles). This parameter indicates that mobility in metropolitan, other urban and non-urban areas has been growing at a rate of nearly 20% over the last 10 years. TREMOVE estimates that this growth will continue, albeit at a declining rate. The expected growth between 2005 and 2020 in total vehicle-kilometres is 19.5% or, on average, about 6.5% every five years. The growth rate seems to be higher in metropolitan and other urban areas than in non-urban areas.

Vehicle-kilometres in EU-27 (1995-2025)



In metropolitan and other urban areas the expected growth is 22.4% between 2005 and 2020 (source: TREMOVE) or, on average, about 7.5% every five years. This can be seen in the next figure, which also demonstrates that vehicle-kilometres during both the peak and the off-peak period are increasing.

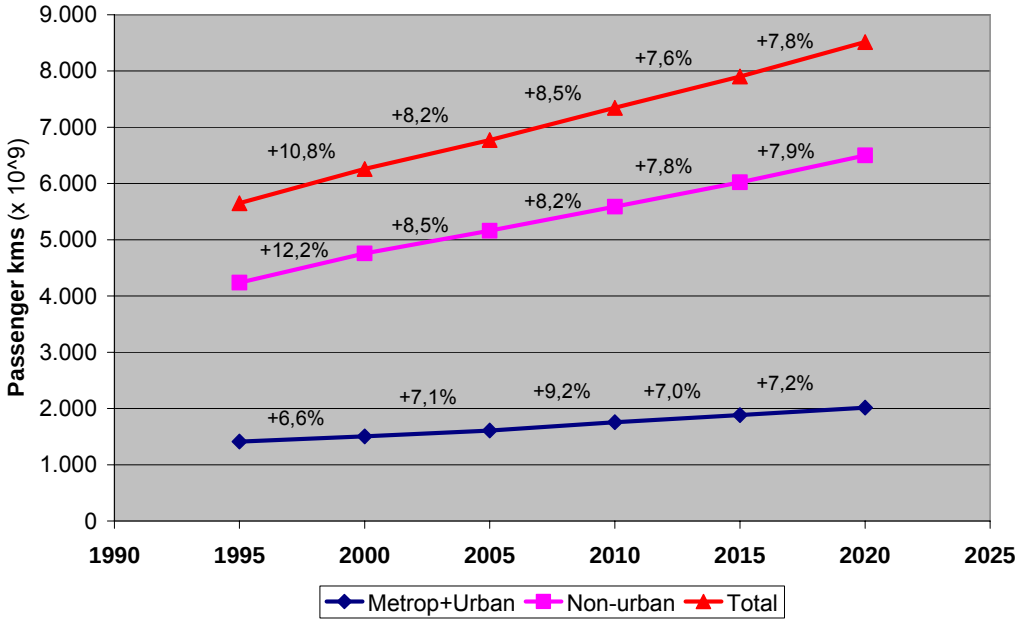
Peak and off-peak vehicle-kilometres in metropolitan and other urban areas in EU-27 (2005, 2012 and 2020)



In order to gain a better view of the differences between passengers and freight in metropolitan, other urban and non-urban areas, the next two figures show the trends in passenger-kilometres and freight tonne-kilometres. Like vehicle-kilometres, passenger- and freight tonne-kilometres are also based on totals from TREMOVE, which means including all trip distances, networks, periods, trip purposes and freight commodities.

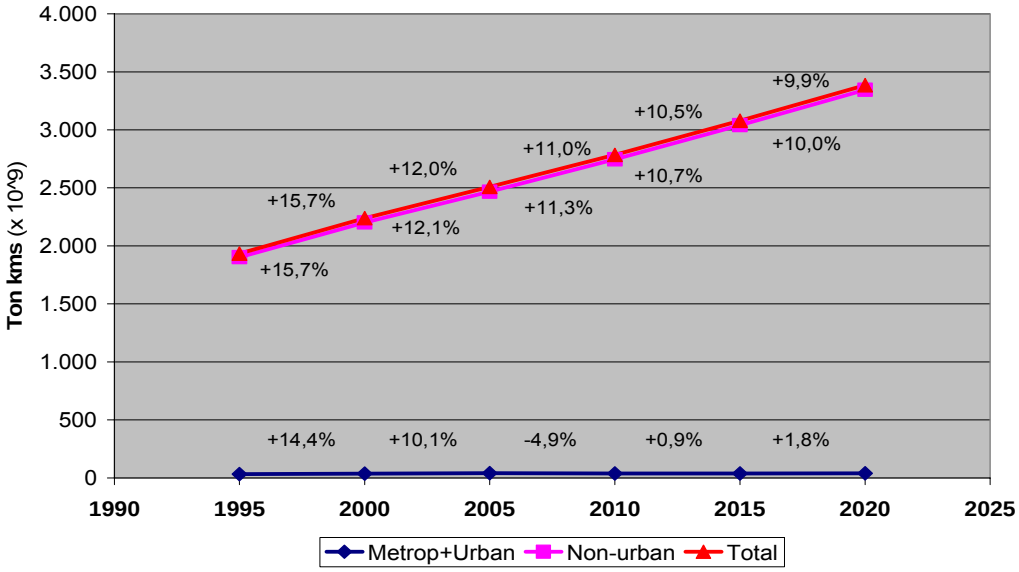
Both for metropolitan and other urban and for non-urban passenger-kilometres, the trend lines show steady growth of approximately 7% every five years. The share of metropolitan and other urban passenger-kilometres decreases slightly, from 25.0% in 1995 to 23.7% in 2020.

Passenger-kilometres in EU-27 (1995-2020)



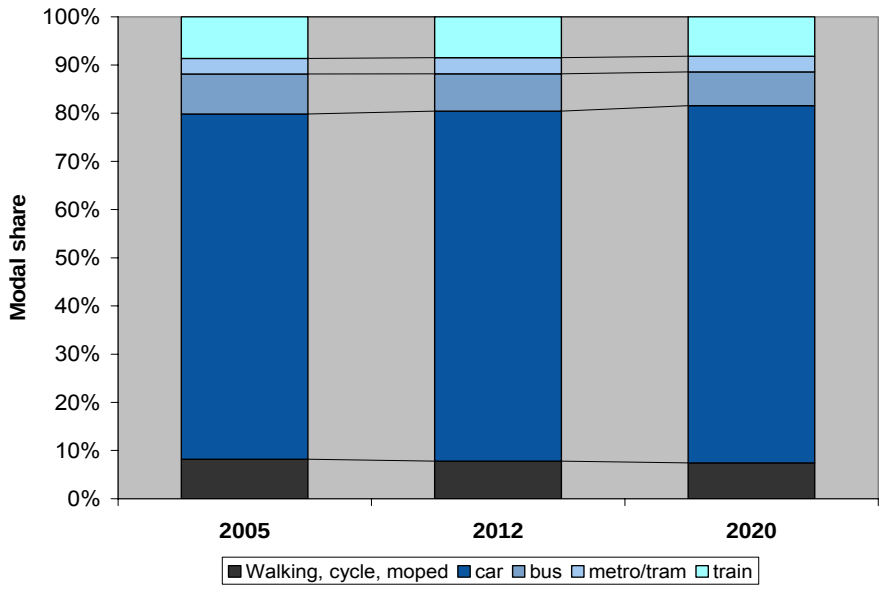
A clear difference can be seen between urban and non-urban freight tonne-kilometres. Freight tonne-kilometres in non-urban areas continue to grow, but at a decreasing rate, whereas freight tonne-kilometres in metropolitan and other urban areas show a stagnation after 2005. As a result, the share of metropolitan and other urban freight tonne-kilometres decreases from 1.7% in 1995 to 1.2% in 2020. Note that 98% to 99% of total freight tonne-kilometres are clocked up in non-urban areas.

Freight tonne-kilometres in EU-27 (1995-2020)



Little change can be seen in the modal shares for personal transport in metropolitan and other urban areas (peak, off-peak and added together). The share taken by the car is above 70% and still increasing. It can be assumed that this is mainly due to the increase in car ownership in new Member States.

Modal share in metropolitan and other urban areas in EU-27 (2005, 2012 and 2020)

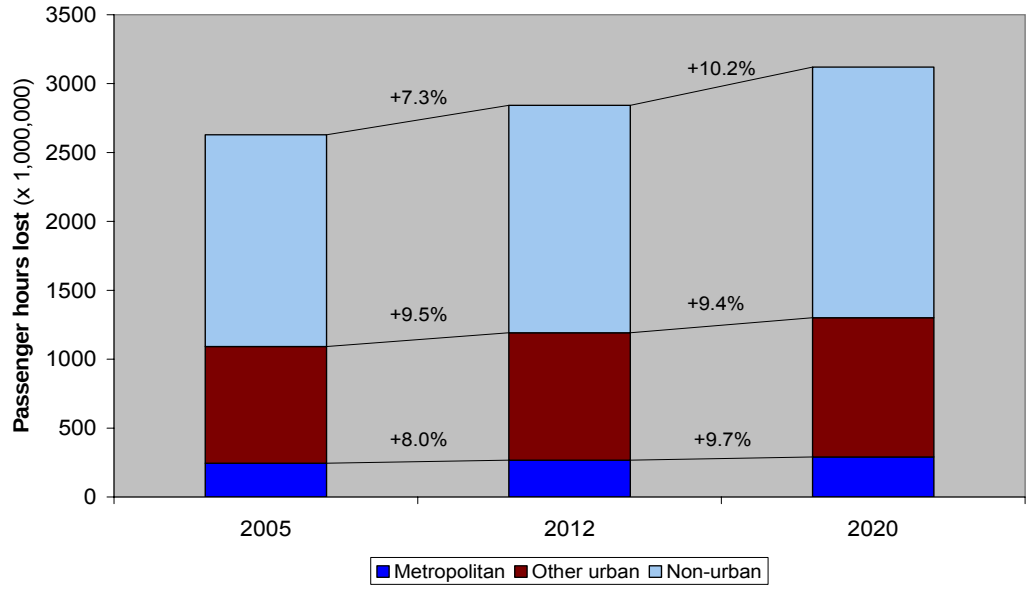


Congestion

As a result, congestion in metropolitan and other urban areas will increase. A good indicator of congestion is the number of passenger-hours lost. This number can be calculated as the difference between the total travel time of all travellers during the peak period and the total travel time for the same travellers in a (hypothetical) situation in which their speed is equal to the off-peak speed. It is assumed that there is no congestion during the off-peak hours.

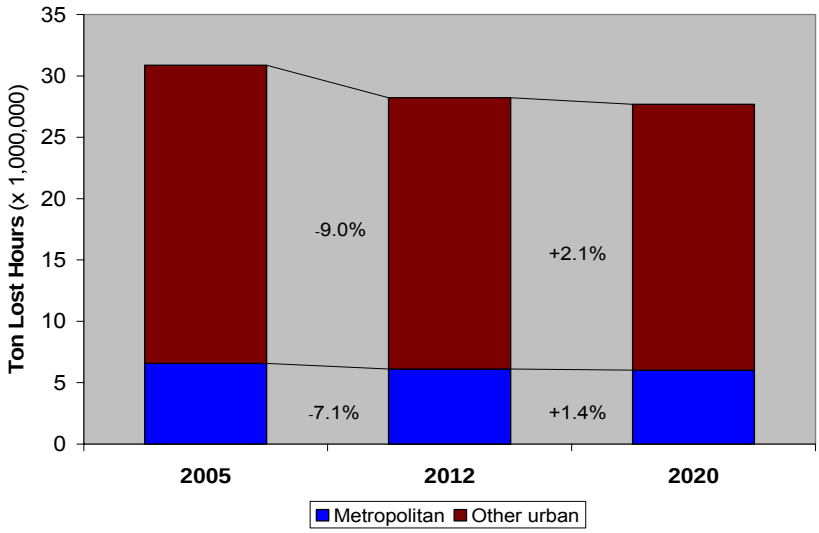
TREMOVE estimates that the passenger-hours lost between 2005 and 2020 will increase by nearly 20% in metropolitan, other urban and non-urban areas. Since the number of kilometres travelled outside urban areas is much higher than in urban areas, congestion in non-urban areas therefore "outscores" congestion in urban areas. This figure gives no indication of "hours lost per km", which is higher in urban areas.

Passenger hours lost in metropolitan, other urban and non-urban areas in EU-27 (2005, 2012 and 2020)



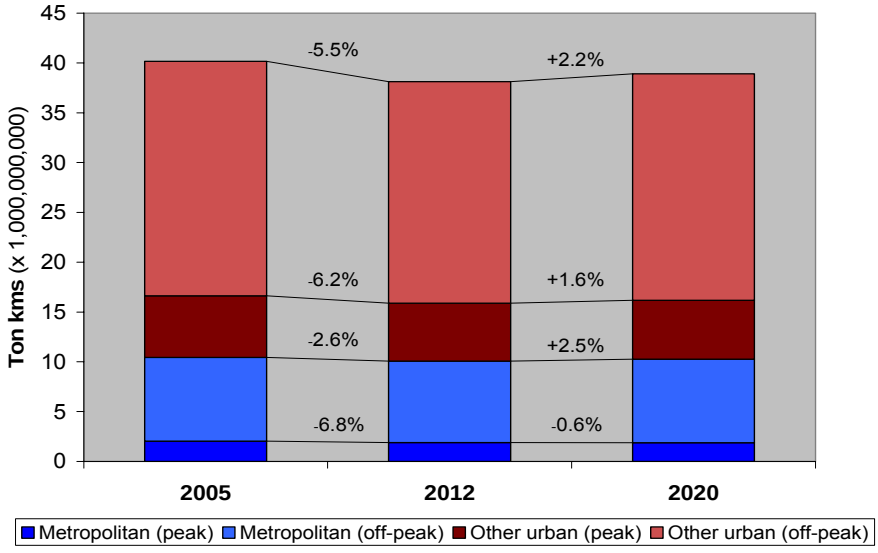
However, not only passengers suffer from congestion. Freight transport also suffers from it. For this sector, the number of freight tonne-hours lost is a suitable indicator of the level of congestion.

Freight tonne-hours lost in metropolitan and other urban areas in EU-27 (2005, 2012 and 2020)



This decrease in freight tonne-hours lost is an unexpected result. It is caused by the apparent decrease in tonne-kilometres in general, as can be seen from the next figure. This result is counter-intuitive, but no satisfactory explanation has been found.

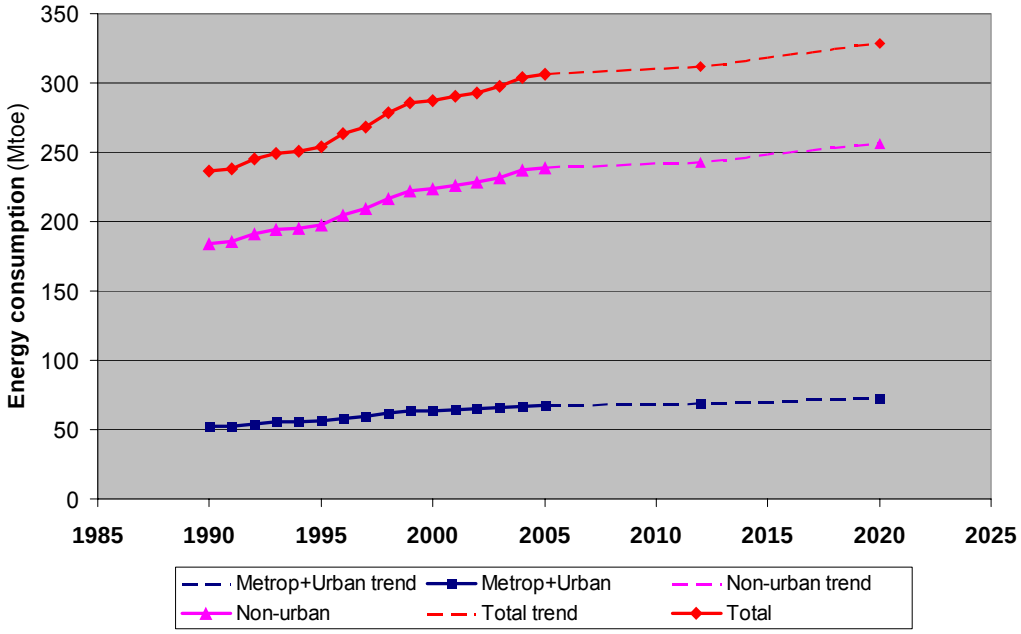
Tonne-kilometres in peak and off-peak hours in metropolitan and other urban areas in EU-27 (2005, 2012 and 2020)



Use of energy

In 2005, about 31% of total energy consumption in the EU was related to transport. Of these 362 Mtoe, TREMOVE estimates that about 84.7%, or 306 Mtoe, was used by road and rail transport. Of these 306 Mtoe, TREMOVE estimates that about 22.0% (or 67.5 Mtoe) was used by road and rail transport in metropolitan and other urban areas. The next figure shows the energy consumption of the transport sector in metropolitan, other urban and non-urban areas[43].

Energy consumption in Mtoe by transport in EU-27 (1990–2020)



There is a strong policy focus on increasing the fuel efficiency of transport. This is a result of increasing fuel costs, concerns about security of supply and awareness of the scarcity of fossil fuels and of the impact of CO_2 emissions on climate change. In the medium term (towards 2012) a fuel efficiency gain of about 9% is expected and towards the long term (2020) an additional gain of 6.5%[44]. As a result, energy consumption in metropolitan and other urban areas is set to increase from 67.5 Mtoe in 2005 to 68.7 Mtoe in 2012 and 72.5 Mtoe in 2020.

Environment

The CO_2 emissions are proportional to the amount of fuel used by the transport sector in metropolitan, other urban and non-urban areas. The increase in fuel efficiency discussed in the previous section is not enough to compensate fully for the increase in demand for fuel caused by the increase in vehicle-kilometres. As a result, the CO_2 emissions as a result of fuel use will rise by 1.7% between 2005 and 2012 and another 5.5% towards 2020. The main reason is that fuel efficiency will not increase as much between 2012 and 2020 as in the period between 2005 and 2012.

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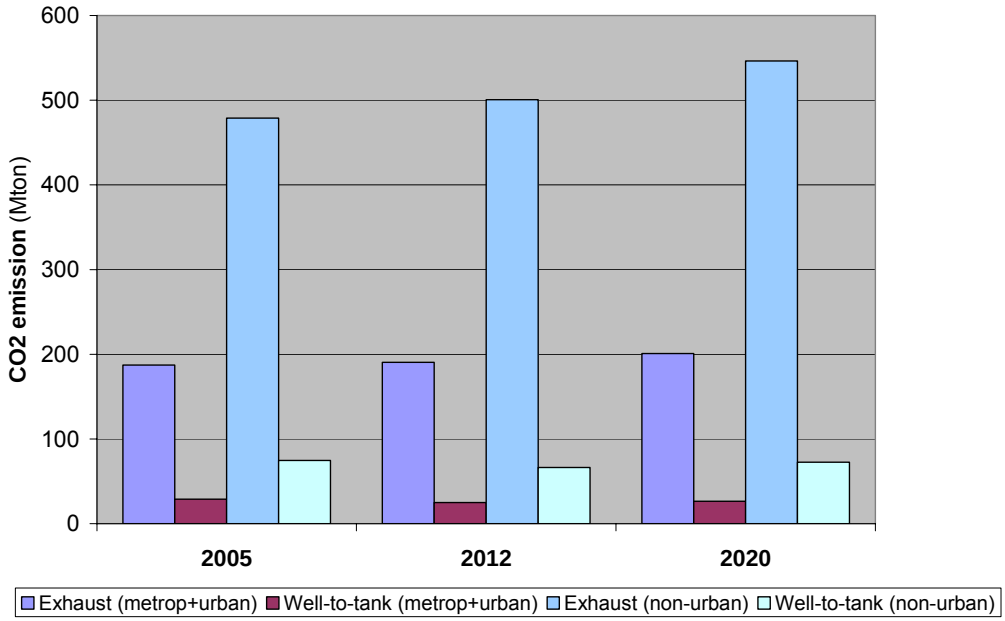
43 Source for historic data: Eurostat. Conversion to urban and metropolitan areas based on vkm comparison from TREMOVE.

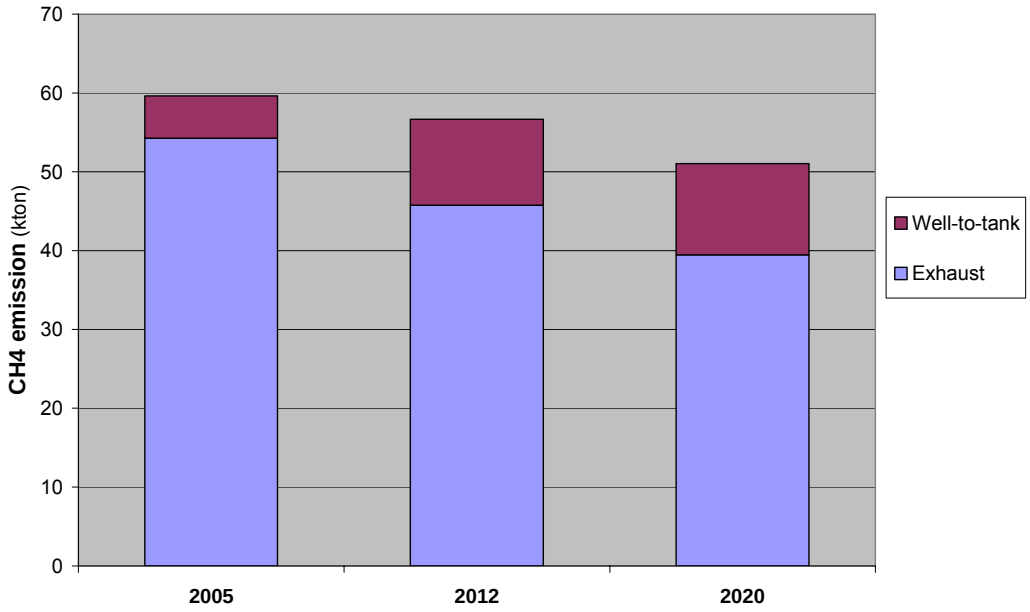
44 TREMOVE, based on CO_2 emission trends. Does not include the recent EU energy goals for 2020.

CO_2 emissions (Mt) by transport in EU-27 (2005, 2012 and 2020)



Emissions of methane (CH_4), another greenhouse gas, in metropolitan and other urban areas are expected to drop by about 27% between 2005 and 2020.

Methane emissions (kt) by transport in EU-27 (2005, 2012 and 2020)



The next figure displays the expected trends in emissions of other pollutants in metropolitan and other urban areas between 2005 and 2020. The following observations can be made:

– as a result of better technology (more efficient burning of fuel), emissions of carbon monoxide (CO) are expected to decline by almost 80%;

– the expected reduction of emissions of nitrogen oxides (NO_x) during the exhaust phase is 67%;

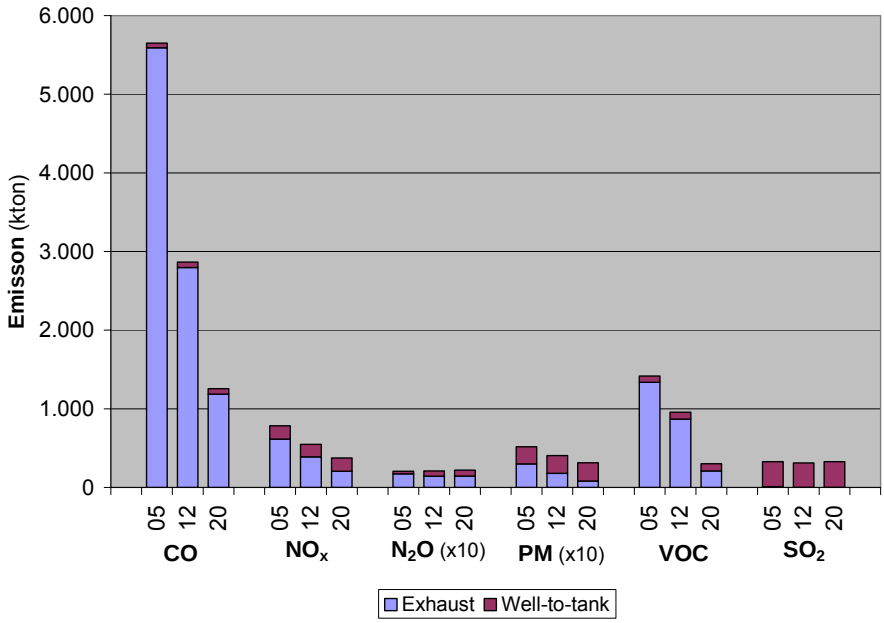
– emissions of nitrous oxide (N_2O) are expected to remain almost constant. Note that the amount of emissions has been multiplied by a factor of 10 in the figure below;

– emissions of fine particles (PM) during the exhaust phase are expected to decline to 73% of the 2005 level. Note that the amount of emissions has been multiplied by a factor of 10 in the figure below;

– VOC emissions are expected to decrease by 84% between 2005 and 2020;

– total emissions of sulphur dioxide (SO_2) are expected to remain almost constant.

Well-to-tank and exhaust emissions (kt) by transport in EU-27 (2005, 2012 and 2020)



Note that the number of km outside urban areas is much higher than in urban areas. Emissions in non-urban areas therefore "outscore" emissions in urban areas. This figure gives no indication of "emissions per km", which are higher in urban areas.

Economy

The expected growth in GDP is 16% between 2005 and 2012 and 18% between 2012 and 2020. As a result, the total expected growth between 2005 and 2020 is 37%[45]. It has been estimated that just under 85% of the EU's GDP is created in cities and towns.

It is very difficult to assess the trends in administrative costs at EU level from the trends in urban mobility. However, due to an increase in operating costs as a result of increasing congestion and of the introduction of congestion charging schemes, the administrative costs

[45] "Long-term labour productivity and GDP projections for the EU25 Member States: a production function framework", European Economy. Economic Papers No 253, June 2006, page 39: http://ec.europa.eu/economy_finance/publications/publication_summary688_en.htm.

for businesses can be expected to increase. The information needed in order to analyse the administrative costs of congestion charging and other similar schemes is not available.

There is, however, some evidence about the administrative costs of the London congestion charge scheme. According to Transport for London (TfL), the administrative and time costs for all people paying the charge (both business and personal users) total £15 million per year. However, the London Assembly Transport Committee noted: "On the evidence we heard, this figure is likely to be far too low".

Although no indicative aggregate figure for total direct and indirect costs was available, a CBI (Confederation of British Industry) study found that "direct costs of paying for the charge [for some companies] run into hundreds of thousands of pounds" and several organisations have had to employ an extra person to deal with the complex administration[46]. London First (a lobby group focusing on keeping the London economy competitive) noted that the requirement for travellers and businesses to maintain records, particularly reconciling fleet movements, "can be quite burdensome for business in that sector"[47].

At this stage, it is not possible to estimate the impact of congestion charging on administrative costs in any meaningful manner. What can be said is that the administrative costs are large enough that they cannot be ignored. Furthermore, if congestion charging and other similar schemes proliferate without any standardisation or harmonisation, the administrative burden of complying with the charging systems could potentially become quite significant for multinationals operating in cities across Europe.

Increased transport costs caused, for example, by congestion can be expected to have an impact on competition on the internal market. Increasing transport costs can reduce the catchment area in which producers can compete competitively. However, it should be borne in mind that there are also opposite trends, causing catchment areas to expand. The overall effect depends on the share taken by transport in the total cost of a product. Likewise, as consumers can travel fewer kilometres with their transport budget, some might buy their products in a smaller radius. Both effects reduce competition between companies.

Social

Social exclusion, and the impact of transport on it, is a complicated subject and very difficult to address for the whole of the EU. This section considers the issue of social exclusion in an urban context. It describes the challenges facing European cities and the importance of transport and mobility in responding to them.

Broadly speaking, European cities face two main challenges: the pains that accompany growth and the symptoms of stagnation or decline[48]. A rapidly growing city brings with it a whole range of problems. In several European cities experiencing rapid growth (Dublin, London, Amsterdam, Madrid, Barcelona and the Central and Eastern European capitals of Prague, Budapest and Tallinn) the upward pressure on the housing market has resulted in a

46 London Assembly Transport Committee, 26 November 2003.
47 London Assembly Transport Committee, 26 November 2003.
48 European Commission, DG REGIO (2007), State of European Cities Report.

lack of affordable housing and is contributing to urban sprawl, longer commuting distances, traffic congestion and environmental degradation[49].

Construction of new business and shopping centres on the outskirts of cities is further exacerbating suburban sprawl and increasing dependence on the automobile[50].

The conclusions of a recent European Commission report on social exclusion are worth quoting at length[51]:

> *"An increasing share of the urban population is living alone, particularly in the core city areas, while families are migrating to the suburbs. Although city dwellers are better educated than the population at large, the benefits from the economic wealth generated in cities are not evenly distributed. Many urban residents face the uncertainties of unemployment, social exclusion and poverty, and these problems are strongly concentrated in particular neighbourhoods. Life expectancy is also lower in urban areas, and this can be partially blamed on pollution of the living environment. Clearly creating and maintaining prosperity while ensuring social cohesion and tackling environmental problems continues to be the central challenge facing Europe's cities today."*

Another recent study analysing the problems facing European cities and the strategies used to respond to them concluded that one of the common elements in the strategies to combat the problems facing cities was improving public transport and transport infrastructure[52]. The cities included in this study were suffering from massive depopulation, economic downturn due to the decline of manufacturing, job losses, urban sprawl, city centre decay and polarisation of neighbourhoods, with knock-on effects on education, the tax base and provision of services.

> *"Over a period of 30 years up to 2000, all the cities lost their core rationale, economic prominence and political weight. As producer cities, they had been central to their countries' prosperity – now they were increasingly seen as obsolete industrial 'left-overs' with a shrinking place in the new economy based on services and 'new knowledge industries'. Civic pride was damaged along with urban landscapes, and social exclusion came to reflect a deep and multi-faceted form of separation from mainstream society. Civic leadership, often still embedded in the fading realities of the industrial era, lost its way. Skills mismatches seriously impeded recovery."*

This report concluded that upgrading and improving public transport infrastructure and services has been an important factor in the recovery of these cities and their success in combating the social exclusion problems that they were facing. The transport strategies included:

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49 Ibid.

50 Ibid.

51 Ibid.

52 Power, A., Plöger, J. and Winkler, A. (2008): Transforming Cities Across Europe, An Interim Report on Problems and Progress, London School of Economics and Political Science, CASE Report 49. The seven cities included in this study were Leipzig, Bremen, Sheffield, Belfast, Bilbao, Turin and Saint Étienne.

- upgrading public transport to overcome the dominance of traffic and the expansion of roads which were dissecting cities and destroying urban spaces and communities;

- providing new and upgraded tram lines in Sheffield and Saint Étienne and a modernised metro system in Bilbao;

- restricting car access and car parking in Leipzig and Bremen;

- expanding pedestrian areas in all seven cities, to increase pedestrian street activity and the attractions of city-centre living and shopping;

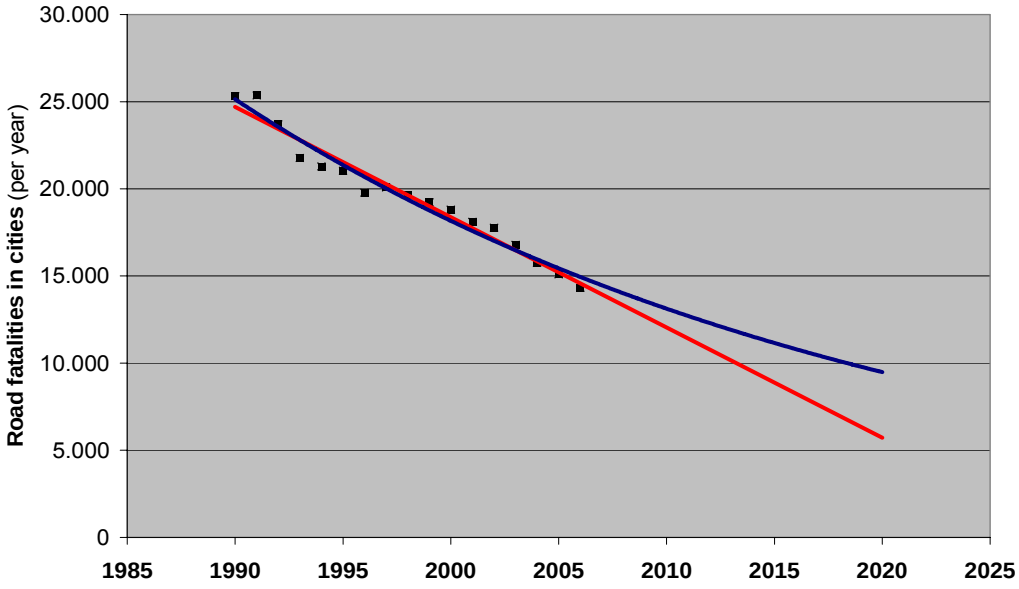
- providing fast transport links from the cities to the surrounding regions and nearby major cities by both train and road to increase employment opportunities by expanding the labour market, making it easier to attract inward investment and helping the cities to benefit from the stronger growth of larger, neighbouring cities. Lyon and Leeds are examples of large second-tier regional centres near Saint Étienne and Sheffield respectively.

To conclude, social exclusion is clearly a problem in most European cities (although the causes differ from one city to another). It is equally clear that mobility and transport are key factors in explaining and combating social exclusion in cities. Finally, it is difficult to forecast the extent and severity of social exclusion in European cities in 2020. However, it can be said with some degree of confidence that, given the long time it takes for urban redevelopment plans to be implemented and to have an impact, the problem of social exclusion in urban environments is unlikely to go away. On the contrary, given the growth of urban populations, the uneven growth of cities across Europe and the uneven growth of neighbourhoods within cities, the problems are likely to get worse unless steps are taken to counteract these developments.

Road fatalities have been dropping steadily since 1990. In 2006, 42 953 road fatalities occurred compared with 75 977 in 1990: a decrease of 43%[53]. According to the mid-term review of the Transport White Paper, one third or 33% of these fatalities occur in cities. The next figure indicates the number of road fatalities in cities, assuming a constant share of 33% of all road fatalities.

[53] DG TREN, Statistical Pocketbook 2007, Road Fatalities for EU-27.

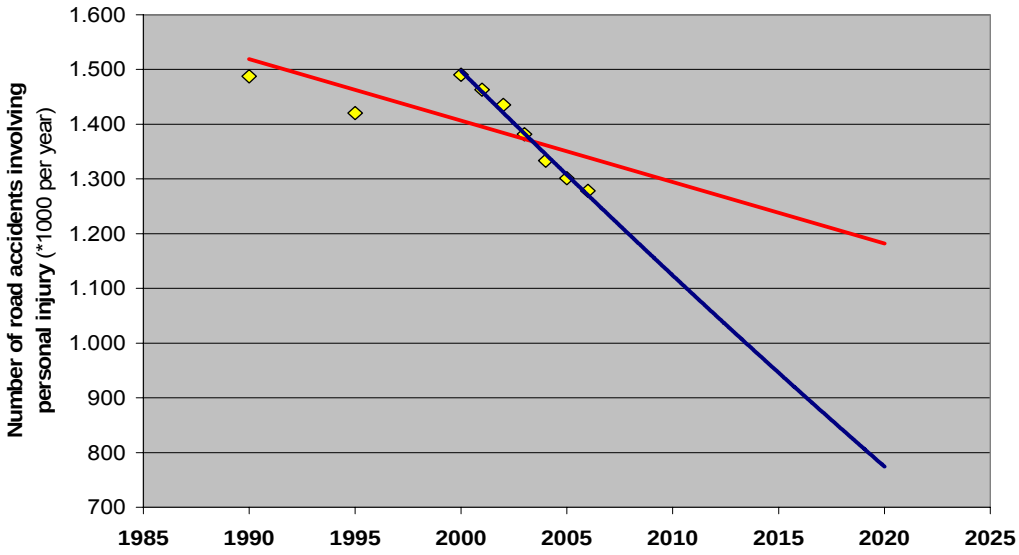
Road fatalities in cities in EU-27 (1995–2020)



However, this linear trend is unlikely to continue indefinitely. Some slowdown can be expected, but the rate is unknown. If the linear trend continues until 2020, the number of road fatalities in cities will have dropped to under 6 000 per year. If the curve is quadratic, the number will have dropped to approximately 9 500 per year.

The number of road accidents also shows a decline, especially between 2000 and 2020. The quality of recording of accidents is expected to be more consistent from 2000 onwards. Therefore two trend lines have been included in the figure below. The red line indicates a linear trend from 1990 to 2020 and results in a decrease in road accidents from over 1 500 000 in 1990 to under 1 200 000 in 2020. The blue line indicates a non-linear polynomial trend from 2000 to 2020 and results in a decrease in road accidents from 1 500 000 in 2000 to under 800 000 in 2020. Note that these figures are totals and do not specifically indicate accidents in urban areas.

Possible trends in road accidents



Transport is one of the factors outside the healthcare sector that is known to influence health[54]. The damaging effects of transport on human health include injuries from traffic accidents, the effects of noise pollution, air pollution, stress and anxiety, danger, loss of land and reduced social use of outdoor space because of traffic and other transport infrastructure leading to obesity[55]. Here, the consequences of transport-related air pollution on human health will be examined.

A number of components of traffic-related air pollution have been demonstrated to have an impact on health, notably particulates (PM_{10}), ozone, sulphur dioxide, carbon monoxide and nitrogen dioxide[56]. The effects of air pollution on health include a variety of respiratory and cardiovascular problems such as coughing, wheezing, asthma attacks, congestive heart failure and certain forms of cancer. The parts of the population most at risk are the elderly, the young and the population groups with the highest risk of exposure to traffic-related air pollution.

54 Kavanagh, P., Doyle, C. and Metcalf, O. (2005): Health Impacts of Transport, A Review, Institute of Public Health in Ireland; World Health Organisation (1999): Health Costs due to Traffic-related Air Pollution.

55 Ibid.

56 Committee on the Medical Effects of Air Pollutants (COMEAP): Quantification of the effects of air pollution on health in the United Kingdom, London, HMSO, 1998; European Commission: Externalities of Energy (ExternE). The final report of the ExternE Core Transport Project, Brussels, European Commission, 2000; Watkiss, P., Brand, C., Hurley, F., Pilkington, A., Mindell, J., Joffe, M. *et al:* Informing transport health impact assessment in London, London, Research and Development Directorate, NHS Executive, 2000; World Health Organisation: Health aspects of air pollution with particulate matter, ozone and nitrogen dioxide. Report of a WHO working group. Available at: http:www.who.dk/document/e79097.pdf.

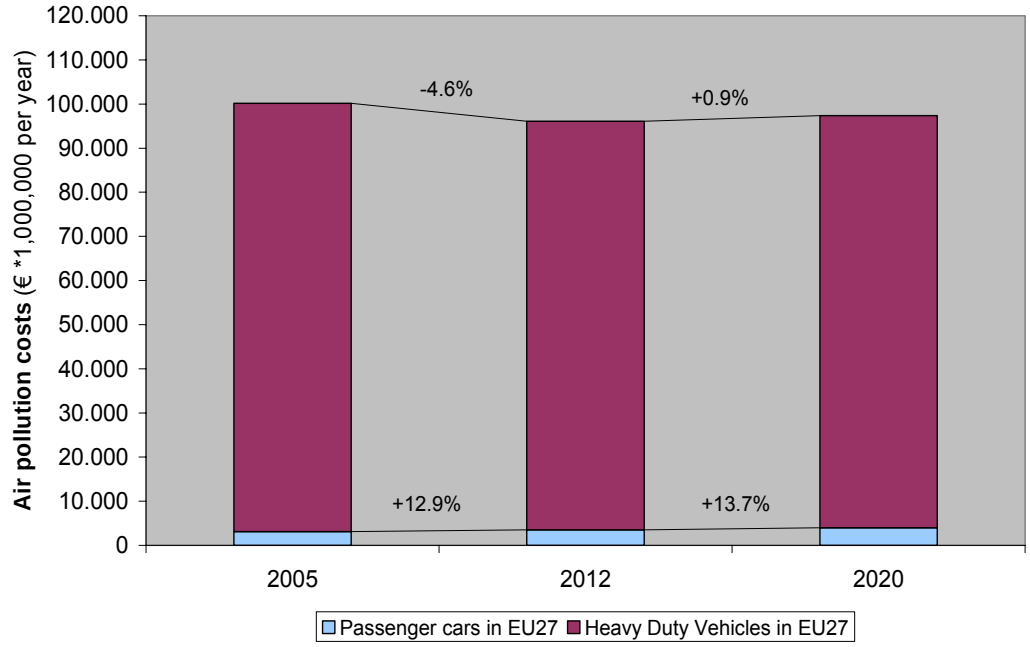
Although other sources, such as industry and energy production, are important, transport is a large source of many chemicals contributing to air pollution. A study estimated that in the UK transport contributes 74% of all carbon monoxide, 61% of all lead, 48% of all nitrogen dioxide, 23% of all particulate matter (PM_{10}) and 2% of all sulphur dioxide[57].

A study of the health costs of air pollution in Austria, Switzerland and France estimated that the total per capita air-pollution-related health costs averaged €830 in Austria, €667 in France and €589 in Switzerland[58]. Of these totals, €359, €371 and €313 were attributable to traffic-related air pollution.

Long-term exposure to traffic-related emissions leads to early deaths, mainly caused by bronchial tube disorders. The individual health risk is small, but since a large fraction of the population is exposed (in the Netherlands about 5% of the population lives close to a busy road), the effect on public health in general is still considerable, despite the improvements in air quality over the last few years[59].

TREMOVE estimated that the air pollution costs of passenger cars and heavy duty vehicles in metropolitan and other urban areas will decrease by about 4.5% between 2005 and 2012 and then increase slightly.

Air pollution costs for passenger cars and heavy duty vehicles in metropolitan and other urban areas in EU-27 (2005, 2012 and 2020)



57 Department of the Environment, Transport and the Regions (1999): The air quality strategy for England, Scotland, Wales and Northern Ireland. London, The Stationery Office.

58 World Health Organisation (1999): Health Costs due to Traffic-related Air Pollution, An impact assessment of Austria, France and Switzerland.

59 Beelen, R. (2008): Effects of long-term exposure to traffic-related air pollution on mortality and lung cancer. PhD thesis, Utrecht University, the Netherlands.

In 2000, about 44% of the EU-25[60] population (over 210 million people) were exposed to road traffic noise levels above 55 dB(A)[61] – the WHO guide value for outdoor noise levels and the threshold for serious annoyance. According to a recent study, more than 55 million people were exposed to road traffic noise levels over 65 dB(A), ten times louder than the WHO guide value.

Turning to rail, in 2000 approximately 35 million people in EU-25 were exposed to rail traffic noise above 55 dB and 7 million of them to over 65 dB. It must be added that most European countries do not report on the number of people exposed to noise levels below 55 dB.

Nevertheless, noise levels below 55 dB can still trigger adverse effects like annoyance, sleep disturbance and reduced cognitive ability. The actual number of people exposed to levels of traffic noise that are potentially dangerous to their health will thus be higher than the above-mentioned figures.

German research suggests that excessive noise causes 1 800 premature deaths in the EU every year — mostly in urban areas[62]. The number of people who suffer from noise nuisance will be many times higher. The social costs of noise (above 55 dBi) in EU-22[63] have been estimated at between €38 billion and €46 billion per year[64].

The external costs of noise from passenger cars in metropolitan and other urban areas, according to the results from the TREMOVE and IMPACT studies, are shown in the figure below, which indicates a significant and constant increase in noise costs.

60 EU-27 excluding Cyprus and Malta.

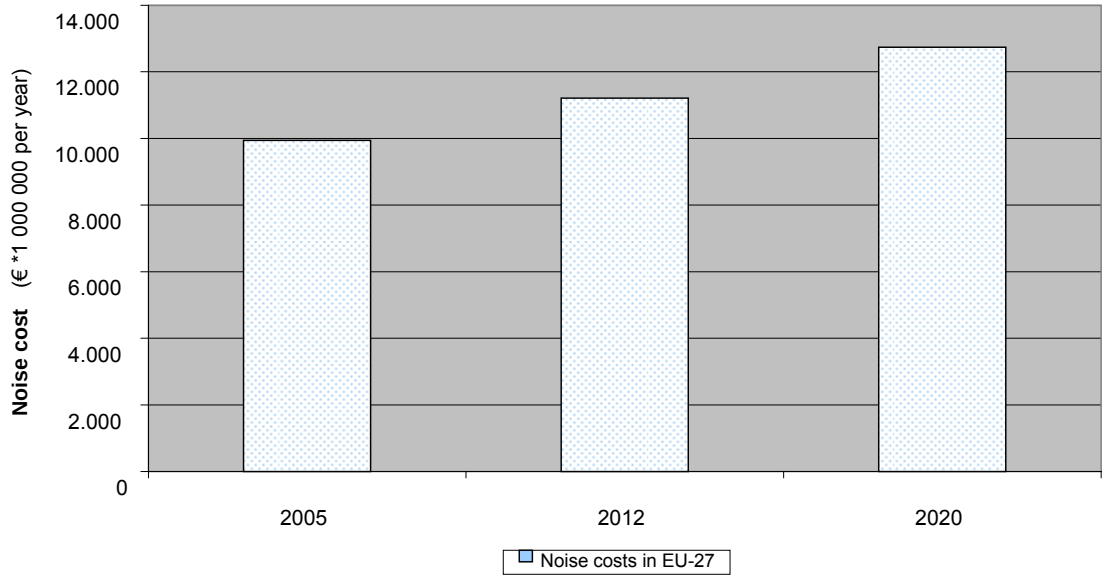
61 Den Boer, L. C. and Schroten, A. (2007): Traffic Noise Reduction in Europe. Health effects, social costs and technical policy options to reduce road and rail traffic noise, CE Delft.

62 ECMT, 2006: Implementing sustainable urban travel policies: Applying the 2001 key messages. ECMT/CM (2006)3/Final, ECMT, 2006.

63 EU-27 excluding Cyprus, Estonia, Latvia, Lithuania and Malta.

64 Infras/IWW (2004): External Costs of Transport, Update Study; Link, H. (2000): The Accounts approach, UNITE (Unification of accounts and marginal costs for transport efficiency).

Noise costs attributable to passenger cars in metropolitan and other urban areas in EU-27 (2005, 2012 and 2020)



ANNEX IV: THE EU's RIGHT TO ACT

The EU has been dealing with urban mobility and transport issues for many years, fully respecting the subsidiarity principle. Since publication of its first Green Paper and Action Plan to develop a Citizens' Network[65] about ten years ago, some progress has been made. Steps to promote exchanges of information, benchmarking and research have been initiated under the common transport policy.

But in recent years, new challenges have emerged and EU policies other than transport have taken measures, sometimes in isolation, which have consequences for urban mobility. This was the reason for preparation of the Green Paper on urban mobility which aimed at defining the added value of current and possible new actions at EU level.

This annex assesses the EU's right to act on the basis of the Lisbon Treaty on the functioning of the European Union and on the basis of the current Treaty establishing the European Community and includes some concluding remarks on the instruments that can be used.

Assessment on the basis of the Lisbon Treaty on the functioning of the European Union

This assessment of the EU's right to act is based on the Lisbon Treaty on the functioning of the European Union (TFEU) as it stands. It must, however, be borne in mind that the ratification process of the TFEU is ongoing and that it is not yet fully clear how the TFEU provisions will influence interpretation of the EU's right to act and the subsidiarity principle in future.

Two conditions have to be met in order to determine whether the EU has the right to act:

- the problem must be linked to at least one article of the Treaty; and
- if the problem falls in an area where competence is shared between Member States and the Union, the Commission must demonstrate that it cannot be solved sufficiently at Member State level.

In order to satisfy the second of these conditions, action at EU level can be justified when the conditions of the "necessity test" are met. These include:

- the existence of transnational aspects that cannot be satisfactorily regulated by Member States;
- action by one or more Member States alone would conflict with the requirements of the Treaty; and
- action by Member States, or lack of EU action, would significantly damage Member States' interests.

Once the "necessity test" is passed, next action at EU level must satisfy the "added value test" (i.e. the objectives can be better achieved at EU level) and the "boundary test" (i.e. action at EU level must be limited to what cannot be achieved by the Member States alone).

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[65] The Citizens' Network: COM(95) 601 and COM(1998) 431.

In conclusion, this means that the EU's right to act has to be assessed on the basis of two criteria: the problem must be linked to at least one article of the Treaty and there should be a necessity to act at EU level. In addition, there should be added value in action at EU level and this action must be limited to what cannot be achieved by the Member States.

The subject of urban mobility and transport falls under Article 90 of the TFEU which provides for a common transport policy. Articles 91(c) and 91(d) of the TFEU are relevant to urban mobility and transport. They state that for the purpose of implementing Article 90 the European Parliament and Council will lay down measures to improve transport safety and any other appropriate provisions, respectively.

Article 4 of the TFEU lists transport as one of the areas of shared competence between the EU and Member States. Given that the same article lists trans-European networks separately, this means that transport can be understood as meaning not only long-distance transport.

Urban mobility and transport cover a wider domain than transport alone and touch upon different Titles and Articles in the Treaty. For example, with regard to emissions from road traffic and noise, Article 11 of the TFEU requires the EU to incorporate environmental protection requirements in its policies and action. Article 168 of the TFEU requires EU policy to aim at obviating sources of danger to physical and mental health. Article 153 provides for the EU to act to combat social exclusion and Articles 174 and 175 for the EU to promote harmonious development and strengthening of its economic and social cohesion and reduce disparities between regions.

On the basis of the above assessment, it can be concluded that urban mobility and transport are linked to at least one article of the Treaty.

The next step is the "necessity test". There are several examples confirming the necessity to take action at EU level. One of the problems related to urban mobility and transport are emissions from road traffic, including emissions that contribute to climate change. This is a problem with a clear transnational dimension, where action by individual Member States, for example to set new limit values, introduce financial incentives or implement their own access restriction rules, could be in violation of EU legislation. Urban congestion affects enterprises from other Member States.

Addressing the problem of imperfect information on market developments, monitoring the fragmentation of policies, targets and objectives and assessing urban mobility trends at local, regional and national levels is something that can only be done efficiently and effectively at EU level. No action by the EU in this field, or action by just a few individual Member States, could lead to less informed decisions and damage the financial and policy interests of Member States.

These examples provide a sufficient basis to conclude that urban mobility and transport pass the "necessity test".

The "added value" test requires that the EU must act only if the objectives can be better achieved at Union level. For example, dissemination of information and knowledge, expansion of the knowledge base and exchanges of best practice in the area of urban mobility are best carried out at EU level. This will avoid duplication of work and fragmentation of resources and allow decision-makers to benefit from the broadest, most diverse experience possible.

Emission and noise limits are best set at EU level in order to avoid adoption of different standards in different Member States, which would add to the regulatory burden. Other examples include setting technical standards, e.g. for intelligent travel information and payment systems, including Galileo-based applications. As mentioned earlier, there is also clear added value in action at EU level on information and data collection and monitoring.

Based on the above observations, there is a basis to conclude that there is "added value" in EU action in the field of urban mobility and transport.

Finally, it is important to bear in mind that, in contrast to the existing Treaty, the TFEU includes stronger recognition of the local and regional government levels in development and implementation of EU policy and legislation. For example, the TFEU explicitly recognises the principle of local and regional self-government**.** The definition of subsidiarity is extended to include the local and regional levels. The Commission should consult local and regional governments more effectively. And, finally, the objectives of the EU would include territorial, economic and social cohesion[66].

Assessment on the basis of the Treaty establishing the European Community

Many of the arguments set out above also apply to the current Treaty.

The subject of urban mobility and transport falls under Article 70 of the Treaty which provides for a common transport policy. Articles 71(c) and 71(d) are relevant to urban mobility and transport. They state that for the purpose of implementing Article 70 the Council and the European Parliament will lay down measures to improve transport safety and any other appropriate provisions, respectively. Urban mobility and transport cover a wider domain than transport alone and touch upon different Titles and Articles in the Treaty, for example Articles 174 and 175 (environment) and 158 (economic and social cohesion).

Article 5 of the Treaty deals with the subsidiarity principle and applies to urban mobility and transport. Several examples confirming the necessity to take action at EU level have been given already. These examples provide a sufficient basis to conclude that, under the current Treaty, urban mobility and transport pass the "necessity test" and the "added value test".

[66] Commentators consider that this objective applies at all levels of government.

Conclusion

In conclusion, the EU has a basic right to act in the area of urban mobility and transport, but the subsidiarity principle applies. This impact assessment is linked to development of the Action Plan on Urban Mobility and supports the selection of possible actions for the Action Plan at EU level. The answer to the question whether the "boundary test" is passed will depend on the specification and area of application of each individual action proposed for the Action Plan.

In the light of the above assessment, all eight EU instruments can, in principle, be used in the field of urban mobility and transport.

These instruments[67] are:

1. Self-regulation (monitoring);

2. Open method of coordination;

3. Information and guidelines;

4. Market-based instruments;

5. Direct public-sector financial intervention;

6. Co-regulation;

7. Framework directive;

8. Prescriptive regulatory action (regulation, directive or decision).

[67] These are the categories given in the Impact Assessment Guidelines of 15 June 2005, as updated on 15 March 2006 (SEC(2005) 791).

ANNEX V: FROM THE LONG LIST TO THE SHORTLIST

Screening the policy options on subsidiarity, efficiency, effectiveness and consistency

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
Free-flowing towns and cities							
1		**Require cities to set modal split targets**					
	1	Self-regulation	+	1	2	3	–
	2	Open method of coordination	–				
	3	Information and guidelines	+	1	2	3	–
	4	Market-based instruments	–				
	5	Direct public-sector financial intervention	–				
	6	Co-regulation	–				
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
2		**Ban private car use in city centres**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	n.a				
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	–				
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
3		**Ban on-street parking in city centres**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	n.a				
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
	6	Co-regulation	–				
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
4		**Recognise efforts of cities to improve sustainable urban mobility**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	+	1	1	3	–
	4	Market-based instruments (rating bureau)	+	1	1	3	–
	5	Direct public-sector financial intervention	+	2	2	2	**6**
	6	Co-regulation	n.a				
	7	Framework directive	n.a				
	8	Prescriptive regulatory action (regulation, directive or decision)	n.a				
5		**Promote information on access limitations for road users in cities**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a.				
	3	Information and guidelines	+	2	2	3	**7**
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	3	3	2	**8**
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
6		**Promote more efficient urban freight distribution and logistics**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	+	3	3	3	**9**
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	3	3	3	**9**
	6	Co-regulation	n.a				

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
	7	Framework directive	n.a				
	8	Prescriptive regulatory action (regulation, directive or decision)	n.a				
Greener towns and cities							
7		**Internalise the external costs of urban transport**					
	1	Self-regulation	+	1	1	1	–
	2	Open method of coordination	+	1	1	1	–
	3	Information and guidelines	+	1	1	1	–
	4	Market-based instruments	+	3	3	3	**9**
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	3	2	2	**7**
	7	Framework directive	+	3	2	2	**7**
	8	Prescriptive regulatory action (regulation, directive or decision)	+	3	2	1	**6**
8		**Require cities to set targets for CO_2 emissions from urban transport**					
	1	Self-regulation	+	1	2	3	–
	2	Open method of coordination	–				
	3	Information and guidelines	+	1	2	3	–
	4	Market-based instruments	–				
	5	Direct public-sector financial intervention	–				
	6	Co-regulation	–				
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
9		**Require zero CO_2 propulsion for urban public transport**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	n.a				
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	2	1	3	**6**

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
10		**Promote "green" procurement by public authorities**					
	1	Self-regulation	+	2	2	1	**5**
	2	Open method of coordination	+	2	2	2	**6**
	3	Information and guidelines	+	2	2	3	**7**
	4	Market-based instruments	+	2	2	2	**6**
	5	Direct public-sector financial intervention	+	2	1	2	**5**
	6	Co-regulation	+	3	2	2	**7**
	7	Framework directive	+	3	1	1	**5**
	8	Prescriptive regulatory action (regulation, directive or decision)	+	3	1	1	**5**
11		**Promote take-up of clean and energy-efficient vehicle technology and alternative fuels**					
	1	Self-regulation	+	1	1	3	**–**
	2	Open method of coordination	+	2	2	2	**6**
	3	Information and guidelines	+	1	1	3	**–**
	4	Market-based instruments	+	3	2	2	**7**
	5	Direct public-sector financial intervention	+	3	2	3	**8**
	6	Co-regulation	+	2	2	2	**6**
	7	Framework directive	+	3	1	1	**5**
	8	Prescriptive regulatory action (regulation, directive or decision)	+	3	2	3	**8**
12		**Require designation of "green" zones in sensitive areas**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	n.a				
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	1	1	3	**–**
	7	Framework directive	–				

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
13		**Harmonise rules for environmental zones**					
	1	Self-regulation	+	1	1	2	–
	2	Open method of coordination	+	1	1	2	–
	3	Information and guidelines	+	1	1	2	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	1	1	2	–
	6	Co-regulation	+	3	2	2	**7**
	7	Framework directive	n.a				
	8	Prescriptive regulatory action (regulation, directive or decision)	+	3	2	2	**7**
Smarter urban transport							
14		**Improve the interoperability of ticketing and payment systems for public transport**					
	1	Self-regulation	+	1	1	3	–
	2	Open method of coordination	+	2	2	3	**7**
	3	Information and guidelines	+	2	1	3	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	2	2	2	**6**
	6	Co-regulation	+	3	2	2	**7**
	7	Framework directive	+	3	3	1	**7**
	8	Prescriptive regulatory action (regulation, directive or decision)	+	3	3	1	**7**
15		**Improve harmonisation and provision of travel information**					
	1	Self-regulation	+	1	1	3	–
	2	Open method of coordination	+	2	2	3	**7**
	3	Information and guidelines	+	2	2	3	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	1	1	3	–
	6	Co-regulation	+	2	2	3	**7**
	7	Framework directive	+	3	2	1	**6**

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
	8	Prescriptive regulatory action (regulation, directive or decision)	+	3	2	1	**6**
Accessible urban transport							
16		**Require transport impact assessments as a precondition for planning permission**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	n.a				
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	–				
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
17		**Require establishment of urban mobility authorities**					
	1	Self-regulation	n.a				
	2	Open method of coordination	+	2	2	2	**6**
	3	Information and guidelines	+	1	1	3	**–**
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	2	1	3	**6**
	6	Co-regulation	+	2	2	2	**6**
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
18		**Require adoption of SUTPs as a condition for EU funding**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	n.a				
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	2	2	2	**6**
	7	Framework directive	–				

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
19		**Promote integrated planning for urban mobility and transport**					
	1	Self-regulation	+	1	1	3	–
	2	Open method of coordination	+	2	2	3	**7**
	3	Information and guidelines	+	1	1	3	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	1	1	2	**4**
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
20		**Improve coordination between urban mobility and land-use planning**					
	1	Self-regulation	+	2	2	3	**7**
	2	Open method of coordination	+	2	2	2	**6**
	3	Information and guidelines	+	2	2	3	**7**
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	–				
	6	Co-regulation	–				
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
21		**Strengthen the rights and obligations of users of public transport**					
	1	Self-regulation	+	2	2	3	**7**
	2	Open method of coordination	+	2	2	2	**6**
	3	Information and guidelines	+	1	1	2	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	2	2	2	**6**
	7	Framework directive	+	2	2	1	**5**
	8	Prescriptive regulatory action (regulation, directive or decision)	+	2	2	1	**5**

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
22		**Improve accessibility of public transport**					
	1	Self-regulation	+	1	1	3	–
	2	Open method of coordination	+	2	2	3	**7**
	3	Information and guidelines	+	1	1	3	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	2	2	3	**7**
	6	Co-regulation	+	2	2	2	**6**
	7	Framework directive	+	3	3	1	**7**
	8	Prescriptive regulatory action (regulation, directive or decision)	+	3	3	1	**7**
23		**Require operators to accept bicycles in urban public transport**					
	1	Self-regulation	+	1	2	3	–
	2	Open method of coordination	+	1	2	3	–
	3	Information and guidelines	+	1	2	3	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	1	2	3	–
	6	Co-regulation	–				
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
Safe and secure urban transport							
24		**Promote safe walking and safe cycling**					
	1	Self-regulation	+	1	1	1	–
	2	Open method of coordination	+	2	2	2	**6**
	3	Information and guidelines	+	2	3	3	**8**
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	3	2	2	**7**
	6	Co-regulation	–				
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
25		**Raise the minimum age for driving licences to 25**					
	1	Self-regulation	+	1	3	2	–
	2	Open method of coordination	+	1	3	2	–
	3	Information and guidelines	+	1	3	2	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	1	3	2	–
	7	Framework directive	+	2	1	1	–
	8	Prescriptive regulatory action (regulation, directive or decision)	+	2	1	1	–
Cross-cutting issues							
26		**Improve data harmonisation, collection, validation and reporting**					
	1	Self-regulation	+	1	1	3	–
	2	Open method of coordination	+	2	2	2	**7**
	3	Information and guidelines	+	1	1	3	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	2	2	3	**7**
	6	Co-regulation	+	2	2	2	**6**
	7	Framework directive	n.a				
	8	Prescriptive regulatory action (regulation, directive or decision)	+	3	3	3	**9**
27		**Improve dissemination of knowledge and best practice**					
	1	Self-regulation	+	1	3	3	–
	2	Open method of coordination	+	2	2	3	**7**
	3	Information and guidelines	+	3	3	3	**9**
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	3	2	3	**8**
	6	Co-regulation	n.a				
	7	Framework directive	n.a				
	8	Prescriptive regulatory action (regulation, directive or decision)	n.a				

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
28		**Intensify research, development and demonstration activities**					
	1	Self-regulation	+	1	1	3	–
	2	Open method of coordination	+	2	2	2	**6**
	3	Information and guidelines	+	1	1	3	–
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	3	2	3	**8**
	6	Co-regulation	n.a				
	7	Framework directive	n.a				
	8	Prescriptive regulatory action (regulation, directive or decision)	n.a				
29		**Promote awareness and behavioural change, including eco-driving**					
	1	Self-regulation	+	1	1	3	–
	2	Open method of coordination	+	2	2	3	**7**
	3	Information and guidelines	+	2	3	3	**7**
	4	Market-based instruments	+	2	2	3	**7**
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	2	2	2	**6**
	7	Framework directive	+	3	2	2	**7**
	8	Prescriptive regulatory action (regulation, directive or decision)	+	3	2	2	**7**
30		**Promote investment in integrated urban transport, including public transport**					
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	+	2	2	3	**7**
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	+	3	2	3	**8**
	6	Co-regulation	+	2	2	1	**5**
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				
31		**Require implementation of a "value-capture tax"**					

Policy option number	Instrument number		Subsidiarity	Effectiveness	Efficiency	Consistency	Total score
	1	Self-regulation	n.a				
	2	Open method of coordination	n.a				
	3	Information and guidelines	n.a				
	4	Market-based instruments	n.a				
	5	Direct public-sector financial intervention	n.a				
	6	Co-regulation	+	2	2	1	**5**
	7	Framework directive	–				
	8	Prescriptive regulatory action (regulation, directive or decision)	–				

- A plus (+) in the subsidiarity column means that the policy option using this instrument passes the subsidiarity test and that taking action at EU level can therefore have added value. A minus (–) means that action using this instrument can better be taken at national, regional or local levels. For some instruments, this test is not applicable, in which case this is indicated as "n.a." Policy options which fail the subsidiarity test are no longer taken into account and no further analysis of them will be carried out.

- Each combination of a policy option with an instrument that passes the subsidiarity test is awarded a score for efficiency, effectiveness and consistency, ranging from 1 (low) to 3 (high). The total score is indicated in the last column. However, if the score for effectiveness is 1, no total score is given, because the combination is no longer perceived as a viable option.

- Policy options which score a total of 6 or lower for all instruments are considered unviable. This was the case for 12 options.

ANNEX VI: DESCRIPTION OF THE IMPACT OF SHORTLISTED POLICY OPTIONS

This annex describes the different kinds of impact of the shortlisted policy options, in either quantitative or qualitative terms.

Option 5: Provide information on access limitations for road users in cities

An increasing number of cities are introducing demand management schemes in urban areas for motor vehicles in the form of environmental zones or road use charging. This policy option provides a stronger basis for policy-making in this area at all levels of government. It can contribute to better informed decisions. In the longer term an initiative at EU level can also help to reduce costs by reducing fragmentation in use of resources.

The impact of the London congestion charge scheme[68] includes a 21% reduction in traffic entering the original charging zone, a 43% increase in cycling within the zone and reductions in accidents and key traffic pollutants, with the retail sector now outperforming the rest of the UK and significant income raised. The impact of the Stockholm congestion charging scheme[69] includes a 10-15% reduction in traffic volume to/from the inner city, 30-50% less traffic and reductions in pollutant emissions of 14% in the inner city and of 2.5% in Stockholm county as a whole. The cost of operating the schemes is a concern.

For this option, a non-regulatory approach could be put in place by the EU in order to assess whether the local initiatives are in line with developments and existing legislation at EU level or whether the rules for vehicles entering from other parts of the country and from abroad are clear and interoperable.

There are few guarantees that the information generated by this option will actually be used. This influences its effectiveness. This obstacle can be overcome by ensuring active involvement of users and good dissemination of information. This option has no impact on specific groups, nor are there any obstacles to compliance. It is difficult to predict the impact, given that use of the information is not mandatory.

Option 6: Promote more efficient urban freight distribution and logistics

Urban freight transport is sometimes forgotten by local policy-makers. This policy option would incorporate the urban activities included in the 2007 Freight Transport Logistics Action Plan. Additional activities could, however, be launched and recommendations for policy-makers prepared. This policy option will make a positive contribution to a wide range of congestion, energy, environmental, economic and social objectives.

The measures in the urban chapter of the Freight Transport Logistics Action Plan are likely to result in a decline in motorised vehicle-kilometres (as fewer truck movements would be necessary), a decline in tonne-hours lost (as freight movement would be more efficient), a decline in the energy and environmental impact (as a result of the decrease in truck movements), a positive impact on the investment and competition indicators (as the efficiency

[68] http://www.tfl.gov.uk/roadusers/congestioncharging/6723.aspx.

[69] http://www.stockholmsforsoket.se/upload/Rapporter/Expert_group_summary_060621.pdf.

of businesses in cities is increased), a decrease in traffic fatalities and an improvement in the health impact of emissions (following the decrease in truck movements).

In the START project[70] Bristol City Council, in partnership with experts from DHL Exel, has been successfully operating a consolidation centre since May 2004 with the aim of helping to reduce pollution and congestion in central Bristol. Streamlining deliveries and cutting the number of vehicles delivering to the Broadmead shopping centre has helped achieve this, whilst at the same time providing an improved delivery service to retailers. The scheme has reduced delivery vehicle movements by 77%. This means a saving of 5 374 lorry trips equating to 106 556 lorry-kilometres with resulting reductions of 13.3 tonnes in CO_2 emissions, 426 kg in NOx and 12.8 kg in PM_{10}.

The EU could opt for a non-regulatory approach that could include information and guidelines and/or financial intervention. Both these instruments would have the above-mentioned impact, although it is most likely to be stronger in the case of direct public intervention. The risk of non-compliance is negligible.

Option 7: Internalise the external costs of urban transport

This policy option is intended to make travellers in urban areas pay for the full external costs that they impose on society. The external costs of transport include congestion, air emissions, noise and traffic fatalities. These external costs vary across locations, but are higher in areas with higher population density, typically urban areas. This policy option will make a positive contribution to mobility, congestion[71], energy, environmental and social objectives.

Charging for external costs has an impact on transport costs which in turn influences transport volume (trips, tonnes carried and passenger- and tonne-kilometres). This impact is expected to differ across modes which would change modal shares and lead to modal shift. In addition, this option will lead to a reduction in demand for transport, in energy use and in vehicle-kilometres. In the longer term, there might be increased demand for cleaner, safer and quieter vehicles.

Congestion charging is expected to have a strong impact on traffic flows. The extent to which demand for transport is reduced is determined by the price elasticity of demand. The percentage change in demand in response to a 1% increase in price is shown in the table below[72]:

	Short term	**Long term**
Fuel consumption (total)	-0.25	-0.64
Fuel consumption (per vehicle)	-0.08	-1.1
Vehicle-kilometres (total)	-0.10	-0.29
Vehicle-kilometres (per vehicle)	-0.10	-0.30
Vehicle stock	-0.08	-0.25

70 www.start-project.org.

71 The costs of avoiding congestion should be added to the direct costs of suffering congestion by adding a precautionary margin to the trip start and to the costs derived from the loss of reliability in the eyes of clients.

72 Goodwin, P., Dargay, J. and Hanly, M. (2003): Elasticities of Road Traffic and Fuel Consumption With Respect to Price and Income: A Review, University College London.

The social impact of this policy option includes the impact on mobility (slight change) and on health (decrease in accident rates).

A regulatory approach could be used by the EU, perhaps in combination with market-based instruments, to follow up current initiatives on internalisation of external costs in transport. One potential obstacle to compliance is the resistance from part of the public and businesses to increasing the cost of car use in certain places and periods. The availability and reliability of the ITS tools for vehicle location, registration and payment collection in urban areas is another cause for concern.

Option 10: Promote "green" procurement by public authorities

This policy option will make a positive contribution to energy, environmental and social objectives. Joint public procurement of "green" vehicles will also speed up replacement of vehicles operated by public authorities or by private operators under public service contracts. The objective of this policy option would be to bring potential buyers together in consortia so that lower prices can be obtained as a result of economies of scale. In addition, possible administrative barriers at national, regional or local levels to joint procurement would be overcome.

Experience in Stockholm[73] shows that the number of clean vehicles in the fleet does not automatically increase after introduction of a clean vehicles scheme. In Stockholm, the opposite happened when the municipal vehicle fleet was outsourced to a private leasing company in 2002 and vehicle purchasing decisions were decentralised. This resulted in a smaller share of clean cars in the municipal fleet.

In the CIVITAS-Trendsetter project the city of Stockholm reversed this negative trend by offering incentives for purchasing clean vehicles, introducing a joint procurement programme and arranging information activities and test-drives for procurement officers. By the end of 2005, Stockholm was operating 465 clean vehicles. This is 43% of the total municipal fleet. Among other things, this cut energy consumption by around 25% and also reduced CO_2 emissions and fuel costs for the biogas vehicles. Some 80% of the drivers are very satisfied. The disadvantage has been a 5% increase in maintenance costs, mainly because biogas vehicles need more maintenance and repair. Lille Metropole[74] has similar experience.

A variety of instruments could be used, for example dissemination of best practice or co-regulation. This policy option is likely to lead to fleet renewal, resulting in a larger share of environmentally friendly vehicles. These could be vehicles owned (or tendered out for) by local authorities, such as public transport vehicles, waste collection trucks, police cars and public works vehicles. The higher share of environmentally friendly vehicles in urban traffic is likely to result in energy savings and have a positive environmental impact. The competitive position of the EU industry is likely to improve.

Option 11: Promote take-up of clean and energy-efficient vehicle technology and alternative fuels

This policy option is in line with the EU's policy to increase the share of alternative fuels and reduce pollutant emissions from road vehicles. Cleaner technologies cost more. Market-based

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73 CIVITAS, http://www.trendsetter-europe.org/index.php?ID=585.

74 CIVITAS, http://www.trendsetter-europe.org/index.php?ID=959.

instruments, such as taxing fuels or vehicles or favouring use of cleaner fuels or vehicles, will have a direct impact on users. This option will have an economic impact on the vehicle manufacturing and servicing industries.

Other kinds of impact are on energy and on the environment. The cleaner engines may use less energy, but this depends on the type of fuel used. The environmental impact will clearly be a reduction in air pollutant emissions which will make a positive contribution to social (health) objectives. The impact on noise will be less certain, as this depends on the engine technology and a large part of the noise from cars is already caused by factors other than the engine. One source of uncertainty is the unpredictability about the market take-up of the engines and fuels.

Member States have national strategies and coherence between action at local, regional, national and EU levels must be ensured. The UK's national strategy for promoting clean vehicles and fuels includes a CO_2-linked company car tax and vehicle excise duty, three-year duty incentives for cleaner fuels, financial incentives for biofuels, grants for consumers and fleet operators and a Technology Fund to finance RTD.

For EU action a variety of instruments could be used, for example dissemination of information, market-based instruments, financial intervention (e.g. from the cohesion instruments or under State aid policy) or regulation (e.g. implementation of the proposed Directive on the promotion of clean and energy-efficient road transport vehicles).

Market-based instruments may have a direct impact on vehicle sales, as long as the tax changes are sufficient to counter-balance the price differences. In the car manufacturing and servicing industries, investment will have to increase to make the transition to different fuels and engines. It is not clear if this will lead to more employment in these industries. The competitive position of the car, bus and truck manufacturing industry in the EU is likely to improve against other countries. Obstacles to compliance are not likely.

Option 13: Harmonise rules for environmental zones

This policy option does not address the impact of environmental zones themselves, but only the impact of ending the separate and unrelated regulations that have emerged over the past across the EU. The EU could use a regulatory instrument. The objective of the initiative would be to ensure the use of harmonised rules for access and vehicle identification in all cities that have installed, or are considering, such a zone. This is likely to be a long process, as there would be many parties involved in a joint effort with the EU. This option would contribute to economic objectives and provide a stronger basis for policy-making.

One uncertainty would be whether every country would be interested in joining this process. Each national government would have to convince its cities to apply the harmonised rules. The ability to do so varies from one country to another. Resistance might come from cities that want to limit access for specific types of cars , e.g. SUVs, if there were no room for this in the harmonised rules. On the other hand, if the harmonised rules were to leave room for too many exceptions, this would defeat the purpose, as it would no longer be easy for non-regular

users to understand the rules. There would be lower administrative costs for users and governments[75].

The indirect impact is likely to be that, once the harmonised rules are in place, it would be easy for freight operators and non-regular visitors, i.e. principally those from elsewhere in the country and from abroad, to understand the rules on access to the environmental zone. This would save time and costs for those visitors, for cars and for freight trucks.

The main impact of any EU initiative would, however, be political. It would send out a signal that the EU is serious about the internal market and the free movement of people and goods.

Option 14: Improve the interoperability of ticketing and payment systems for public transport

The objective of this policy option would be to make it easier to combine private and public modes of transport (for example, car or bicycle with public transport), to use the services of different operators or to understand how the transport system works in different cities and even in different Member States. This option targets private and professional users of the transport system. This policy option will make a positive contribution to mobility, congestion, economic and social objectives.

Improved interoperability would increase the accessibility of public transport, in terms of both geographical range and ease of use by travellers currently finding it difficult to use the system. Car kilometres will be replaced by public transport which will reduce the number of motorised vehicle-kilometres. This can have a positive impact on congestion. Energy consumption and emissions will also be reduced. However, some of today's non-motorised trips could also be attracted to public transport.

One economic benefit of modern interoperable systems is that they significantly reduce the costs associated with ticketing, payments and handling cash. Development of the ITS systems needed is likely to improve the competitive position of European industry against the rest of the world.

A variety of instruments could be used, but the most promising direction would be a regulatory approach (standards). One uncertainty, and possible obstacle, lies in the complexity of implementing ITS projects involving many stakeholders. Involvement of the stakeholders from the beginning would ensure better take-up of the results.

Option 15: Improve harmonisation and provision of travel information

This policy option is intended to make public transport more attractive and improve its integration with other modes. It should follow a user perspective and pay particular attention to the changing expectations of society caused, for example, by ageing and an increasingly multi-cultural population. This policy option will make a positive contribution to mobility, congestion and social objectives.

The difficulty of finding one's way around the public transport system is one of the principal causes for the negative image that public transport has in the eyes of many car users. This is

[75] One specific problem is the limited possibility for cross-border enforcement by local authorities in the event of traffic violations related to environmental zones and other zones with access restrictions.

particularly the case when services are disrupted. Finding one's way in an unknown city by car has been made easier by in-car navigation systems. Public transport cannot yet match these systems with a user-friendly alternative.

The primary impact of providing travel information is to enable individuals to plan their trips better and make coordinated use of different modes. The result is to optimise the transport chain by making use of the best-suited mode for each leg of the journey. Estimates suggest that providing harmonised travel information could increase the average throughput capacity of road infrastructure by 3% to 7%, increase its overall capacity by 3% to 22%, decrease accidents by 3% to 30% and reduce travel time by up to 20%.

Different instruments could be used, including information and guidelines, co-regulation and a regulatory approach. One possible obstacle might be that implementing ITS projects may involve many stakeholders. For non-regulatory instruments this risk is negligible. Involvement of stakeholders from the beginning would ensure better take-up of the results.

Option 19: Promote integrated planning for urban mobility and transport

This policy option covers a range of measures, including public-transport-oriented land-use development, short-distance structure land-use development and car-restricted oriented development. The direct impact of these measures would be to transform land-use patterns and transport networks and services. More indirect kinds of impact, depending on the measure chosen, would be a decline in (the growth of) motorised vehicle-kilometres and an increase in non-motorised kilometres. The reason is that the need for car trips would diminish and a shift towards environmentally friendly modes could be expected.

This option will make a positive contribution to a wide range of mobility, congestion, energy, environmental and social objectives. It will also provide a better basis for policy-making. The EU should follow a non-regulatory approach, which could include coordination and networking.

All social groups in urban areas could be affected, but the degree would depend on the exact development plans. The economic sector most affected will be the one most present in urban areas, i.e. the tertiary sector. Retail businesses that rely heavily on greenfield shopping malls (this is more pronounced in some Member States than in others) may find it necessary to adapt their distribution systems. Others may not be affected much. The impact could be essentially local, with usually a limited impact in other countries[76].

The measures will result in a decrease in (the growth of) congestion. Fewer passenger-hours and tonne-hours are likely to be lost, allowing households and businesses to save time. One indirect impact could be that some of the time gained will be used to visit destinations farther away, thereby nullifying part of the positive impact.

The measures are likely to result in a decrease in (the growth of) energy consumption. The shift towards non-motorised modes will result in a decrease in energy consumption. The impact on emissions of air pollutants will vary in the same way as energy consumption, all other things being equal. The impact on noise is less clear as this will depend very much on

[76] One exception could be the impact of the Øresund Bridge on the development of Malmø and Copenhagen.

local conditions. Fewer vehicle-kilometres mean less noise but higher densities lead to greater noise exposure per vehicle-kilometre.

The impact is likely to be strongest on social groups who live (or want to live) in peri-urban areas. This includes an improvement in social inclusion, as potential destinations for activities will be closer. Dwellers in densely populated areas are not likely to experience much difference, except that the quality (frequency and speed) of public transport could also improve for them. The number of traffic fatalities could decrease.

One uncertainty is introduced by the 5–10 year time span before the impact of changes in land-use patterns becomes visible. These changes usually take more than one election cycle to complete. Continued awareness of the problems and a consensus among politicians and voters can help reduce this uncertainty.

Option 20: Improve coordination between urban mobility and land-use planning

One trend in European urban areas is that new developments often take place on the outskirts of cities. Often they are only connected by road and lack good public transport links. In many cases their layout and density make cycling unattractive. This makes the car the only viable means of transport. In addition, developments on the periphery result in longer travel distances. Finally, there is a trend to concentrate shops and services in malls located on the outskirts. This in turn stimulates car use. The overall result is more and longer car trips and fewer possibilities for non-motorised transport.

Requiring new developments explicitly to consider and plan for alternatives to the car would help to reduce dependence on the car as the primary means of transport. This would result in fewer private kilometres and more non-motorised and public transport passenger-kilometres. The reduction in private kilometres will have an impact on the level of congestion and have a positive impact on energy consumption and the environment (emissions of air pollutants and noise). Provision of viable alternatives to the car can also contribute to social inclusion of citizens who either do not own or do not want to use a (second) car. It will also provide a stronger basis for policy-making.

Closer coordination between land-use and transport planning has the potential significantly to reduce per capita energy consumption and emissions of pollutants by reducing per capita vehicle travel[77]. Communities that are high-density, have mixed land use, cluster centres of activity, implement parking management policies, have a high level of street connectivity, have good access to public transport and provide facilities for cycling and walking have, on average, 20% to 40% less car use than more auto-centric cities[78].

The EU should follow a non-regulatory approach for this policy option. The strong market forces in the real estate sector and the shortage of adequate housing in many European cities are two possible obstacles to this policy option.

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77 Mindali, O., Raveh, A. and Salomon, I. (2004): Urban density and energy consumption: a new look at old statistics, Transportation Research, Vol. 38, No 2, pp. 143-162.

78 Litman, T. (2007): Evaluating Transportation Land Use Impacts, Victoria Transport Policy Research Institute.

Option 21: Strengthen the rights and obligations of users of public transport

This policy option addresses public transport operators and users. It will make a positive contribution to mobility and social objectives. The obligation to provide compensation if operators fail to meet the agreed standards may help to strengthen the image of public transport and improve public transport services. If this were to happen, the effect is likely to be greater use of public transport and some decrease in car use (with the associated impact on congestion, energy and the environment). Also some shift from bicycle use to public transport can be expected. Introducing stricter rules for users may lower vandalism-related costs for operators.

A variety of instruments could be used by the EU, including monitoring self-regulation. The impact is likely to be small, though, as many other factors play a role in opting for public transport. The improvement in the quality of public transport would also have a positive impact on social inclusion. One potential obstacle to compliance is resistance from the public transport operators and also from the contracting authorities, who would ultimately bear the costs of the compensation.

Option 22: Improve accessibility of public transport

This policy option aims at improving both the geographical coverage of public transport and ease of use by travellers who find it difficult to use the system (for example, passengers with luggage, small children or a physical disability), as part of an integrated approach to achieve a more accessible urban transport system. This policy option will make a positive contribution to mobility, energy, environmental and social objectives.

The option will attract new users to the system. The strongest impact is on social inclusion and mobility. Some kilometres by car will be replaced by public transport (which is also motorised), but as public transport vehicles have higher occupancy, the number of motorised vehicle-kilometres and congestion will decrease. Also, energy consumption and emissions will be reduced. However, some of today's non-motorised trips could also be attracted to public transport (this effect being stronger in cities where bicycles take a high share than in those with a low share).

A variety of instruments could be used by the EU, but the most promising direction is a regulatory approach. Increased coverage would mean that public transport supply would increase. The public transport network would also become more accessible for people with reduced mobility, which could for example mean using appropriate equipment for physically disabled persons, addressing the specific needs of cognitive and sensory disabled persons, and providing special services for elderly and disabled persons. Direct financial intervention by the EU would probably have a direct effect. But coordination between Member States or regulation at EU level would have to be ensured first.

One potential obstacle could be insufficient funds. There is a risk of failing to meet travellers' expectations due to the long transition period. Reasons for this long transition phase are, for example, that public transport vehicles are replaced over long periods and interchange facilities will have to be adapted at relatively high prices.

Option 24: Promote safe walking and safe cycling

Walking and cycling are two separate modes of transport. Each of them has its own strengths and weaknesses and has different potential. This policy option would encourage authorities to create safer conditions for walking and cycling. If such improvements were to be made, the strongest impact would be on mobility. In particular, it would result in an increase in non-motorised kilometres. This option would make a wide range of positive contributions to mobility, energy, environmental and social objectives and would also make a positive contribution to congestion by reducing motorised vehicle-kilometres.

An increase in the number of people cycling and walking can be achieved by means of targeted marketing campaigns. However, long-term behavioural change is only possible with the aid of an integrated programme to improve the infrastructure for non-motorised road users, financial incentives and adequate facilities at the end of the trip (for example, showers and changing rooms). A study estimated that this package to stimulate cycling could increase cycling rates for commuting trips in the UK from 6% to almost 20%[79].

Recently, an advertising company introduced a system in Paris that offers anyone who wants to use a bicycle the opportunity to do so for a nominal fee. According to one source, provision of bicycles at various points in the city combined with a marketing campaign (and some problems with public transport) increased the number of cycle trips in Paris from 0% to 3% in one year.

Given that most bicycle trips and walks are over short distances, i.e. under 7 km, the effect of any increase in non-motorised kilometres on vehicle-km is unlikely to be very large. However, a small decline in vehicle-km (and short-distance trips) has a disproportionately large impact on the volume of emissions of harmful pollutants. The reason is that starting and stopping engines causes relatively high emissions. Each 1% shift (in kilometre terms) from motorised to non-motorised transport reduces energy use and emissions by between 2% and 4%[80].

There would be a positive impact on health as a result of lower obesity and pollution levels. As for road safety, the presence of more bicycles on the roads makes car drivers more aware of them and therefore also more careful. Moreover, development of dedicated infrastructure for non-motorised modes can contribute to reducing the number of conflicts and, hence, the number of accidents and traffic fatalities. The results of an extensive study[81] suggest that the risks of an accident while riding a bicycle are far outweighed by the health benefits, at least for commuters who regularly cycle to work.

The EU should follow a non-regulatory approach. This means that the risk of non-compliance is negligible.

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79 Wardman, M., Tight, M. and Page, M. (2007): Factors influencing the propensity to cycle to work, Transportation Research, Vol. 41, Issue 4, May 2007, pp. 339-350.

80 Litman T., Victoria Transport Policy Institute (2007): Walking and Cycling Encouragement, Strategies that Encourage People to Use Non-motorised Transportation, Transport Demand Management (TDM) Encyclopedia.

81 Anderson, L. B. *et al.* (2000) All-cause mortality associated with physical activity during leisure time, work, sports and cycling to work, Archives of Internal Medicine, Vol. 160, No 11, pp. 1621-1628.

Option 26: Improve data harmonisation, collection, validation and reporting

This policy option has one kind of impact, namely providing a stronger basis for policy-making at all levels of government. A wider range of higher quality data and information can contribute both to better informed decisions relating to the objective of sustainable mobility and to implementation thereof (with the aid of monitoring). In the longer term an initiative at EU level can also help to lower costs by reducing fragmentation in use of resources.

A range of instruments could be used at EU level, including coordination, financial intervention and/or regulatory action. The extent to which the quality and availability of data will improve depends on the scale and scope of the exercise, the funds made available to support it and how clearly the data requirements are formulated.

There are two potential obstacles to compliance. First, local, regional and national circumstances differ across the EU and, thus, the data requirements for policy-making are also likely to differ. And second, local, regional and national governments with economic problems are unlikely to be able to find the necessary resources. These obstacles need to be taken into account when selecting the instrument.

Option 27: Improve dissemination of knowledge and best practice

This policy option has one kind of impact, namely providing a stronger basis for policy-making at all levels of government. Improving dissemination of knowledge and best practice can contribute to better informed decisions related to the overarching objective of sustainable mobility. In the longer term an initiative at EU level can also help to lower costs by reducing fragmentation in use of resources.

The EU should follow a non-regulatory approach for this policy option. Direct public-sector intervention is likely to facilitate involvement of stakeholders. This option has no impact on specific groups, nor are there any obstacles to compliance. It is difficult to predict the impact, given that use of the knowledge and best practice is not mandatory.

An ambitious approach should be followed in terms of the size and profile of this option in order to address the needs and promote use by as many potential users as possible. Ensuring the active participation of users, promoting networking between them and offering users individual support and tools to prepare the take-up of knowledge or best practice will increase the likelihood that the information disseminated will actually be used for policy-making and lead to implementation.

Option 28: Intensify research, development and demonstration activities

This policy option has one kind of impact, namely providing a stronger basis for policy-making at all levels of government. Intensifying research, development and demonstration activities can contribute to better-informed decisions related to the overarching objective of sustainable mobility and to implementation thereof. In the longer term an initiative at EU level can also help to lower costs by reducing fragmentation in use of resources. The results of research, development and demonstration activities can contribute to reducing congestion, improving energy efficiency and reducing the environmental impact of transport.

For example, RTD on applications of urban ITS (intelligent transport systems) can help to reduce congestion by increasing the capacity of existing transport infrastructure in urban areas. RTD on new public transport concepts can help to make public transport more

attractive. RTD on transport propulsion technologies can help to make automobiles more fuel-efficient and RTD on alternative fuels can help to reduce emissions of harmful pollutants.

Estimates suggest that the fuel efficiency of passenger cars can be improved by between 40% and 50% by 2030 by means of technological improvements to engine and drive-train technologies[82]. Second-generation biofuels based on wooden biomass or organic waste have a CO_2 reduction potential of almost 90%. For both first- and second-generation biofuels the CO_2 reduction costs are a few hundred euros per tonne of CO_2[83].

RTD activities in the area of vehicle design can help to make vehicles safer and thereby reduce traffic fatalities in urban areas. Policy-related RTD in the field of urban mobility and transport, usually involving local authorities in research and demonstrations, can help to assess policy tools and identify solutions to overcome barriers to implementation. This option should be implemented with the aid of financial intervention.

In the long run, increasing RTD activities in the field of urban mobility and transport can contribute to increasing the competitiveness of the EU as a whole. For example, it can contribute to the global competitiveness of the EU industry in the field of intelligent technology or public transport vehicles. Direct public-sector financial intervention can be justified for activities that would find it difficult to attract commercial funding because they are too risky or for policy-related RTD where the results are of interest mainly to policy-makers and not to stakeholders with commercial interests.

However, there are few guarantees that the results of the RTD will actually be used. This influences the effectiveness of this option. This obstacle can be overcome by ensuring active involvement of users and good dissemination of results.

Option 29: Promote awareness and behavioural change, including eco-driving

Modal choice, travel behaviour and driving style influence energy consumption and emissions. These can be influenced by awareness-raising activities and information and marketing campaigns. This policy option will make a positive contribution to energy, environmental and social objectives (road safety). It will also help to provide a stronger basis for policy-making.

One example is promotion of eco-driving. This is a particularly promising concept to promote to road transport users, taking into account the high fuel prices. Eco-driving leads to no perceptible loss of travel time and, therefore, is not likely to have an impact on mobility. The direct impact is a clear decline in energy consumption per vehicle-kilometre, causing a decline in emissions of air pollutants and noise. No clear economic impact is likely and there will be no change in administrative costs. The social impact will be that a more defensive driving style is likely to lead to a decrease in traffic fatalities, while the decrease in emissions is likely to improve the impact on health.

Another example is provision of information related to modal choice via social marketing campaigns. Well designed campaigns can influence both the attitudes and the intentions of the target group. Patterns of car use, walking, cycling and public transport use can be changed by

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82 Smokers, R. T. M., den Boer, L. C. and Faber, J. F. (2007): State of the Art CO2 en Mobiliteit, input voor gezamenlijk adviesproject van Raad V&W, VROM-Raad en AER.

83 Ibid.

awareness campaigns combined with other initiatives[84]. In specific cases, the reduction in urban car traffic has been estimated in the range of 5% and in work-related car traffic at above 10%[85]. The costs of achieving this reduction would be 0.2 to 3.2 eurocents per car-km[86]. While these figures are not representative, they give an indication of what is achievable.

For this policy option the EU could use a variety of instruments, including financial intervention, information, guidelines, coordination and/or a regulatory approach. The obstacles to compliance are related to the instruments. For non-regulatory instruments this risk is negligible.

Option 30: Promote investment in integrated urban transport, including public transport

The urban mobility system must be seen as an integrated system that consists of the users of different transport modes, the interfaces between modes, the infrastructure of each mode and the services and systems that allow the mobility system to function – such as information, management and payment systems. This policy option aims at promoting investment in urban transport, with special emphasis on public transport.

Investment in urban transport, notably in the new Member States, has been recognised as important by many policy-makers. This option will have a positive impact on mobility, congestion, energy consumption and the environment. The kinds of impact can include a modal shift towards public transport, away from the car but also from non-motorised modes (mainly cycling). In cities in which cycling does not have a large share (as is the case in most cities in the new Member States) this impact would be limited. Funding will also stimulate urban regeneration (which can include measures to increase density), infrastructure-upgrading and fleet renewal.

The improvement in access to public transport will be the most important, but there will also be an improvement in social inclusion as travel opportunities increase. A decrease in traffic fatalities will be achieved, along with improvements in the impact on health, as car traffic decreases.

There is a clear relationship between provision of public transport, the population density of a city and the cost of transport. The higher the density in a city well served by public transport, the lower the cost of transport. Conversely low-density cities lacking good public transport spend a higher share of their GDP on transport. This difference is estimated at €2000 per year per city resident for cities with well developed public transport and infrastructure for alternative modes of transport[87]. Translated into energy consumption, the difference in energy consumption between high-density European cities with good public transport and sprawling American and Australian cities can range from 14 000 megaJoules to over 18 000 megaJoules per person, per year[88].

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84 Cairns, S., Sloman, L., Newson C., Anable J., Kirkbride, A. and Goodwin, P. (2005): Smarter Choices – Changing the Way We Travel, Department for Transport (DfT), London.

85 Ibid.

86 Ibid.

87 UITP (2005): Mobility in Cities Database.

88 Ibid.

On congested roads, even a small reduction in traffic volume can significantly increase traffic speeds. For example, on a highway lane in the USA carrying 2 000 vehicles per hour a 5% reduction in traffic volumes will typically increase traffic speeds by about 20 miles per hour and eliminate stop-start conditions[89]. The role of the EU could either be financial or consist of providing information or guidelines. The uncertainties and the obstacles to compliance will be small.

[89] TRL (2004), The Demand for Public Transit: A Practical Guide, Transportation Research Laboratory, Report TRL 593 (www.trl.co.uk).