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INLAND TRANSPORT COMMITTEE

Working Party on Transport Statistics
(Fifty-first session, 24-26 October 2000,
agenda item 5(b))

FINAL REPORT

**Task Force on Sustainable Urban Transport Indicators
(28-29 March 2000, Barcelona)**

**Organized by the Institut d'Estudis Territorials (IET)
and the Autoritat del Transport Metropolità de Barcelona (ATM)
in cooperation with the United Nations Economic Commission for Europe
(UN/ECE)**

BACKGROUND AND MANDATE

1. The first meeting of the Task Force on Sustainable Urban Transport Indicators was convened at the request of the UN/ECE Working Party on Transport Statistics (WP.6) at its fiftieth anniversary session (17-19 November 1999), which was devoted to the theme of **Indicators for Sustainable Transport**. The aim of the Task Force, as stated by the Working Party, was to “harmonize a set of basic indicators on sustainable urban transport, as well as to examine the related definitions used in this field” (TRANS/WP.6/137, paras. 23-25).

2. The organization of a Task Force was the result of previous years' efforts on the part of WP.6 to obtain more comprehensive and reliable statistics on urban passenger transport (see document TRANS/WP.6/2000/3 for an overview of this work). In addition, the

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convening of the Task Force was part of the work of WP.6, a **Lead Actor** in carrying out follow-up work on the Programme of Joint Action adopted by the UN Regional Conference on Transport and the Environment (November 1997, Vienna). The Agenda for the Workshop is attached as annex 1, and the List of Participants can be found in annex 4.

METHOD OF WORK OF THE TASK FORCE

3. The Task Force decided to approach the topic by first determining the **Policy Objectives** in the area of Sustainable Urban Transport, and then, on this basis, to identify **relevant indicators** that could be used in monitoring, measuring and reporting on progress made toward those objectives. The attached annex includes the Policy Objectives determined by the Task Force, as well as a list of Relevant Indicators of progress made toward those agreed objectives. The results of the Task Force were transmitted to the Joint Meeting on Transport and the Environment (6 June 2000), and will be submitted for consideration and follow-up work to WP.6 on its fifty-first session (24-26 October 2000).

INTRODUCTORY REMARKS

Institut d'Estudis Territorials (IET), Barcelona

4. The meeting was opened by Mr. Albert Serratosa, President of IET and Mr. Francesc Xavier Ventura, General Director of the Metropolitan Transport Authority (ATM) of Barcelona. Mr. Serratosa illustrated with slides the evolution of changes taking place in the urban environment, underlining, in particular, the lack of relevant indicators to measure sustainability. He cited also the problem of **harmonized terminology**, noting especially the lack of an international working definition for "metropolitan area" or "regional authority." Both of these terms could mean many things, depending on whether one is referring to a town, a city or a metropolitan area; a territory such as Catalonia; an assembly of bordering regions, peripheral regions, Swiss cantons, German lander, etc.

5. He said, moreover, that statistics and indicators refer to different levels, conurbations, or urban galaxies, and that it was important to define divisions at urban and regional levels, using indicators as clues to define the problem. Regarding urban density, less than 60 persons per hectare is still considered rural, but after 300 persons per hectare there is already congestion toward degradation, with the concept of "city" only covering a small part of the total unit.

Autoritat del Transport Metropolità de Barcelona (ATM)

6. Mr. Ventura of the ATM expressed his support for the convening of the Task Force, saying it coincided with the third anniversary of his organization. The ATM was responsible for coordinating transport in the Barcelona area, including public and private bus companies, trains and metros. These services are provided through a consortium that is currently undergoing an ambitious reorganization. One of the aims of the restructuring is to increase the availability of the subway, improve subway stations and to develop a **seamless public transport system**, as well as the development of a comprehensive public transport plan that can handle all these activities with given resources. For this undertaking, appropriate

indicators are important to evaluate planning needs. There is a great need for parameters that are standardized, having common parameters used in other regions to avoid making the same errors and to benefit from common experiences. But, he pointed out, statistics are only useful if they can stand the test of time and are accurate.

UN/ECE

7. Ms. Brinda Wachs of the UN/ECE, Transport Division underlined the work being carried out at her organization on the harmonization of urban transport statistics at the international level. She said that the UN/ECE's Inland Transport Committee (ITC), through the Working Party on Transport Statistics (WP.6), in cooperation with Eurostat, European Conference for Ministers of Transport (ECMT) and the International Union of Public Transport (UITP) had been working in the area of urban passenger transport statistics since 1996, and had developed a **Pilot Questionnaire on Urban Passenger Transport**. The Pilot Questionnaire, which asks ECE member countries for data on metros, trams, buses and taxis, will be sent out as an Appendix to the Common Questionnaire on Transport Statistics for the first time in September 2000.

8. In addition, she said that the Committee on Environmental Policy and Committee on Human Settlements had convened a steering group, under the Environment for Europe process on **Urban Transport Patterns and Land-Use Planning**. Based on the results of the first meeting (4-5 May 2000, Lyon), the Steering Group was expected to develop a detailed work programme to promote environmentally sound local transport integrated with sustainable land-use planning. Both of the above activities would contribute to ECE's contribution to the follow-up to the **United Nations Regional Conference on Transport and the Environment** (1997, Vienna).

European Commission

Statistical Office of the European Communities (Eurostat)

9. Mr. Graham Lock of Eurostat noted that the work of his organization on urban statistics showed that there was less of an increase recently in car ownership except in urban areas, despite policies specifically targeted toward decrease in car usage. He said that 80% of inhabitants in Europe lived in cities. He described the internal network devoted to sustainable development at the European Commission including Eurostat and the European Environmental Agency, noting that there were several levels of urban statistics in Eurostat's database, e.g. urban population, metros and light rail (national statistics which are actually aggregated urban statistics), and the **Dobris Statistical Compendium on Environment**, including an urban chapter (every five years).

10. He noted also work under way on an "**Urban Audit**," including air quality data. The urban concept followed in the Urban Audit was how to define "urban" in the best way for statistical purposes. It was found that the administrative level of the city works well. The Urban Audit looked at both wider than the city level (hinterland, outlying areas), as well as less wide, such as the sub-city level. The Audit includes data from 58 EU cities covering 15% of the total national population of the European Union. For each exercise, it was noted,

different sources were used, and data was submitted according to different definitions. In addition, data quality was unknown. Eurostat would like to encourage the collection of urban data and the effort to find harmonized definitions. However, we must first clarify concepts: are we only interested in travel within the city? Or also in origin-destination data in and outside the city? Are we only focusing on passengers? Or also freight? Only journeys, or trips? etc.

DG TREN

10. Mr. Richard Deiss of the European Commission (DG TREN) explained the perspective of the European Commission. He said that DG-TREN (Directorate-General for Transport and Energy, formerly DG-7) was a user of data - not a primary producer of data, collecting data and making it available. He said that data issues became especially important after the liberalization of the transport market. The EC was now focusing more and more on policies to make transport sustainable, increasingly also at the local level, since local (urban) transport has a strong impact on the environment. He noted the current updating of the White Paper of 1992 on the Common Transport Policy, expected to be available by end-2000 and cited specific policy goals of the Commission. Regarding safety issues, he said that the goal was to reduce the current annual 40,000 fatalities in the European Union. Regarding mobility in urban areas, he said there needed to be a shift in the demand for public transport to reduce congestion.

11. He said that looking at preliminary bicycle figures showed us how important it is to have good data at the city level. He added that EC priorities for urban transport data included information on the modal split for the whole urban area; indicators on congestion, and emissions of pollutants. He referred to the Kyoto targets for reducing emissions 8 per cent by 2012 for 6 greenhouse gases, citing the importance of paying attention to emissions in urban areas. He noted, moreover, the Green paper on the Citizen's Network and the follow-up to the Benchmarking initiative, a pilot project of whose results are available on the Internet under **ELTIS**, and described the auto-oil project. He cited also the forthcoming **Green Paper on "Cleaner Urban Transport"** which underlined the importance of public transport and accessibility to it by all social groups.

12. Mr. Nikki James, a consultant with OGM in Brussels explained that in the DG Tren **Citizen's Network Benchmarking Initiative** (co-ordinated by OGM), 15 cities were selected to test the feasibility of comparing urban mobility networks despite differences in size and structure. From an initial 130 proposed indicators, 38 were chosen as providing the most useful information, as well as being those for which most cities were able to supply data. The most informative indicators were those that gave a picture of the trends in mobility patterns in each city, by comparing the modal split 10 years ago with the present situation.

13. In the second phase of the project, participants agreed on four topics, through site visits to localities already successfully achieving high performance in the area of the topic chosen. These included: "marketing strategies that can induce car users to switch to sustainable forms of transport for some or all of their trips" and "how to upgrade bus services so that they have the same power to attract users (including those with cars

available) as tramways. As a result, many of the participating cities have adopted new practices along the lines of those visited. A follow-up project is planned for July that will involve up to 60 cities and regions in Europe. It is intended that the follow-up will develop some additional indicators, to include in particular, the citizens experience of their mobility networks, value for money in transport provision, and environmental indicators.

14. She also described a project referred to as BEST (**Benchmarking European Sustainable Transport**), a thematic network under the EU's 5th Framework Program which began on 1 May 2000. The project is comprised of six high level conferences that will address: the state of the art in benchmarking in all sectors and the transport sector; benchmarking criteria and indicators; benchmarking methodologies; the possibility of benchmarking transport policy, and a final open conference to disseminate the results.

Experience of ATM in the Processing and Treatment of Data;

by Mayte Capdet and Jordi Prat, ATM, Barcelona

15. The representatives of ATM explained that their organization had been involved with the reviewing of the cost of public transport for citizens, as well as the functioning and use of the system in a sustainable way. The geographic region (around Barcelona) was made up of seven counties. ATM was established as a mobility observatory, and had conducted a study on mobility in 1996, comparing public vs. private transport, surveys of trips, information on infrastructure, and income in public transport, including trips by the metropolitan rail company and main national rail at the local level. They said that data was important both for inter- and intra-urban transport, such as the average cost of a ticket, the differences in costs for elderly, handicapped, income from sales, costs of advertising for buses, etc. Data is collected directly from operators or local administrators, who transmit data to ATM every three months, although data from private companies is difficult to obtain. ATM is currently expecting the results of a survey it carried out in the Barcelona region, including pedestrians, public and private transport, as well as external impacts, such as noise, pollution, emissions and congestion.

16. They underlined, moreover, the fact that a journey or trip is counted in many different ways, and said it was important to include pedestrian journey and to adequately define terms. The TMB is developing a dictionary, trying to standardize their research methodology, and carried out an important mobility survey of 25,000 people and their movements within one week (covering 300 million journeys or trips).

Transport Indicators in Regional and Town Planning and the Concept of Metropolitan Area: Francesc Carbonell, IET Barcelona, Andreu Ulied, Andreu Esquius and Enric Cañas, MCRIT Barcelona

17. Mr. Francesc Carbonell of IET underlined the importance of considering policy objectives and the availability of data, before determining the appropriate indicators. He introduced SIET, a policy-oriented integrated land-use transportation model, allowing interface of data and inputs (supply, pricing, tariffs) and socio-economic data (demographics, GNP, etc). SIET is an interactive software, using GIS for spatial analysis and assessing environmental impacts. For purposes of analysis, he emphasized the

importance of integrating the territorial and geographic aspects of transport data, as well as the importance of interurban and regional data: "You can't manage what you can't measure". He said both qualitative data as well as quantitative data was necessary, and indicators are an essential part of both.

NATIONAL REPORTS ON URBAN TRANSPORT STATISTICS AND INDICATORS

(a) Proposed definitions for statistical purposes; Olga Katslova, Ministry of Transport, Czech Republic

18. The representative of the Czech Republic said that urban transport in her country far exceeds other modes. The urban transport system is ensured by municipal authorities and financed through their budgets. Integrated transport systems are financed by regional authorities, and public service obligations are supported by the present Government and subsidized by the State budget, taking into account environmental implications. Regarding Statistics on Public Transport in the Czech Republic, organization of statistical surveys has been extended to include regular bus transport and urban transport services, including economic information and information on energy consumption on a quarterly basis. The Ministry of Transport proposed definitions in four areas: infrastructure, transport equipment, traffic and transport, following the structure of the Glossary for Transport Statistics. As the Task Force did not have time to consider the definitions for indicators on sustainable urban transport, the Czech Republic proposed a follow-up meeting on Definitions in spring 2001 in Prague.

(b) Urban and Public Transport Statistics in Hungary; Ivan Helcz, Ministry of Central Statistical Office, Hungary

19. The representative of Hungary said that the priority for his country was to have efficient and market-oriented transport services. To combat emissions and noise pollution, good organization of transport networks was necessary, including parking facilities, bus stations, etc. There was, moreover, a recognized need to make public transport more attractive. Key aspects of achieving sustainability include: effective parking control, availability of public transport and assuring financial viability of public transport companies through subsidies. Hungarian transport policy includes the goal of a more attractive fee structure for public transport. Specific objectives of Budapest (10 million people) include 3 major public transport operators; BKB, Budapest public transport, is focused on improving its level of service, economic impacts, and financial impacts.

(c) Urban and Public Transport Statistics in Sweden; Lennart Thörn, Swedish Institute for Transport and Communications Analysis (SIKA)

20. The representative of Sweden noted the restructuring of Statistics Sweden, which has been broken down into twenty-five different branches. He described a current project on improving statistics on public transport. The database would include school travel, tourist traffic and transport for handicapped people, at both the local and regional levels. This would include also information on infrastructure, traffic, transport, economy, safety, by

different user category (school children, elderly, handicapped) and categorized by production and consumption. All variables in the system must be classified, moreover, by mode as well. Transport Policy in Sweden has been addressed every tenth year, since 1960. The last review, in 1988, produced a framework for transport based on what human beings and enterprises can support over the long term; what is socially and economically sustainable over the long-term; and increasing the welfare of individuals and environmental quality. Moreover, the Swedish Government gave a mandate to SIKa to formulate short-term objectives linked to these long-term objectives. The long-term objective for safety was a target of less than 400 people killed by 2002.

(d) Urban and Public Transport Statistics in the United Kingdom; Mike Haslam, Department of the Environment, Transport and the Regions, United Kingdom

21. The representative from the United Kingdom said that while Transport Policy in the United Kingdom was not specifically targeted toward urban transport policy, it aimed to reduce the environmental impact of transport, while allowing access to transport and leisure (and to reduce the need for transport), and to improve choice. A new publication called **“Quality of Life Counts”** included indicators for sustainable development in the United Kingdom. This included 15 headline indicators, one of which related to transport: road traffic from 1950-1998. For the United Kingdom, a core set of indicators on sustainable urban transport would include: passenger travel by mode; how children get to school, average journey length by purpose, traffic congestion, distance travelled by purpose and access. Regarding local transport plans, it was important to identify objectives and then decide what data was needed.

Indicators for Sustainable Transport, Richard Gilbert, Centre for Sustainable Transportation, Toronto, and consultant to the OECD, Paris

22. Richard Gilbert described two projects he is associated with. The Sustainable Transportation Performance Indicators (STPI) Project is being conducted by the Centre for Sustainable Transportation. Its purpose is to develop a short list (10) and a very short list (3) of indicators that can be used to assess progress towards or away from sustainable transportation. The method is to deconstruct the Centre’s definition of sustainable transport into 17 elements, to operationalize each element as one or more indicators, and to rationalise and synthesise the extended set into the two short sets of STPI. The OECD project, known as the Environmentally Sustainable Transport (EST) Project, involves nine Member countries. It seeks to define, envision, and develop instrument packages for the attainment of EST. Six criteria were selected as the minimum number required to characterise EST and allow for recognition of its attainment. They concerned noise, land use, and emissions of carbon dioxide, nitrogen oxides, volatile organic compounds, and particulates. For the most part, when the criterion for CO₂ is met (80 per cent below 1990 levels by 2030), the criteria for the other emissions are also met. However, meeting the criteria for noise and land use requires separate attention. The EST Project is a backcasting exercise: actions are proposed in relation to a desirable future rather than an undesirable present.

Driving force-Pressure-State-Impact-Response model; European Commission/Eurostat/European Environment Agency

23. Mr. Graham Lock of Eurostat explained the notion of the **D-P-S-I-R model**, a useful way to group indicators on sustainable development. He said that the ways of monitoring progress toward sustainability required a unique approach. When Canada, the Netherlands and the United States developed their national environmental plans with environmental performance indicators, in cooperation with Anderson Consulting, this was a first effort toward developing indicators on sustainable development. The DPSIR model, developed by Canada, and used by the OECD, Eurostat and the UN Committee for Sustainable Development (CSD), breaks down indicators into five types: **Driving Force, Pressure, State, Impact and Response**.

24. While the model has been used in different ways, in general, Driving Force indicators invoked basic sectoral trends, such as energy generation, transport industry, agriculture, tourism and could involve economic and production data. Pressure indicators are human activities directly affecting the environment, e.g., carbon dioxide or methane emissions. Examples of Pressure indicators were waste and emissions; use of natural resources, including land. State indicators are “what you can measure,” observable changes in the environment, the physical state, the biological or chemical state, and ecosystems, such as rising global temperatures. Impacts are the effects of a changed environment, and involve the things society worries about: biodiversity, habitats, etc., such as decrease in agricultural production, hurricanes, floods, and affects on human health and safety. Response indicators are those reflecting responses of society to solve the problem e.g., research in solar energy, energy taxes, etc.

25. This model has been used both by the United States’ Environmental Protection Agency (EPA) and in the TERM project of the European Environment Agency. Admittedly, it was difficult to find indicators for spatial planning and accessibility (e.g., vehicles per household; population within 500 meters of a public transport station). Richard Gilbert of CSD said that the OECD too had problems with selecting appropriate indicators for spatial planning and accessibility, and the Task Force stressed the need for better indicators in these areas.

26. Mr. Francesc Carbonell of IET said the key question is the relationship between sustainability and urban form. He said we needed to speak not only about indicators, but also about the city, such as urban density, and the appropriate transportation means to serve the city. Regarding sustainable cities and sustainable transport, we must remember not only to balance the three legs (social, environmental, economic), but also to speak about freedom (of citizens) and choices (such as transportation choices), both which reflect the kinds of cities we can offer people.

27. Mr. Seratosa pointed out the importance of considering time spent commuting. He said it was useless to work exclusively on transport issues, if urban planning is not done right; the time to consider the problems of sustainability in urban transport is when we are planning the city. He stressed the need to enhance the **link between transport and urban planning**. At the same time, referring to the discussion on freedom he said he recognized that urban planning had to serve the collective interest, but that we also needed to consider personal choice.

Toward Environmental Pressure Indicators (TEPI); André Viergever, Eurostat

28. Mr. André Viergever, a consultant with the European Commission, said a first report on Environmental Pressure indicators was due to come out, two of which applied to urban transport: (1) car share of urban passenger transport, and (2) people endangered by noise emissions from urban traffic. In the case of the first indicator, he pointed out the problem of definition: what is urban transport delimitation, city, intercity, city hinterland? Also, it is difficult to know what the urban percentage is for each transport mode. Regarding the second indicator, he noted that a European Working Group on Noise said that this should be based on average weighted sound pressure levels, but that better meta-data was needed.

RESULTS OF THE TASK FORCE (ANNEXES 2 & 3)

29. The task force broke into five separate groups and developed first general policy objectives, and thereafter proposed appropriate indicators to monitor, measure and report on progress on those policy objectives (Annex 2 and 3). The various organizers said they were grateful for the opportunity to bring together experts in transport, statistics and urban planning and hoped that follow-up work in this area, including a meeting scheduled for 2001 in Prague on Definitions, would lead to the development of a concrete list of indicators to help measure progress toward urban livability.

Annex 1

Task Force on Sustainable Urban Transport Indicators

28-29 March 2000, Barcelona

Venue: Universitat Pompeu Fabra, Auditori França

Passeig de Circumval·lació 8

Organized by the Institut d'Estudis Territorials (IET)
and the Autoritat del Transport Metropolità de Barcelona (ATM)
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FINAL AGENDA

Tuesday, 28 March 2000

10:00

Agenda item 1:

Opening of Task Force Meeting

Mr. Albert Serratosa, President IET and Mr. Francesc Xavier Ventura, General Director ATM

Agenda item 2:

Election of Chairperson, designation of Rapporteurs and Moderators

Agenda item 3:

Background and Impetus for Task Force Meeting

Rafael Giménez Capdevila, IET; Brinda Wachs, UN/ECE, Geneva

Coffee Break

11:00

Agenda item 4:

Exchange of Information on the State of the Art on Urban Transport Indicators at International Organisations

- (a) The Harmonisation of Urban Transport Statistics at the International Level
Brinda Wachs, UN/ECE, Geneva
<http://www.unece.org/trans/welcome/html>
- (b) European Urban Statistics
Graham Lock, Environment Statistics, Eurostat, Luxembourg
Hans Strelow, Transport Statistics, Eurostat, Luxembourg

- (c) Urban transport benchmarking projects at the European Commission (EC)
Richard Deiss, EC, DG-Transport, Brussels
<http://www.eltis.org/benchmarking/d.htm>
- (d) Experience of ATM in the Processing and Treatment of Data; Mayte Capdet
and Jordi Prat, ATM, Barcelona
<http://www.atm-transmet.es>
- (e) Transport Indicators in Regional and Town Planning and the Concept of
Metropolitan Area; Francesc Carbonell, IET Barcelona, Andreu Ulied,
Andreu Esquius and Enric Cañas, MCRIT Barcelona <http://www.upf.es/iet/> ;
<http://www.mcrit.com>

12:30

Agenda item 5:

National Reports on activities in urban transport statistics and indicators

- (a) Czech Republic: Proposed definitions for statistical purposes; Milan Brich
- (b) Hungary; Ivan Helcz
- (c) Spain
- (d) Sweden; Lennart Thörn
- (e) United Kingdom; Mike Haslam

13:30 Lunch Break

15:00

Agenda item 6:

Consideration of policy objectives for sustainable urban transport
General discussion

Agenda item 7:

Examination of existing methodologies in identification of indicators

- (a) Driving force-Pressure-State-Impact-Response model
European Commission / Eurostat / European Environment Agency
http://esl.jrc.it/envind/idm_e_03.htm
- (b) Toward Environmental Pressure Indicators (TEPI);
André Viergever, Eurostat
<http://e-m-a-i-l.nu/tepi>
- (c) Environmentally Sustainable Transport (EST) Indicators
Richard Gilbert, Centre for Sustainable Transportation, Toronto
<http://www.web.net/~cstctd>

- (d) Guidelines for collecting and analysing urban indicators data; United Nations Urban Observatory / Urban Indicators Programme; UN Habitat and Commission for Sustainable Development (CSD);
<http://www.urbanobservatory.org/indicators/database/key.html>

Break

Agenda item 8:

Development of Draft List of Indicators on Sustainable Urban Transport

18.00 End of first day

Evening gathering: Promenade in the Gothic Quarter, finishing with dinner together (at charge of participant)

Wednesday, 29 March 2000

9:30

Agenda item 8, continued

Development of Draft List of Indicators on Sustainable Urban Transport

<http://www.oecd.org/cem/UrbTrav/index.htm>,

TRANS/WP.6/2000/3 (United Nations document)

Coffee break

Agenda item 9:

Consideration of definitions for Draft Indicators

Terminology and definitions related to Sustainable Urban Transport

UN Urban Observatory, Glossary for Transport Statistics, Czech Republic, others

www.oecd.org/cem; www.urbanobservatory.org/indicators/database/key.html

Agenda item 10:

Conclusions and Recommendations

Break-out groups to develop recommendations based on selected indicators and policy objectives

Agenda item 11:

Other business: plans for follow-up work, etc.

Agenda item 12:

Adoption of Conclusions and Recommendations and close of meeting

14:00 Final Lunch

16:00-18:00

Technical visit

Annex 2**Draft List of General Policy Objectives
developed by the Task Force on Sustainable Urban Transport Indicators****Overriding policy objective:**

To promote efficient, fair, safe and environmentally sustainable urban transport systems.

Four (4) targets:

1. The urban environment should allow for high quality, efficient and safe access for all to people, services, and goods.
2. Urban transport should have a sustainable level of resource use, including land use.
3. The urban transport system should have a sustainable level of emissions, including noise.
4. The urban environment should provide a high level of satisfaction and high overall quality of life in the urban area as relates to the transport system.

Ten (10) General Policy Objectives (comments made by Task Force in Italics)

1. Reduction of locally- and globally-acting pollutants;
 - Energy efficiency
 - Lower energy consumption
 - Promotion of alternative energy sources (bio-fuels and ultra-low sulphur diesel)
2. Urban transport safety
 - Reduction of accidents (fatalities and injuries) in built-up areas.
3. Access/accessibility to public transport: All aspects of the urban transport system must be suitable for people of limited mobility (strollers, wheelchairs, elderly, etc.) including elevators and ramps, when necessary.
4. Efficiency in Public Transport
5. Noise reduction
6. Integration of Land Use and Urban Transport Planning and transport services / environmentally-friendly zoning

7. Modal shift (away from private car use); largest number of journeys made in alternatives to private car use (bike, foot, etc.) The urban transport system should be well-integrated, including the part using non-motorized modes (e.g., bikes on trams and subways; easy to walk or bike to public transport system). The highest priority in the urban transport system should be given to non-motorized modes (walking, bicycling, skating).
 8. Improved efficiency in Urban freight transport; improved logistics/delivery techniques Freight logistics in urban areas require special attention!
 - to reduce congestion (traffic management);
 - to reduce emissions (idling);
 - improved delivery techniques (just-in-time, etc.)
 9. Preservation of cultural heritage / visual quality / urban livability
 10. Integration of external costs / price signals
-

Annex 3

Draft list of Indicators for Sustainable Urban Transport

To measure, monitor and report on progress made on above-mentioned policy objectives, as developed by the Task Force on its first session.

Policy objective 1: Reduction of locally-acting and globally-acting emissions;

Possible indicators:

- **Energy consumption by mode in urban (built-up) areas, by fuel type**
- **Estimates of mileage (passenger/kms and vehicle/kms), by public and private transport**
- **Transport share of total emissions (CO₂ NO_x VOC PM SO_x), by mode**
- **Sales of Transport Fuels** (although consumption may be outside urban area)

Policy objective 2: Urban Transport Safety;

Possible indicators:

- **Number of accidents (fatalities and injuries) by mode (road, rail, inter-city rail, bus, tram, trolley, cycles, pedestrians, goods vehicles), in built-up areas and by user group** (UN/ECE Bulletin of Road Traffic Accidents in Europe)

Policy objective 3: Access/accessibility;

Possible indicators:

- **Proportion of urban population living within 500 meters (5-10 minutes' walk) from public transport access point.**

Policy objective 4: Efficiency in Public Transport;

Possible indicators:

- **Modal share of urban public transport**
- **Passenger satisfaction**
- **Public transport performance (UN/ECE Pilot Quest. on Urban Pass. Transport)**
- **Energy efficiency by public transport**

Policy objective 5: Noise reduction;

Possible indicators:

- **Proportion of population exposed to greater than 65 db A, by source of noise** (taking into account different sources of noise, including air traffic);
and

- **Measure of on-street and off-street levels of noise**

Policy objective 6: Integration of Land Use and Urban Transport Planning and Transport Services/ Environmentally-friendly zoning;

Possible indicator:

- **Whether transport planning strategy in place**

Policy objective 7: Modal shift (away from private car use);

Possible indicator:

- **Number of journeys made in alternatives to private car use (bike, foot, etc.)**
- **Priority in urban transport plan given to non-motorized modes (walking, bicycling, skating).**

Policy objective 8: Improved efficiency in Urban freight transport;

Possible indicators:

- **Veh/kms by type of vehicle (not tonnes/kms because of empty loads)**
- **Noise emissions, particulates**
- **Freight logistics, distribution , pricing (response indicators)**

Policy objective 9: Preservation of cultural heritage / visual quality / urban livability/ citizen satisfaction;

Possible indicators:

- **Levels of satisfaction (enquête)**
- **Level of communication between policy-makers and urban planners,**
- **Rate of emigration from the city vs. employment opportunities**

Policy objective 10: Internalization of external costs / price signals;

Possible indicators:

- **How much are real costs of urban transport covered by the user (road pricing/fuel pricing)**
-

Annex 4

**Task Force on Sustainable Urban Transport Indicators
(28-29 March 2000, Barcelona)**

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